

MECHANISMS INVOLVED IN THE PSYCHOLOGICAL DISTRESS
OF BLACK CARIBBEANS IN THE UNITED STATES

by

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ABSTRACT

MECHANISMS INVOLVED IN THE PSYCHOLOGICAL DISTRESS OF BLACK CARIBBEANS IN THE UNITED STATES

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Co-Chairs: James S. Jackson and Tabbye Chavous Sellers

The mental health of ethnic minorities in the United States is of urgent concern. The accelerated growth of groups of ethnic minorities and immigrants in the United States and the stressors to which they are exposed, implores academic researchers to investigate more deeply health disparities and the factors that exacerbate or minimize such inequalities. This dissertation attended to that concern. It used data from the National Survey of American Life (NSAL), the first survey with a national representative sample of Black Caribbeans, to explore mechanisms that involved in the psychological distress of Black Caribbeans in the United States.

In a series of three studies, the dissertation investigated the role and consequence of 1) chronic discrimination, immigration factors, and closeness to ethnic and racial groups; 2) personal control and social support; and 3) family relations and social roles in the psychological distress of Black Caribbeans.

Study 1 examined how the associations between discrimination and psychological distress were buffered or exacerbated by closeness to ethnic group and closeness to racial group. It also examined how these associations differed depending on immigration factors. Results indicated that the buffering or exacerbating effect of ethnic and racial group closeness varied according to the type of discrimination (subtle or severe) and were more pronounced among those born in the United States.

Using the stress process framework, Study 2 tested moderation and mediation models of the effects of social support and personal control in the association between discrimination and distress. Results from a series of analyses on 579 respondents suggested that personal control served as a mediator in this relationship and that emotional support exerted a direct distress deterring function.

Study 3 investigated sex differences in the associations between social roles, intergenerational family relationship perceptions and distress. Results suggested that positive relationships with an adult son/daughter and with a father, and negative relationships with a mother increased men's distress. Few social roles increased the negative effect that women and men's relationships with an adult son/daughter had on their distress. Multiple roles also increased the negative effect that women's relationships with an adult son/daughter had on their distress. On the other hand, few social roles decreased the distress associated with men's high conflict relationships with mothers.

The findings from these three studies suggested that modeling immigrant and ethnic minority mental health requires sensitivity to their immigrant and ethnic minority statuses and to the contexts in which these group members carry out their daily activities.

CHAPTER ONE

INTRODUCTION

Little is known about the health of ethnic minorities and immigrants in the United States. Yet, such research is vital to a more complete understanding of ethnic health disparities. Because most ethnic populations in the United States have their origin in immigrant groups, examining the social disadvantages that these groups face sheds light on the mechanisms that foster health inequalities. One of the fastest increasing ethnic groups in the United States is Black Caribbeans. The implications of an in-depth study of the factors that predict the health of Black Caribbeans are enormous.

The illustration of within-racial-group heterogeneity in the factors that predict health is one such implication. This heterogeneity in predictors of health outcomes has been examined with Latinos in the United States (e.g., Zsembik & Fennell, 2005). However, less attention has been focused on the ethnicity-specific predictors of health among Blacks.

The majority of non-Hispanic Black Caribbeans becomes an “invisible” minority (Kasinitz, 2001). This occurs because they speak English and bear no physical markers of their country of origins or their ancestors’ country of origin. Studies on the health of Blacks in the United States often conflate Black Caribbeans and African Americans because of these factors. However, both the determinants of health and the contexts in which health trajectories occur can be different for these ethnic groups (Read & Emerson,

2005; Read, Emerson, & Tarlov, 2005). A focus on Black Caribbeans illuminates just how different these can be.

Another key implication of studying the health outcomes of Black Caribbeans is a clarification of the unique risk and resiliency pathways of intra-racial/inter-ethnic groups. Because of apparent similarities, intra-racial/inter-ethnic groups are normatively used as comparison groups for one another. Although less the case for other racial groups, this use of a normative comparison group is often the case with research on Blacks in the United States. An exclusive reliance on this type of research has several drawbacks.

One disadvantage is that the ethnic groups are pitted against each other, either explicitly or implicitly. Black Caribbeans are frequently adopted as a comparison group when African Americans are examined. This has been done in research on educational (e.g., Massey, Mooney, Torres, & Charles, 2007) and economic outcomes (Model, 2008). The result is a one-dimensional portrait of Black Caribbeans as a model minority or as culturally superior.

Applied to health research, studies that find that Black Caribbeans have better health outcomes when compared to African Americans can be used to suggest that African Americans are somehow deficient or pathological. These findings support a perspective that African Americans must “pull themselves up by their boot strings”. The implicit assumption is that if another Black ethnic minority group can make it in the United States, then African Americans should have better health outcomes than they do. This intra-racial/inter-ethnic comparative approach to understanding health inequalities distracts attention away from the structural conditions that influence health inequalities.

Instead, it suggests that African Americans' poor health outcomes are tied to their innate characteristics.

However, an over-reliance on comparative methods not only disadvantages the group that appears to do “worse” on the outcome studied, it is also a disservice to the complexity of the lived experience of the group that seems to do “better”. The better/worse group comparisons, not only obscure variation; they also obscures the unique challenges and cultural and personal resources that members of these ethnic groups possess. Even though the findings seem to benefit the group that does “better”, they fail to capture the unique challenges that these group members have. They also fail to examine the culturally grounded mechanisms that promote these positive outcomes. With respect to health research, when comparative research paints a positive profile of the health one group, it diverts attention from understanding the nuances of the vulnerability and protective factors, as well as the risk and resource factors (Holmbeck, Friedman, Abad, & Jandasek, 2008; Rose, Holmbeck, Coakley, & Franks, 2004) that are at work in that group's health.

Although comparative research is crucial to understand health inequalities (e.g., Takeuchi, Alegría, Jackson, & Williams, 2007), for the reasons just presented, this dissertation project does not use a comparative framework. Instead, it focuses on an in depth exploration of the health of Black Caribbeans.

A second reason for this dissertation's focus on an in depth examination of the health of Black Caribbeans relates to the generalizability of previous research findings on psychological factors that predict mental health. Little is known about whether and how psychological factors that have been established with majority and more traditional

minority populations such as African Americans, operate as mechanisms in the health of Black Caribbeans.

The purpose of this dissertation is to explore the mechanisms involved in the mental health of non-Hispanic Black Caribbeans in the United States. This includes Black Caribbean immigrants and those of immigrant ancestry from the Dutch, British and French West Indies. The dissertation uses data from the first-ever national probability sample of non-Hispanic Black Caribbeans in the United States, the National Survey of American Life (NSAL) (Jackson et al., 2004). In three distinct but related empirical studies, the project explores how 1) discrimination, identity, and immigration factors; 2) personal control and social support; and 3) family relations and social roles are associated with Black Caribbeans' mental health.

This general introduction prefaces the empirical studies in five main sections. First, it discusses the scope of the dissertation project. Second, it presents a demographic profile of non-Hispanic Black Caribbeans in the United States. Third, it reviews the research on understanding immigration and health outcomes. Fourth, it provides a synopsis of the limited, albeit burgeoning research, on the mental health of non-Hispanic Black Caribbeans in the United States. Fifth, and finally, it introduces the three empirical studies.

Scope of and Rationale for the Dissertation Project

It is important to set the margins of this dissertation project. This can be done by discussing both what the project does not do and what it examines.

The first main strategy that this project does not adopt is to use either of two comparative approaches that are central to a great deal of immigration and health

research. The first approach that the project does not use is one that compares the immigrant population of interest with other ethnic groups native to the country to which the immigrants have moved. This type of approach is used to ascertain how the immigrant group of interest compares to other groups. This project is not concerned with how Black Caribbeans fare in relation to other ethnic minorities or the ethnic majority population in the United States. As such, it does not compare the health of Caribbeans in the United States with other ethnic groups in the United States.

The second approach that the project does not use is one that compares the immigrant population of interest with native populations from the immigrant's country of origin. There are several merits to such an analysis, including the potential to disentangle "the magnitude and mechanisms shaping health selectivity" (Jasso, Massey, Rosenzweig, & Smith, 2004, p. 263). This is one of the most widely discussed topics in immigrant health research. However, the project does not focus on these types of comparisons for both for practical and substantive reasons. Practically, the dataset that the project uses does not have this information on the health of persons in the countries of origin. Substantively, the current project is interested in the health of Black Caribbeans in a migration context.

Thus, the project adopts a largely non-comparative framework. An important caveat is that the first and third empirical studies contain comparative elements. The first study compares different levels of immigration factors. The third study compares women and men.

This dissertation project is located in the body of work that deals with the determinants of health profiles and trajectories of ethnic minority groups following

immigration. These psychological determinants include, but are not limited to, chronic discrimination and social support. Studies of specific ethnic minority groups help elucidate the mechanisms that contribute to the heterogeneous health outcomes that have been noted in studies on health selection and immigrant adaptation. However, few studies examine ethnic minority and immigrant groups in depth. The ethnic health disparities literature also lacks a substantial body of work on sub-clinical mental health, especially in research on immigrant populations.

As one of the largest Black immigrant groups in the United States, Black Caribbeans provide a useful ethnic group with which to examine the ways in which psychological factors are associated with the health outcomes of ethnic minority populations. In recent research comparing non-Hispanic Whites, Asians, Latinos, and Black Caribbeans, and looking at the differences between the foreign born and native United States born counterparts, Black Caribbeans were highlighted as having the starkest putative health depletion, for physical health outcomes and mortality (Williams, 2008). Although it is still unclear why this group fares so badly in comparison to other ethnic groups, what is clear is that the mental health of Black Caribbeans in the United States is an exigent concern to researchers of ethnic health disparities. This dissertation is an in depth analysis of the psychological processes associated with the mental health of Black Caribbeans.

The second main strategy that the dissertation project does not use is to examine multiple measures of mental health. It does not examine positive mental health outcomes, nor does it examine extremes of poor mental health. Taking either of these approaches has definite advantages. As part of a research program geared toward understanding and

reducing health disparities and increasing individual-level and social factors that act as protective and resource factors in health more broadly conceptualized, these approaches will, in fact, be pursued in my future research. However, this dissertation project investigates mental health, and within the universe of possible mental health outcomes, it focuses on only one: psychological distress.

Undoubtedly, the dissertation project's approach does not capture the universe of diverse outcomes. Mental health, for example, can be conceptualized as multidimensional, with a range of measurements. These may be positive, such as happiness and life satisfaction. They may be negative. Negative mental health outcomes can be further disaggregated into poor mental health that is of a clinical level (for example, major depressive disorder, mania, and substance disorders) or of a subclinical level (for example, depressive symptoms and psychological distress). In not capturing the universe of possible mental health outcomes, the dissertation thus does not focus on understanding how the mechanisms examined relate either to positive health outcomes or more severe types of poor mental health. These are all valid and essential areas of exploration that will be investigated in my broader research program.

For the purposes of the dissertation, however, a limited focus on only one mental health outcome across three different empirical studies presents a crucial advantage. This advantage harkens back to the earlier discussion on the heterogeneity of the immigrant and ethnic minority's experience in the United States. Across three distinct empirical studies, this dissertation project examines one measure of sub-clinical levels of poor mental health: psychological distress. By varying the independent variables and mediators or moderators across the three empirical studies while maintaining the same

dependent variable, the dissertation project addresses multiple mechanisms that could be related to the single outcome in the population studied. Doing this emphasizes the diversity of the Black Caribbean population in the United States and the mechanisms that relate to their psychological distress.

A Demographic Profile of Non-Hispanic Black Caribbeans in the United States

Today, approximately 2.5 million United States Blacks claim non-Hispanic Black Caribbean ancestry (see Table 1.1). As Table 1.1 shows, these individuals make up nearly one percent of the total United States population. Although that percentage might seem inconsequential, United States non-Hispanic Blacks now supercede and are growing faster than well-known minorities such as Cubans and Koreans (Logan, 2007). For example, the number of people who claimed Trinidadian and Tobagoian ancestry in the 2000 census almost doubled those who claimed this ancestry in the 1990 census (Brittingham & de la Cruz, 2004).

Table 1.1 highlights other interesting characteristics of this population in the United States. First, The top four country-specific non-Hispanic Black Caribbean ancestry groups are Jamaican, Haitian, Trinidadian and Tobagoian, and Guyanese, with Jamaicans and Haitians comprising approximately 35 and 29 percent respectively of the total non-Hispanic Black Caribbean ancestry category. The other ancestries that are subsumed under the Caribbean ancestry category, in order of decreasing group numbers, are West Indian, British West Indian, Dutch West Indian, Barbadian, Belizean, and Bahamian.

Table 1.1 also shows that over one million persons who claim Caribbean ancestry are United States natives, implying that these individuals were born to at least one native

Caribbean parent or have Caribbean ancestry. Nevertheless, about 60 percent of persons who claimed Caribbean ancestry were foreign born. The one exception to this is persons with Dutch West Indian ancestry. In these cases, the number of United States natives who claim Caribbean ancestry far outnumber the number of foreign born who do.

These numbers point to a history of migration flows from the non-Hispanic Caribbean that have been steady since the mid-twentieth century (for more on the history of migration to the United States from Haiti and the West Indies see, Catanese, 1999; Kasinitz, 1992). These migration flows have been responsible for the large numbers of Caribbeans in the United States. For example, recent estimates suggested that the non-Hispanic Caribbean born accounted for approximately 10 percent of the total United States foreign born population in the 2000 decennial census (Gelatt & Dixon, 2006). These migration flows also contribute to demographic shifts in the Caribbean countries. The booming of a large non-Hispanic Caribbean diaspora in the United States is related to reductions in the overall population sizes in the Caribbean countries. For every Jamaican ancestry born person in the United States, there are fewer than five people living in Jamaica, and for every Guyanese ancestry person born in the United States, there are fewer than three people living in Guyana (Kent, 2007).

The Heterogeneous Non-Hispanic Black Caribbean Population in the United States

The within group differences among non-Hispanic Black Caribbeans in the United States are not merely immigration markers. They have real and serious implications for incorporation into, adaptation to, and health outcomes within the context of the United States. It is for this reason that this section explores some of this diversity.

The non-Hispanic Black Caribbeans resident in the United States are not a random sample of persons from their home countries. For example, a recent report from the Organisation for Economic Co-operation and Development (OECD) indicated that Haiti, Jamaica, and Trinidad and Tobago are three of the four countries in which there is a trend toward a “brain drain,” with 40-80% of nationals who migrate to more developed countries being educated and well-trained nationals. This contrasts with the vast majority of other countries in which the “brain drain” is actually a myth (Organisation for Economic Co-operation and Development, 2008).

These types of characteristics begin to paint a picture of the issues and conditions that potentially impact the mental health of this group. For instance, it is precisely because non-Hispanic Black Caribbeans do not represent all Caribbean Americans—especially people from the Hispanic Caribbean (Latinos)—and because they do not represent people who live in the Caribbean, that models of health that have been developed for these populations and contexts should be rigorously tested. Such tests help determine whether the models are valid for this group.

Nonimmigrant and Immigrant Visa Categories

There is much diversity within the resident non-Hispanic Black Caribbean population in the United States. Individuals are either born in the Caribbean or born in the United States. Some individuals are born neither in the Caribbean nor in the United States, but they end up living, at least for some time, in the Caribbean region and/or the United States. Among the foreign born in the United States, there are those who are on what the Department of Homeland Security (DHS) refers to as immigrant visas, and there are those who are on nonimmigrant visas.

Those on immigrant visas are sanctioned by the DHS to have longer term, or perhaps permanent, residence in the United States, while those on non-immigrant visas are understood to be residing in the United States temporarily. Naturalizations (becoming United States citizens), and Legalized Permanent Resident status are reserved for those on immigrant visas. Nonimmigrant visas are for those with a specific timeline during which they are supposed to complete what they entered the United States for. This can be business, study, temporary work, or tourist related travel. If they do not leave the United States at the previously determined time, they lapse into illegal status.

As such, large-scale survey studies and government censuses that collect data on Black Caribbeans in the United States tend to capture data either on Black Caribbeans who are native to the United States or those who are in the United States on immigrant visas. Not generally captured in those studies is the non-Hispanic Black Caribbean migration traffic between the Caribbean and the United States.

Table 1.2, however, sheds some light on this group. As the table demonstrates, nonimmigrant admissions from non-Hispanic Caribbean countries is substantial, with over 1.1 million cases reported in the 2007 fiscal year. Although there are some differences in the ranking of the Caribbean countries represented in these migration flows, Jamaica, Trinidad and Tobago, Haiti, and Guyana are still within the top ten countries represented. This provides some basis for the expectation that the immigrant and naturalized populations from these countries to the United States will continue to increase over the next several years.

Although tourist visas are the most numerous (90.14 percent of the total number of nonimmigrant visas), there is still a substantial number of nonimmigrant visas within

the “student and exchange visitors” and the “temporary workers and families” categories of admission. These two categories sometimes provide pathways for immigrants to obtain longer stays within the United States and eventually to gain permanent immigrant statuses, such as legalized permanent residency.

Table 1.3 highlights the broad class of admission, according to country, for persons obtaining Legalized Permanent Residency. The table shows a now well-established trend within the Caribbean immigrant community in the United States: these Black immigrants come mostly to join their family members who have already established roots in the United States. The dominance of this broad class of admission contrasts with the main category of admission for Black immigrants from Africa. The majority of African immigrants arrive in the United States on diversity visas and with refugee status (Kent, 2007). Contrasting that trend, the table highlights that in 2007, nearly 57 percent of Black Caribbean immigrants were immediate relatives of United States citizens and another nearly 28 percent entered the United States on family-sponsored preferences.

The immediate relatives category includes spouses, children who are minors, and parents of United States citizens. The family-sponsored preferences category includes 1) adult children, 2) married sons and daughters and their families, 3) brothers and sisters of United States citizens who are at least 21 years of age, and 4) spouses, minor children, and unmarried sons and daughters of lawful permanent residents. These numbers show an increase of five percent in the immediate relatives category and a decrease of seven percent in the family-sponsored preferences category (from comparison between data in Kent, 2007 and Table 1.3). The increase of those in the immediate relatives category

might be due to the increasing number of non-Hispanic Black Caribbeans who are United States citizens. This allows them to file for immediate relatives.

Table 1.3 highlights more country-specific diversity among the non-Hispanic Black Caribbeans that have implications for mechanisms involved in health outcomes. The table shows that the largest category of admission for Jamaica and Trinidad and Tobago was the immediate relatives of citizens one. This proportion was 70.20 percent for Jamaica and 68.22 percent for Trinidad and Tobago (calculations not shown). The pattern was similar for the Guyanese immigrants. Although a lower proportion (45 percent) of Guyanese compared to the proportion for Jamaica and Trinidad and Tobago entered as immediate relatives of United States citizens, the majority of Guyanese immigrants arrived on family-sponsored preferences. This entry category has implications for health outcomes. Immigrants who enter the United States with family networks already present have less positive health selection than those who enter on employment or study visas (Akresh & Frank, 2008; Jasso et al., 2004). As such, it is possible that immigrants from these three countries might demonstrate less positive health selection than might immigrants from other countries.

On the other hand, the “refugees and asylees” entry category of a large proportion of Haitian immigrants suggests negative health selection effects. Refugee and asylee visa recipients, in contrast to all other visa categories, tend to have more negative health selection (Akresh & Frank, 2008; Jasso et al., 2004). Although a majority of Haitian entrants arrived as immediate relatives of United States citizens (44.63 percent) and a substantial proportion arrived on family sponsored preferences (26.40 percent), the large

percentage of Haitians on refugee or asylee visas suggests another health selection effect that must be considered in understanding their health outcomes.

These findings underscore the contrasting trends in health selection among non-Hispanic Black Caribbean immigrants. They imply that these immigrants and their descendants may demonstrate distinct health profiles and trajectories. And they help explain why some studies (e.g., Williams, 2008) find that Black Caribbeans demonstrate worse health outcomes when compared to other ethnic minority and immigrant groups in the United States.

Residential Patterns

Black Caribbeans, both foreign born and those native to the United States, are heavily concentrated on the Northeastern and Southeastern coasts. The Caribbean born comprises at least 15 percent of the foreign born populations in Florida, New York, Rhode Island, and New Jersey (Gelatt & Dixon, 2006). Calculations from the 2000 decennial census highlighted that in Miami, West Palm Beach, Boston, and Newark, Haitians are the most numerous of the non-Hispanic Black Caribbeans (Logan, 2007). They also show that Jamaicans outnumber any other non-Hispanic Black Caribbean group in Fort Lauderdale, New York, Nassau-Suffolk, Washington, D.C., and Atlanta, (Logan, 2007).

According to the 2000 decennial census, in the areas in which Haitians are the most numerous, they comprise anywhere between 12 to 34 percent of the Black and two to seven percent of the total metropolitan population in those areas; in the areas in which Jamaicans are most numerous, they comprise anywhere between 3 to 43 percent of the

Black and one and nine percent of the total metropolitan population in those areas (Logan, 2007).

Immigrant Generations & Immigration Cohorts

There is an increasing literature on the importance of looking beyond the crude categories of immigrant and second generation in order to capture the complexities of the migrant experience. Rumbaut (2004) has suggested that subdivisions of generational levels 1.5 and 2.5 are needed to capture the complexity of the migrant experience. Generation 1.5, for example, would include those who migrated as children below the age of twelve. Although this is a key source of diversity within non-Hispanic Black Caribbeans and other immigrant/ethnic minority populations, few studies have the data that appropriately assesses these statuses. As a result, there is much to be learned about how these different generational levels and points of entry into the United States, or other migratory destinations for that matter, may influence health outcomes.

Social Characteristics

Sex distribution.

Table 1.4 presents the highlights of the social characteristics of the non-Hispanic Black Caribbean population in the United States. The first key characteristic is the sex proportions. Across each of the countries represented in the census data, there is a clear pattern of more women foreign born than men foreign born. These percents are quite striking for female immigrants from Dominica, Grenada, and St. Vincent and the Grenadines. This increased proportion of immigrant women mirrors the total United

States population's slightly greater female-male ratio, in which there is a breakdown of 50.8 percent female versus 49.2 percent male.

However, the female-male ratio bias is much greater in the case of the non-Hispanic Black Caribbean immigrants. The countries most represented show anywhere from almost 57 to almost 52 percent of women in the immigrant population. For example, the female immigrant proportions from Belize, Jamaica and Trinidad and Tobago are over five percent more, and the proportion from Guyana, is more than three percent more. Haiti's female immigrant proportion is the exception, with a female immigrant population only one percent higher than the general United States population.

This speaks to the large numbers of women who migrate from these countries in search of a better life for themselves and their children. It might be linked to women's tendency to be the first movers. This often occurs when women try to be the first to gain employment to help the rest of the family that will follow later. It can occur too when female relatives move before male ones to join kin. This gender distribution has serious implications for the health of these immigrants in the United States. Recent research suggests that the odds of positive health selection are lower for women than for men (Akresh & Frank, 2008). The greater proportion of female immigrants might suggest an increased likelihood of positive health selection. However, how this interacts with other factors (e.g. entry category) that suggest positive or negative health selection has not been investigated.

Age distribution.

The second key characteristic that Table 1.4 shows is the age distribution of the foreign born. The findings speak to the impact that migration has on the population

distribution. The age distribution of the general United States population is divided as follows: 24.7 percent under 18, 23.3 percent between 18 and 34, 39.7 percent between 35 and 64, and 12.5 percent 65 and older.

The under-18 immigrant proportion is quite dissimilar to under-18 proportion within the general United States population. This is because the majority of persons who migrate are adults under the age of 35. In the general United States population, the under-18 group comprises nearly a quarter of the population. However, among the non-Hispanic Black Caribbean foreign-born, the proportion for this group ranges only between 2.5 percent (Other Caribbean Countries) and 8.7 percent (Dominica).

The 18 to 34 year old age group in most of the countries represented is similar to the proportion for the United States population. However, across the Caribbean countries represented, the 35 to 64 group—the group of adults who are agents in the migratory journey—largely outnumbers that age group in the general United States population. In the general United States population this proportion is a mere 39.7 percent; it is 50 percent and over proportion in the countries represented.

The distributions for the countries with the highest numbers of immigrants (Jamaica, Haiti, Trinidad and Tobago, and Guyana) are quite similar to one another. The exceptions are Haiti's higher proportion of under-18 and Trinidad and Tobago's lower proportion of 65-and-older.

The large non-Hispanic Black Caribbean adult population underscores the inadequacy of studies that focus solely on the health of children and adolescents. Unfortunately, the majority of studies on Caribbeans and Caribbean immigrants (e.g., Deaux et al., 2007; Hall & Carter, 2006)—including health-related studies (e.g., Blum et

al., 2003; Blum & Ireland, 2004; Halcón et al., 2003)—uses adolescent and children samples. Because such a considerable percentage of these immigrants are adults, it is imperative that health research uses samples of adult immigrants and adults with immigrant ancestry. The continued use of convenience samples of college-aged students leads to a limited understanding of the health of this ethnic group. It distracts from the gathering of generalizable data on the health profiles and post-immigration health trajectories of the majority adult non-Hispanic Black Caribbean population in the United States.

Persons in household.

Information on the household composition of the non-Hispanic Black Caribbeans in the United States is presented in Table 1.4. As within the general United States population (but higher), the largest category was the householder or spouse. The number of other relatives in the household is quite striking. The proportions for most countries almost doubled the 6.6 percent within the general United States population. This tendency has been noted in empirical research on immigrant and immigrant ancestry populations in the United States, and particularly among Black Caribbeans (e.g., Fiori, Consedine, & Magai, 2008).

The proportions for the countries with the most immigrants again have remarkable similarities. In all the countries, the comparatively modest proportions of children in the household again highlights the small proportion of children and adolescents in the non-Hispanic Black Caribbean foreign born. The proportion for the Black Caribbean population does not approach the 30.4 percent of children represented in general throughout households in the United States.

One country stands out, however, because of its higher proportion of children in the household. Guyana's 18 percent proportion of children in the household is striking when compared to Haiti, Jamaica, and Trinidad and Tobago's proportions. These countries all have approximately half the United States proportion of children in the household. Guyana's higher percent of children is likely related to its higher proportion of married persons when compared to the other countries.

The higher proportion of married persons and of children in the household might be linked to the ethnic breakdown of immigrants from Guyana. Guyana, like Trinidad and Tobago, has a large East Indian population. However, unlike Trinidad and Tobago, the majority of Guyanese immigrants to the United States tend to be of East Indian descent. Because of cultural norms promoting marriage and the primary role of family (Leo-Rhynie, 1997; Roopnarine et al., 1997), Guyanese immigrants with East Indian ethnic backgrounds might be more likely to immigrate with other kin.

Quite striking is the large proportion of Haitians in households with other relatives when compared to other countries. Haitians tend to migrate to the United States with extensive familial networks already in place. Such networks can be considered as a buffer against detrimental health outcomes. However, whether this potentially protective effect overpowers the baseline negative health selection among the majority of Haitians remains to be investigated.

Marital status.

In terms of marital status, Table 1.4 again highlights key similarities and differences in non-Hispanic Black Caribbeans. Across most of the Caribbean countries' foreign born populations, the proportion of those who were currently married tended to

be less than within the United States population, although not by more than 10 percent. Guyana was the exception to this pattern, with the proportion of married persons from that country being more than within the general United States population. The never married category was largely similar to the United States general population proportion. Strikingly, the proportion of the widowed and the separated were both greater among the foreign born in each of the Caribbean countries represented than within the general United States population. Prior research has shown that these statuses increase the risk of poor health outcomes.

Language.

The heterogeneity of language used—one of the key indicators of health selection and post-migration positive health status (Akresh & Frank, 2008)—is shown in Table 1.4. Like the general United States population, the majority of foreign-born persons from all the non-Hispanic Caribbean countries represented, except for Haiti and Dominica, reported that their language at home was English only. In Haiti, only 8 percent of the foreign born reported speaking English only, with the vast majority reporting that a language other than English was their primary language. Half of the Haitians who reported that a primary language other than English indicated that they spoke English less than very well.

Similarly, the majority of persons from Dominica (69.7 percent) reported that a language other than English was their primary one. Nearly half of those who reported a primary language other than English reported that they spoke English less than very well. This could be because the vast majority of Dominicans speak a Creole patois, in spite of the official language of the country being English.

High proportions of immigrants who do not speak English as a first language have important implications for research on immigrant health. There might be important differences between those that speak English well and those who do not. These possible differences are obscured when using data collected in English from immigrants such as the foreign born from Haiti or Dominica.

Migration cohorts.

Cohort patterns of immigration are key indicators of heterogeneity within the non-Hispanic Caribbean population. The similarities and differences among these groups, and between these groups and the total United States immigrant population are illustrated in Table 1.4. The table demonstrates that the total United States immigrant pattern of dwindling migration from “before 1990” to “2000 or later” holds true for these non-Hispanic Caribbean foreign born.

However, it also shows that the proportions within each of the cohorts are quite different than the proportion for the general United States immigrant population. The proportion of the non-Hispanic Caribbean immigrants entering “2000 or later” is much lower in each of the Caribbean countries represented than among the general immigrant population, sometimes by as much as 15 percent (in the case of “Other Caribbean” countries). The proportions of those entering before 1990 are much higher, sometimes by as much as 30 percent. The mean proportion of the countries represented is 57.19. This is 12.89 percent more than the general United States immigrant population.

These deviations from the trend of the general United States immigrant population that the non-Hispanic Black Caribbean immigrants suggest another way in which their unique contextual circumstances might influence health. Prior research

proposes systematic differences in health profiles and post-migration trajectories based on immigration cohort (Jasso et al., 2004).

Naturalized United States citizens.

Table 1.4 presents the naturalization rates for this heterogeneous group of immigrants. Among the foreign born, anywhere from 42 percent to 67 percent were naturalized United States citizens. The countries with more than 50 percent of their foreign born naturalized were: Barbados (65.01), Grenada (59.77), Guyana (65.06), Jamaica (57.65), St. Vincent and the Grenadines (58.76), Trinidad and Tobago (52.62), and Other Caribbean (67.01). Those with less than half of their foreign born naturalized United States citizens were: Bahamas (42.73), Dominica (45.83), and Haiti (47.01). Belize was the only country with approximately half of its foreign born naturalized (50.70).

Among the non-Hispanic Black Caribbean naturalized United States citizens, the proportion of females outnumbered the proportion of males. This mirrored the pattern within the general United States immigrant population. However, the male-female distribution of the non-Hispanic Caribbean foreign born who were not United States citizens did not mirror the pattern within the total immigrant United States population for the most part. In the total immigrant United States population, unlike among the non-Hispanic Black Caribbeans, the proportion of males who were not United States citizens outnumbered the proportion of females.

This majority female not-United States-citizens group among the non-Hispanic Black Caribbeans is likely associated with the feminization of the non-Hispanic Caribbean migratory flow to the United States. From the late twentieth century to the

present, non-Hispanic Black Caribbean female immigrants to the United States far outnumber male immigrants (Bonnett, 1990; Crawford-Brown & Rattray, 2001; Thomas-Hope, 1992).

Naturalization has several implications for health outcomes. One of the main pathways through which naturalization affects health is access to health care and to other resources that are inaccessible to non-United States citizens (Derose, Escarce, & Lurie, 2007; Wheeler & Mahoney, 2008). The process of obtaining naturalization, and even Legal Permanent Residence, are also stress-inducing (Jasso, Massey, Rosenzweig, & Smith, 2005). Although naturalized persons have already experienced this stress, once naturalized, they no longer have to endure it. These types of differences within immigrant populations quite likely integrally involved in their health outcomes, especially the mental health outcomes (Bhugra, 2003; Derose et al., 2007; Jasso et al., 2005). Unfortunately, and often because such data are not collected, most studies fail to examine these potential effects, or even to control for them.

Economic Characteristics

Educational attainment.

Table 1.5 shows that there is a higher proportion of non-Hispanic Black Caribbeans with less than a high school education than in the general United States population. This pattern is strongest among the foreign-born from the countries that send the most non-Hispanic Black Caribbean persons. A similar pattern is observed for those with a bachelor's degree, and for those with some college level education or an associate's degree, albeit to a lesser extent.

Nonetheless, the proportion of persons with a graduate or professional degree from the non-Hispanic Caribbean is less than the proportion within the general United States population. This difference in the education profile of non-Hispanic Black Caribbeans has implications for their health profiles and trajectories. A higher education level has been shown to be a strong determinant of positive health selection (Akresh & Frank, 2008; Jasso et al., 2004).

Labor force participation.

Among non-Hispanic Black Caribbeans, a higher proportion of persons are in the labor force when compared to the general United States population. This is seen in the mostly higher proportions of employed persons from specific countries when compared to the proportions for the native United States population. Furthermore, the proportion of non-Hispanic Black Caribbeans who are not in the labor force is lower than the proportion in the general United States population. Sustainable or reliable income is one of the main criteria that the United States government uses to grant the foreign born legitimate residence. This is the case regardless of class of admission. It is thus not surprising that so many non-Hispanic Black Caribbeans are in the labor force.

It is worth pointing out that among the non-Hispanic Black Caribbeans who are in the labor force, there a higher percent are unemployed when compared to the general United States population. This is likely because so many of these immigrants enter the United States to reunite with kin. Those who enter in such categories probably have to seek out employment after arrival. Because unemployment is a key determinant of poor health (Kessler, House, & Turner, 1987; Schwarzer, Hahn, & Fuchs, 1994; Vinokur &

Caplan, 1987), this distinctive characteristic of non-Hispanic Black Caribbeans might suggest an increased vulnerability to poor health.

Occupation type and Class of worker.

When compared to the general United States population, the non-Hispanic Black Caribbean population shows four main differences. First, there is a lower proportion of non-Hispanic Caribbean persons involved in management or professional types of work. Second, the proportions of persons who are involved in service related occupations is higher, with the proportion for Haitians involved in these occupations being a startling 22.8 percent higher than the United States proportion. Third, the proportion of those involved in production, transportation, and moving is lower in all the Caribbean countries than within the general United States population, with the exception of Haitians who are nearly four percent more likely to be involved in these occupation than the general United States population. And fourth, seven out of the eleven countries have higher proportions of those in government work than the general United States population.

There are two main similarities between the occupation types of the total United States population and the non-Hispanic Black Caribbeans. The first similarity is with the proportion of persons in sales and office related occupations. The second similarity is with the proportions of persons who were in the private wage and salary class of worker.

Household income.

The median household income for the majority of the non-Hispanic Caribbean persons was less than the median household income within the general United States population. The reduced median household income of the majority of non-Hispanic Black

Caribbeans compared to the broader United States population can be considered a distal risk factor for poor health. Lower household income, in tandem with the likelihood of having multiple kin to support and the financial and psychological stressors of immigrant status, is likely related to poor health in immigrants and ethnic minorities.

The exception to the pattern of a lower median household income compared to the general United States population was the foreign born from Guyana. The median household income of these immigrants was nearly four thousand dollars more than the total United States population. The higher median household income of the Guyanese could be related to the higher proportion of Guyanese who were married.

Summary of the Demographic Findings on Non-Hispanic Black Caribbeans

The demographic profile underscores the enormous heterogeneity of non-Hispanic Black Caribbeans. Within-group variations were visible in the factors related to their nonimmigrant or immigrant status and to their social and economic characteristics. The overwhelming message from the findings is that the immigrant and ethnic minority experience is not heterogeneous.

The findings speak to the importance of not restricting health disparities research to comparative studies of ethnic minorities. Comparative research undoubtedly has benefits (e.g., Bennett et al., 2008; Takeuchi et al., 2007). Perhaps the most important contribution of this type of research may be shedding light on the ethnic groups that are most at risk for poorer health. However, an over-reliance on comparative approaches eclipses population specific characteristics and contexts that need to be considered to understand health inequalities. Similarly, a failure to examine intra-racial/inter-ethnic sub-group differences obscures their distinctive health profiles and the specific factors

that influence their health (for an exception looking at heterogeneity among Latinos see Zsembik & Fennell, 2005).

In the case of non-Hispanic Black Caribbeans, the findings stress the inadequacy of an over-reliance on comparative approaches to examine their health profiles and post-migration trajectories. The great variation within and across Black Caribbeans is obscured when they are collapsed together and examined as one group in comparison to other ethnic groups. Ethnicity specific processes are obscured because what is studied may be more or less relevant to the particular ethnic groups subsumed under “Black Caribbeans”.

Similarly, studies that focus on one ethnic group and attempt to speak to the “Black Caribbean” experience are often, in fact, not generalizable to other Black Caribbean groups. For example, the majority of studies on Black Caribbean ethnic identity that have been based in the northeast United States, may be assessing particular processes and mechanisms that are more relevant for the Black Caribbean ethnic groups most dominant in that region. It is unclear whether those same processes would work similarly for other Black Caribbeans in different regions, who undoubtedly have different characteristics. In short, the demographic profile suggests that a more nuanced and population specific approach can be beneficial to research on health inequalities.

International Migration and Health

Research suggests that immigrant health deteriorates with increasing time in the United States (e.g., Alegría, Sribney, Woo, Torres, & Guarnaccia, 2007; Angel, Buckley, & Sakamoto, 2001; Escobar, Hoyos Nervi, & Gara, 2000; Harker, 2001; Jackson & Antonucci, 2005; Johnson, VanGeest, & Cho, 2002; Leu et al., 2008). Whether this is in

fact what occurs remains unclear because most studies that have tested these hypotheses have used cross-sectional, not longitudinal data. However, the multitude of studies that find better health among immigrants than among native-born populations has spawned an extensive body of work that attempts to explain why these effects exist. This body of work can be divided into three main explanations.

The first hypothesis that speaks to the deleterious health outcomes that the native born present when compared to immigrants is health selection effects (Akresh & Frank, 2008). And refugees demonstrated higher odds of negative health selection (Akresh & Frank, 2008; Jasso et al., 2004). The latter situation is likely due to the stress and hardship involved in life conditions that leads to the allocation of this status (Akresh & Frank, 2008; Jasso et al., 2004).

Related to health selection explanations for differences in health outcomes between native and immigrant populations is a large body of epidemiological and public health research purports a “healthy migrant effect” (e.g., Palloni & Arias, 2004; Palloni & Ewbank, 2004). This hypothesis suggests that when exposed to the same types and levels of stressors, those who are born outside the United States demonstrate health advantages relative to those who are native to the United States—especially majority group members. Scholars in this line of research suggest that the main effect for outside-the-United States nativity exists even when studies have controlled for positive selection for good health and the increased likelihood of the return of ill immigrants to their home countries (Abraído-Lanza, Dohrenwend, Ng-Mak, & Turner, 1999; Williams, 2002). The effect is thought to be even more powerful because it has been shown to exist regardless of the foreign-borns’ lower social and economic status.

However, recent empirical research comparing Mexican immigrants and Mexicans who live in Mexico has challenged the assertion of the healthy migrant effect (e.g., Rubalcava, Teruel, Thomas, & Goldman, 2008). The study showed that better health for immigrants did not exist for all health outcomes. This finding underscored that nativity and immigrant generation alone cannot explain within group variations in the health profiles of immigrants in the United States. In so doing, this study, and others like it, offers an important critique of models of health inequality that are based on the healthy migrant hypothesis. The also show how these models are implicitly premised on a presumption that some groups, such as migrants, thrive on stress—a presumption that is visible in hypotheses that propose negative health effects for one group (such as native populations) and positive health effects for another (such as immigrants).

The second hypothesis proposed to explain the health differences between immigrants and the native born is the noxious impact of the United States culture. Studies that explicitly or implicitly support this view have shown that increased time in the United States is linked to poor dietary habits, lack of exercise (e.g., Goel, McCarthy, Phillips, & Wee, 2004), and other risky health behaviors, such as smoking (e.g., Lopez-Gonzalez, Aravena, & Hummer, 2005). Other factors that have been suggested to lead to worsened health outcomes among the United States born and those who spend more time in the country are increased psychological threats such as discrimination (e.g., Viruell-Fuentes, 2007; Yoo, Gee, & Takeuchi, 2009), and environmental threats, such as on-the-job exposure to hazardous chemicals (e.g., Colt, Stallones, Cameron, Dosemeci, & Zahm, 2001; Cooper et al., 2001).

The third body of work suggests that group differences in health outcomes can be explained using the statistical phenomenon of regression to the mean (Jasso et al., 2004). This reason departs from the others in its premises though the findings are similar. Regression to the mean suggests that the effects of positive health selection wither away with the elapsing of time, leading to the seeming “health depletion” effects for more time in the United States that studies have noted. Rigorous tests of this hypothesis with longitudinal data suggests that, controlling for other factors, in the short-term immigrant health deteriorates less than native born health (Jasso et al., 2004, p. 233). In the long term, however, the health of immigrants appears to even out, as it were, leading to similar health outcomes among members of both groups (Jasso et al., 2004). This seems to be true whether health selection is very positive (as it is with immigrants on employment visas) or less so as it is with those on family preference visas.

This body of work can be considered a critique of the currently prevalent view—largely based on cross-sectional studies—that immigrant health deteriorates with more time in the United States (or in any other country to which international movers travel). Instead, it suggests a more complex way in which time functions. This body of work is largely based on studies that use data from the New Immigrant Study (NIS), a national representative longitudinal dataset on new legal immigrants in the United States.

While acknowledging that environmental threats affect health, this body of work critiques simplified explanations that are implicitly premised on depictions of the United States as an environment that is pernicious to the health of immigrants. While it recognizes protective mechanisms in health, it refutes an over-emphasis on the protective influence that immersion in family and community networks have in contributing to the

differences between foreign born and natives. While it endorses the crucial role that time plays, it shifts the emphasis from how time in the United States affects the external (e.g. neighborhood of residence, proximity to family members, access to financial and educational resources) and internal (attitudes, values, and affective relationship to the United States society and their society of origin) conditions of immigrants' lives, to a more statistical interpretation of the effect that time plays in health outcomes for this group.

Studies using the NIS either alone or in tandem with other datasets have highlighted other findings that are important for investigators who use large-scale survey sample data for the study of immigrant health. First, they show that findings from self-report data provide different conclusions than prevalence rates of chronic health conditions. Self-reports show that immigrants are in worse health than native born, whereas when prevalence of chronic condition is assessed, the native born have higher rates. Since most survey data, especially those on mental health rely on the participant's self-report of his/her health, these types of data might over-estimate the prevalence of poor mental health.

Second, cross-sectional data are imperfect when it comes to disentangling across-cohort effects and the particular forces of a certain immigration year. These factors appear to be distal forces in the health of immigrants. However, when they are isolated with appropriate longitudinal data such as the NIS (Jasso et al., 2004), their effects are pronounced and suggest the need for more thorough investigation.

Third, because the United States is not the only country to which there is large-scale migration, more research is necessary that explores other countries and regions.

Studies of immigrant health in other countries is also necessary for rigorous tests of hypotheses on environmental effects (such as chronic discrimination) that are believed to affect health in particular ways in the United States. Unfortunately, few studies to date examine immigrant health in contexts other than the United States (for two exceptions, see Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2007; Noh, Kaspar, & Wickrama, 2007).

Fourth, migrants and their offspring are distinct from those who do not migrate from their home countries. One example of this is that health of immigrants is often better (in the case of migrants on employment visas) or worse (in the case of refugees and asylees) than the health of those who remain in their countries of origin. Studies of immigrant and ethnic minority health thus need to interpret research with these types of findings in mind; they need to consider the crucial role that immigrant/nonimmigrant status and ancestry play in health and other outcomes.

Unfortunately, a great deal of research has attempted to explain immigrant and ethnic group differences in health and other types of outcomes using what can be interpreted as a culturally relativist perspective. This perspective implicitly suggests that what is the most important in understanding the outcomes of immigrants and ethnic minorities is their region or country of origin.

When health differences between immigrants and native populations are found, for example, they look to the country or region from which the immigrants come, for answers about why the immigrant group has the outcomes it does. If the immigrant group has better health outcomes than the native group in the new country, for example, they suggest that the people in the country of origin have different ways of thinking, or special health behaviors, that benefit their population members who move.

They propose that the initial better health outcomes are due to an innate characteristic of the population in the immigrant's country of origin, and that these innate cultural and personal resources get eroded with increased exposure to another culture with different values and behavioral norms. However, the reviewed research suggests that migration is a crucial factor to be considered in trying to understand differences in immigrant and native population health outcomes.

This section reviewed the literature on international migration and health. It highlighted three main bodies of literature that attempt to explain differences in the health outcomes of foreign-born and native individuals. It also underscored the nascent stage of research on immigrant health. This is particularly the case for immigrant mental health. Because much of the research to date has focused on physical health outcomes and mortality, there is a vast lacuna in knowledge about the mental health of immigrants and ethnic minorities (Vega & Rumbaut, 1991). The uncertainty about the mental health status of these movers and the mechanisms influencing these statuses is one of the key impetuses for this dissertation project.

The Mental Health of Non-Hispanic Black Caribbeans in the United States

Research on the mental health of Black Caribbeans in the United States is in its nascent stages. The few existing studies have three main characteristics. First, they are comparative—not in depth—studies. Second, they focus on clinical—not subclinical—mental health. Third, they use convenience—not representative—samples.

The first notable characteristic of these studies on Black Caribbean mental health is that they are comparative. These comparative studies are insightful because they provide a snapshot of how Black Caribbeans fare in relation to other ethnic groups in the

United States (e.g., Jackson & Antonucci, 2005; Takeuchi et al., 2007; Williams, Haile et al., 2007). For example, cross-sectional studies that use indicators such as nativity, ancestry, and time in the United States, suggest that Black Caribbeans demonstrate the strongest effect of a so-called health depletion when compared with Asians and Latinos, with lifetime prevalence rates of psychiatric disorder being greatest among Black Caribbeans (Williams, 2008).

Comparative studies also highlight differences between Black Caribbeans and African Americans—its normative comparison group. For example one study showed that sex moderated and complicated ethnic group differences in the prevalence of psychiatric disorders (Williams, Haile et al., 2007). Using a national sample of Black Caribbeans, African Americans, and non-Hispanic Whites, the study found that Black Caribbean men had higher risks for psychiatric disorders within the past 12 months when compared to African American men. On the other hand, Black Caribbean women had lower odds for psychiatric disorders both in the past 12 months and throughout the lifetime (Williams, Haile et al., 2007).

This type of comparative research also highlights how within group heterogeneity varies or is similar among different ethnic groups. For example, the same study discussed above also showed that like that of many other immigrant and immigrant ancestry groups, Black Caribbeans' mental health seemingly worsens with more time in the United States (e.g., Williams, Haile et al., 2007). First generation Black Caribbeans (immigrants) were more likely to have lower rates of psychiatric disorders compared to second or third generation Black Caribbeans; the contrast most stark between first and third generation Black Caribbeans (Williams, Haile et al., 2007).

Comparative research on the mental health of Black Caribbeans is thus helpful because it clarifies how bad or good their mental health is in relation to other ethnic groups and specifies whether the same patterns that have been found for other ethnic groups applies to them. However, comparative research also obfuscates important within group differences in the life experiences, immigration experiences, and related mental health outcomes among Black Caribbeans that were presented earlier. These include visa entry categories and conditions, social and economic characteristics and factors related to country of origin.

For example, in a previous section, it was highlighted that when the majority of Black Caribbeans arrive, their kin have already been based in the United States for some time. As discussed earlier, this increases the likelihood of less positive health selection. It was also noted that a large proportion of Haitian immigrants enter the United States on refugee/aslyee visas. This is linked to negative health selection. Similarly, within any immigrant group, there is an increased likelihood that older immigrants exhibit negative health selection. However, these within group nuances of Black Caribbean mental health are veiled in comparative studies.

The second noteworthy characteristic of the studies on Black Caribbean mental health is that they focus on clinical mental health or psychiatric disorders (e.g., Williams, González et al., 2007; Williams, Haile et al., 2007). In the literature, there are two significant exceptions to this general trend. The first study examined how immigration factors contributed to within-group differences in life satisfaction and happiness, two indicators that are commonly used to assess psychological well-being (Jackson, Forsythe-Brown, & Govia, 2007). The second study explored depressive symptomology, looking

specifically at the factors that characterized low and high symptomology groups of Black Caribbeans and African Americans (Lincoln, Chatters, Taylor, & Jackson, 2007).

Both studies signaled the importance of immigration factors in understanding the subclinical mental health of Black Caribbeans. Because of the few existing studies on non-clinical mental health, it is difficult to hypothesize whether the same factors that predict this type of mental health in other populations also affects Black Caribbeans. Within such a fast-increasing population, it is quite likely that a significant proportion of individuals might be experiencing mental health problems that do not cross the threshold to reach the level of disorders. The extent to which this is true and to which other predictive models of health are generalizable to Black Caribbeans remains largely unexamined.

The third characteristic of the research on Black Caribbbean mental health is that the majority of studies use convenience samples of late adolescent college students. Although providing data that is not generalizable to the broader non-Hispanic Black Caribbean group in the United States, such studies nonetheless suggest areas worthy of deeper examination in more representative samples.

One of the main factors that convenience-sample studies suggest future research can explore is sex differences in health profiles and post-migration trajectories. For example, a study based on a college-aged sample on the northeast coast, suggested that although the impact of personal problems increased the depressive symptoms of both young men and young women, the association with other key variables was different for men and women (Livingston, Neita, Riviere, & Livingston, 2007). For young women, physical health problems increased in tandem with mental health problems. For young

men, more group affiliations and increased loneliness were associated with less depressive symptoms. These patterns suggest that women and men in these groups may have different mechanisms impacting their mental health, or that the intensity of mechanisms may be different for women versus men. Unfortunately, these studies with samples that are not representative of the wider Black Caribbean population in the United States fail to provide relevant information for the large proportion of middle aged and older Black Caribbean adults.

Although the existing studies on Black Caribbean mental health have definite benefits, they also suggest that further research is needed. Comparative studies fail to highlight the nuances of the Black Caribbean experience. The studies tend to focus on clinical levels of poor mental health. And the convenience samples on which most of the studies are based limit the generalizability of findings. The few studies on non-Hispanic Black Caribbean subclinical mental health thus suggest an area of study in dire need of further research. In addition, it is unclear whether and how traditional models of the predictors of mental health generalize to non-Hispanic Black Caribbeans. Certain factors have been touted as protective and vulnerability factors in the mental health of other more studied immigrant and immigrant ancestry populations must be examined for non-Hispanic Black Caribbeans.

Overview of Three Empirical Studies

The goal of this dissertation is to investigate multiple vulnerability and protective factors involved in the mental health of non-Hispanic Black Caribbeans in the United States. In exploring vulnerability and protective factors, the dissertation is mainly concerned with moderation effects. This is because both vulnerability and protective

factors operate via moderation effects (Holmbeck, 1997; Holmbeck et al., 2008; Rose et al., 2004). With respect to the mental health of Black Caribbeans, vulnerability factors are moderators that increase the likelihood of distress in the presence of adversity. Protective factors are moderators that reduce the likelihood of distress in similar conditions.

Vulnerability and protective factors contrast with risk and resource/promotive factors. Risk and resource factors function in additive capacities (Holmbeck et al., 2008; Rose et al., 2004). The dissertation studies also examine risk and promotive factors. These are factors that have effects on distress regardless of the presence or absence of a stressor (Holmbeck et al., 2008).

In a series of three studies, I examine mental health within the context of these vulnerability and protective mechanisms. More specifically, I ask: To what extent is discrimination associated with the mental health of non-Hispanic Black Caribbeans in the United States and how is this relationship moderated by racial and ethnic identity? Do personal control and social support function as mediating or moderating mechanisms in the association between discrimination and mental health? How do the family relations of non-Hispanic Black Caribbeans impact their mental health? How is this association different or similar for women and men? By considering multiple factors that have been highlighted as vulnerability and protective factors in the study of the mental health of other ethnic minority groups in the United States, I hope to illuminate the extent to which these processes are similar or different for non-Hispanic Black Caribbeans.

Study 1, lays the foundation for the project by examining the role of a vulnerability and protective factor simultaneously in the mental health of of non-Hispanic

Black Caribbeans in the United States. Although there has been a clear link between discrimination and mental health, there have been no clear examinations of the extent to which these findings generalize to non-Hispanic Black Caribbeans. I explore the associations between discrimination perceptions and psychological distress and how closeness to ethnic group and closeness to racial group, two distinct factors in the lives of Black immigrants, might moderate these associations. Furthermore, I explore how these associations might differ according to specific immigration factors. I expect that discrimination will increase psychological distress, that closeness to both ethnic and racial group will moderate these associations, and that these associations will be stronger for the United States born, those who have resided in the United States for a longer period, and those who arrived in the United States during their formative years.

Study 2 furthers the study of vulnerability and protective factors by investigating the mechanisms via which discrimination is associated with mental health. The study examines the stress process model among non-Hispanic Black Caribbeans. It tests moderation and mediation models of the role of third variables in the associations between discrimination perceptions and distress. Considered as important elements in the stress process, the study explores whether personal control and social support function as mediators or moderators in the aforementioned associations. Moderation models predict that the effect of discrimination on distress will be different depending upon the levels of control and support. Mediation models predict that discrimination affects these variables and that these variables in turn increase or decrease distress.

Study 3 delves deeper into the study of social relations and mental health. Specifically, Study 3 examines non-Hispanic Black Caribbeans' positive and negative

perceptions of their intergenerational relationships and whether sex and multiple roles function as vulnerability or protective factors in these associations. Non-Hispanic Black Caribbeans reported on their relationships with parents and adult children and their psychological distress. I expect that sex and multiple roles will act as both vulnerability and protective factors.

Table 1.1 Ancestries for U.S. Blacks with Caribbean Ancestry, 2005-2007

Caribbean Ancestry	U.S. Native	Foreign Born	Total	Percent of total Caribbean ancestry	Percent of total U.S. population N=298,757,310
Jamaican	343,425	552,348	895,773	34.57	.300
Haitian	298,257	458,952	757,209	29.22	.253
West Indian	143,166	133,553	276,719	10.68	.093
Guyanese	57,478	145,281	202,759	7.83	.068
Trinidadian and Tobagoian	56,317	117,100	173,413	6.69	.058
British West Indian	29,176	61,008	90,184	3.48	.030
Dutch West Indian	57,719	2,259	59,978	2.31	.020
Barbadian	20,910	33,445	54,355	2.10	.018
Belizean	18,688	25,826	44,514	1.72	.015
Bahamian	20,411	15,836	36,247	1.40	.012
Total Caribbean ancestry categories	1,045,547	1,545,608	2,591,151	NA	.867

Source: 2005-2007 American Community Survey (ACS) 3-Year Estimates, S0201 Selected Population Profile in the United States, tables for ancestries listed above.

Table 1.2 Nonimmigrant Admissions (I-94 only) by Category of Admission and Non-Hispanic Caribbean Country of Citizenship, Fiscal Year 2007

Country of Citizenship	Tourist and Business Travelers	Student and Exchange Visitors	Temporary Workers and Families	Diplomats and other Representatives	All Other Classes	Unknown	Total
Bahamas	346, 326	8, 036	1, 043	1, 311	553	11, 418	368, 687
Jamaica	245, 685	10, 193	27, 184	1, 569	6, 990	1, 800	293, 421
Trinidad and Tobago	155, 291	5, 315	4, 332	1, 416	4, 011	815	171, 180
Haiti	94, 247	1, 237	1, 384	713	2, 792	903	101, 276
Barbados	58, 277	972	1, 082	929	321	526	62, 107
Belize	24, 257	784	508	525	909	148	27, 131
Guyana	22, 695	388	475	545	1, 080	282	25, 465
Antigua & Barbuda	21, 841	446	197	363	48	142	23, 037
Saint Lucia	18, 036	733	198	301	472	151	19, 891
Saint Kitts and Nevis	14, 624	524	136	261	48	127	15, 720
Saint Vincent and the Grenadines	11, 298	274	82	194	2, 722	70	14, 640
Grenada	10, 222	397	235	176	443	40	11, 513
Suriname	5, 175	159	122	261	229	220	6, 166
Dominica	4, 662	272	99	71	180	38	5, 322
Total	1, 032, 636	29, 730	37, 077	8, 635	20, 798	16, 680	1, 145, 556
Percent of total	90.14	2.60	3.24	0.74	1.82	1.46	100

Notes: Data for Aruba and the Netherlands-Antilles islands are not available because these countries are subsumed under the Netherlands, as they are Dutch territories. Similarly, data for French Guiana, Guadeloupe, and Martinique are not available because they are subsumed under France, as they are French territories. These data are flow data, as contrasted to stock data. Flow data are not counts of unique individuals like stock data are. Instead, they are counts of events.

Source: Department of Homeland Security (DHS), Yearbook of Immigration Statistics: 2007, Temporary Admissions (Nonimmigrants) Supplemental Table 1.

Table 1.3 Leading Caribbean Countries for Persons Obtaining LPR Status by Broad Class of Admission and Non-Hispanic Caribbean Country of Birth, 2007

Country of Birth	Family-Sponsored Preferences	Employment-Based Preferences	Immediate Relatives of U.S. Citizens	Diversity	Refugees and Asylees	Other ^a	Total
Haiti	8, 028	102	13, 569	- ^b	6, 261	2, 445	30, 405
Jamaica	4, 988	732	13, 602	D ^c	D	41	19, 375
Trinidad & Tobago	1, 477	590	4, 659	57	17	29	6, 829
Guyana	2, 868	241	2, 577	5	32	3	5, 726
Belize	262	60	738	3	5	5	1, 073
St. Lucia	167	D	702	D	-	1	928
Grenada	165	D	524	D	D	-	751
Bahamas	72	54	582	6	5	19	738
Barbados	184	65	432	4	-	4	689
St. Vincent and the Grenadines	146	34	387	-	-	-	567
Dominica	93	4	331	-	-	-	428
Antigua-Barbuda	112	14	289	-	-	-	415
St. Kitts-Nevis	168	12	165	-	-	2	347
Suriname	52	21	108	D	D	4	197
Bermuda	7	16	84	-	-	1	108
Netherlands-Antilles	22	D	53	D	D	-	93
Montserrat	13	4	47	-	-	2	66
Aruba	9	D	38	D	-	-	55
British Virgin Islands	D	D	27	D	-	-	40
Cayman Islands	7	3	30	-	-	-	40
Total	18, 840	1, 952	38, 944	75	6, 320	2, 556	68, 870
Percent of total	27.36	2.83	56.55	0.11	9.18	3.71	100

Notes:

^a According to the Department of Homeland Security's Annual Flow report for 2008 (Jeffreys & Monger, 2008), briefing on U.S. Legalized Permanent Residents, the categories subsumed under the label "Other" combined usually account for less than 10 percent of the annual LPR flow. Persons in this category are usually foreign nationals admitted under special legislation.

^b Indicates that data are withheld to limit disclosure.

Table 1.4 Selected Social Characteristics of Foreign-Born Non-Hispanic U.S. Black Caribbeans by Country of Birth, 2005-2007

	Total U.S. Population N = 298,757,310	Bahamas n = 28, 756	Barbados n = 53, 027	Belize n = 45, 102	Dominica n = 36, 059	Grenada n = 29, 603	Guyana n = 250, 878	Haiti n = 504, 750	Jamaica n = 612, 567	St. Vincent n = 20, 276	Trinidad Tobago n = 221, 893	Other Carib. ^a n = 45, 035
	%	%	%	%	%	%	%	%	%	%	%	%
Female	50.8	53.9	54.9	56.0	58.5	60.1	53.4	51.9	56.0	59.1	56.9	56.7
Age												
Under 18	24.7	7.6	2.9	6.8	8.7	4.8	6.2	8.5	5.6	5.1	5.0	2.5
18-34	23.3	41.6	16.6	27.6	26.2	26.9	23.8	27.0	25.0	25.2	27.1	19.0
35-64	39.7	43.0	63.8	52.6	54.6	55.1	59.3	54.4	56.3	56.6	58.4	60.9
65 and over	12.5	7.7	16.8	13.0	10.5	13.3	10.7	10.1	13.1	13.2	9.4	17.5
Population in Household	N = 290,655,225	n = 27, 169	n = 51, 728	n = 43, 691	n = 35, 688	n = 29, 030	n = 248, 050	n = 497, 440	n = 596, 558	n = 19, 923	n = 216, 962	n = 44, 447
Hhlder or spse	57.5	68.7	70.5	66.1	63.1	68.6	62.3	59.6	66.7	67.0	67.8	72.1
Child	30.4	16.9	11.1	15.4	16.2	12.7	18.0	15.5	14.3	11.8	15.4	10.7
Other relatives	6.6	7.5	13.0	13.3	15.6	13.9	16.3	18.3	12.5	15.5	11.0	11.8
Nonrelatives	5.4	6.9	5.4	5.2	5.1	4.9	3.5	6.7	6.5	5.7	5.7	5.4
Unmar. par.	2.1	2.0	2.1	2.3	2.0	1.6	1.5	2.3	2.2	3.1	2.1	2.3
Marital Status ^b	N = 237,984,051	n = 27, 391	n = 52, 111	n = 42, 780	n = 34, 147	n = 28, 734	n = 241, 301	n = 476, 013	n = 592, 349	n = 19, 749	n = 215, 177	n = 44, 394
Now marr (except sep)	50.5	43.9	43.8	47.0	44.9	46.2	54.9	49.6	45.0	40.6	47.8	46.1
Widowed	6.4	4.9	6.0	4.7	5.5	4.5	5.8	4.9	5.4	5.7	4.1	7.9
Divorced	10.5	9.4	12.2	11.2	10.1	9.4	8.2	8.3	11.4	10.0	12.0	11.4
Separated	2.2	4.5	7.2	5.7	6.7	5.7	4.9	5.2	5.4	7.3	5.4	5.8
Never married	30.4	37.3	30.9	31.3	32.7	34.2	26.2	32.0	32.8	36.4	30.7	28.8
Language at Home ^c	N = 278,276,723	n = 28, 598	n = 52, 924	n = 44, 929	n = 35, 908	n = 29, 535	n = 250, 143	n = 501, 700	n = 610, 156	n = 20, 230	n = 221, 390	n = 44, 999
English only	80.5	75.6	96.2	63.5	30.3	97.2	94.9	8.0	92.8	96.1	94.5	87.9
Lan other than Eng	19.5	24.4	3.8	36.5	69.7	2.8	5.1	92.0	7.2	3.9	5.5	12.1
Sp Eng less than "very well"	8.6	3.4	0.9	7.9	42.2	0.8	1.7	50.9	1.6	1.5	1.2	3.6
Naturalized U.S. Citizen	N = 15,628,659	n = 12, 287	n = 34, 471	n = 22, 867	n = 16, 527	n = 17, 695	n = 163, 219	n = 237, 286	n = 353, 146	n = 11, 915	n = 116, 769	n = 30, 177
Male	46.6	44.5	44.3	42.2	40.7	38.7	44.8	47.4	40.8	39.6	41.3	43.4
Female	53.4	55.5	55.7	57.8	59.3	61.3	55.2	52.6	59.2	60.4	58.7	56.6
Not a U.S. Citizen	N = 21,606,126	n = 16, 469	n = 18, 556	n = 22, 235	n = 19, 532	n = 11, 908	n = 87, 659	n = 267, 464	n = 259, 421	n = 8, 361	n = 105, 124	n = 14, 858
Male	53.0	47.3	46.4	45.9	42.2	41.6	49.9	48.8	48.3	42.8	45.1	43.1
Female	47.0	52.7	53.6	54.1	57.8	58.4	50.1	51.2	51.7	57.2	54.9	56.9
Entered 2000	25.4	18.0	9.1	17.7	21.0	18.5	17.2	22.7	17.0	13.5	15.9	10.6

Entered 1990 to 1999	30.3	26.9	20.2	20.0	34.8	24.2	29.3	30.4	26.9	29.6	30.5	16.8
Entered before 1990	44.3	55.1	70.7	62.2	44.2	57.3	53.5	46.8	56.2	56.9	53.6	72.6

Notes: ^a Other Caribbean countries include: Anguilla, Antigua and Barbuda, British Virgin Islands, Cayman Islands, Guadeloupe, Martinique, Montserrat, the Netherlands-Antilles, St. Barthelemy, St. Kitts-Nevis, St. Lucia, Turks and Caicos Islands. French Guiana and Suriname from the census classified South America grouping are also not included because they also do not reach the census threshold. They have not been individually identified because the foreign born population from these countries do not reach above the threshold that the Census Bureau deems sufficient to merit a specialized country population profile.

^b Marital status is limited to the subpopulation of those who are fifteen years and over.

^c Language spoken at home is limited to the subpopulation of those who are five years and over.

Source: 2005-2007 American Community Survey 3-Year Estimates, S0201 Selected Population Profiles in the United States, Tables for the countries listed above.

Table 1.5 Selected Economic Characteristics of Foreign-Born Non-Hispanic U.S. Black Caribbeans by Country of Birth, 2005-2007

	Total U.S. Population <i>N</i> = 298,757,310	Bahamas <i>n</i> = 28, 756	Barbados <i>n</i> = 53, 027	Belize <i>n</i> = 45, 102	Dominica <i>n</i> = 36, 059	Grenada <i>n</i> = 29, 603	Guyana <i>n</i> = 250, 878	Haiti <i>n</i> = 504, 750	Jamaica <i>n</i> = 612, 567	St. Vincent <i>n</i> = 20, 276	Trinidad Tobago <i>n</i> = 221, 893	Other Carib. ^a <i>n</i> = 45, 035
	%	%	%	%	%	%	%	%	%	%	%	%
Educational Attainment ^b	<i>N</i> = 195,646,383	<i>n</i> = 22, 526	<i>n</i> = 48, 340	<i>n</i> = 37, 953	<i>n</i> = 29, 205	<i>n</i> = 25, 572	<i>n</i> = 215, 917	<i>n</i> = 418, 894	<i>n</i> = 525, 894	<i>n</i> = 17, 990	<i>n</i> = 187, 182	<i>n</i> = 42, 012
Less than high school diploma	16.0	14.6	15.9	20.5	35.8	18.0	21.6	25.9	20.3	20.0	14.5	15.3
High sch. grad (incl. equiv)	30.0	26.6	38.3	28.6	29.7	35.2	36.0	30.7	32.7	37.3	34.3	38.3
Some coll. or assoc.'s deg.	27.0	30.4	24.9	35.2	18.8	26.4	22.8	26.6	26.1	21.7	28.2	23.2
Bachelor's degree	17.1	18.9	13.7	10.8	10.7	12.6	13.7	11.8	13.5	13.8	15.3	14.6
Graduate or profess. degree	9.9	9.5	7.3	4.9	5.0	7.8	6.0	5.0	7.4	7.2	7.7	8.6
Employment Status ^c	<i>N</i> = 233,658,279	<i>n</i> = 27, 135	<i>n</i> = 51, 933	<i>n</i> = 42, 533	<i>n</i> = 33, 629	<i>n</i> = 28, 621	<i>n</i> = 23, 574	<i>n</i> = 471, 242	<i>n</i> = 588, 295	<i>n</i> = 19, 589	<i>n</i> = 214, 090	<i>n</i> = 44, 246
In labor force	64.7	69.9	70.7	66.1	67.0	71.0	71.3	73.3	73.3	70.1	70.9	69.4
Civilian l. f.	64.2	69.7	70.1	65.2	66.7	70.5	71.1	73.1	72.9	69.3	70.4	68.6
Employed	60	63.2	64.2	59.5	60.4	64.9	65.9	67.1	67.3	63.7	64.6	64.0
Unemployed	4.2	6.6	5.9	5.7	6.3	5.6	5.2	6.1	5.6	5.6	5.9	4.5
Armed forces	0.4	0.2	0.6	0.9	0.2	0.5	0.2	0.2	0.3	0.8	0.4	0.8
Not in labor force	35.3	30.1	29.3	33.9	33.0	29.0	28.7	26.7	26.7	29.9	29.1	30.6
Occupation ^d	<i>N</i> = 140,148,744	<i>n</i> = 17, 139	<i>n</i> = 33, 338	<i>n</i> = 25, 327	<i>n</i> = 20, 323	<i>n</i> = 18, 561	<i>n</i> = 157, 971	<i>n</i> = 316, 037	<i>n</i> = 395, 913	<i>n</i> = 12, 475	<i>n</i> = 138, 206	<i>n</i> = 28, 332
Management, professional	34.1	32.2	31.4	27.0	19.2	31.5	26.7	20.9	30.3	28.3	31.4	31.4
Service	16.6	24.7	26.2	23.5	30.3	27.4	22.7	39.4	28.0	28.2	23.2	27.2
Sales and office	25.8	25.8	23.9	25.6	21.6	24.1	28.8	17.7	22.3	22.5	26.3	22.6
Farming, fishing, forestry	0.7	0.1	0.0	0.5	0.3	0.0	0.1	0.5	0.2	0.0	0.0	0.5
Construction, extraction, maintenance and repair	9.8	8.0	7.7	11.7	9.2	11.8	10.1	5.6	9.1	14.3	9.7	9.2
Production, transportation, and moving	12.9	9.2	10.7	11.6	19.5	5.3	11.6	15.9	10.1	6.7	9.4	9.2
Class of worker ^e	<i>N</i> = 140,148,744	<i>n</i> = 17, 139	<i>n</i> = 33, 338	<i>n</i> = 25, 327	<i>n</i> = 20, 323	<i>n</i> = 18, 561	<i>n</i> = 157, 971	<i>n</i> = 316, 037	<i>n</i> = 395, 913	<i>n</i> = 12, 475	<i>n</i> = 138, 206	<i>n</i> = 28, 332

Private wage and salary	78.5	77.5	79.6	77.5	83.6	75.7	80.2	85.1	79.9	76.9	78.2	73.4
Government	14.5	17.7	17.4	15.2	11.1	16.7	14.9	11.6	14.6	17.5	15.9	20.5
Self-employed in own busin.	6.8	4.5	3.0	7.1	5.3	7.6	4.8	3.3	5.5	5.6	5.8	5.9
Unpd fam wkrs	0.2	0.3	0.0	0.2	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.2
Median hhold income^f	<i>N</i> = 111,609,629	<i>n</i> = 12, 559	<i>n</i> = 26, 420	<i>n</i> = 20, 263	<i>n</i> = 15, 856	<i>n</i> = 14, 209	<i>n</i> = 100, 694	<i>n</i> = 202, 949	<i>n</i> = 285, 353	<i>n</i> = 9, 705	<i>n</i> = 101, 024	<i>n</i> = 22, 703
	50, 007	38, 575	48, 189	42, 777	31, 218	47, 319	54, 280	42, 686	47, 801	43, 327	47, 911	50, 008

Notes:

^a Other Caribbean countries include: Anguilla, Antigua and Barbuda, British Virgin Islands, Cayman Islands, Guadeloupe, Martinique, Montserrat, the Netherlands-Antilles, St. Barthelemy, St. Kitts-Nevis, St. Lucia, Turks and Caicos Islands. French Guiana and Suriname from the census classified South America grouping are also not included because they also do not reach the census threshold. They have not been individually identified because the foreign born population from these countries do not reach above the threshold that the Census Bureau deems sufficient to merit a specialized country population profile.

^b Educational Attainment is asked of the twenty-five and older population.

^c Employment Status is limited to the population of persons sixteen years of age and older.

^d Occupation is limited to the civilian employed population of persons sixteen years of age and older.

^e Class of Worker is similarly limited to the civilian employed population of persons sixteen years of age and older.

^f Median Household Income is data gathered from the income in the past twelve months, using 2007 inflation-adjusted dollars.

Source: 2005-2007 American Community Survey 3-Year Estimates, S0201 Selected Population Profiles in the United States, Tables for the countries listed above.

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CHAPTER TWO

DISCRIMINATION AND DISTRESS: THE INFLUENCE OF IMMIGRATION FACTORS AND GROUP IDENTIFICATION AMONG NON-HISPANIC BLACK CARIBBEANS IN THE UNITED STATES

Abstract

Although discrimination's pernicious impact on mental health has been established among disadvantaged status groups in the United States, including certain ethnic minorities, there is limited research focused on its associations in other ethnic minority groups, and even less on how identity might moderate the relationship between discrimination and mental health among these groups. Using the first nationally representative sample of Black Caribbeans in the United States, this study examines discrimination and psychological distress in 1,368 non-Hispanic Black Caribbeans. In a series of multiple linear regression models, the study evaluates the association between discrimination perceptions and psychological distress, how closeness to the ethnic group and closeness to the racial group moderate the association, and whether those associations vary when the sample is stratified by immigration factors. As expected, discrimination perceptions were related to increased psychological distress, independent of other factors. Analyses suggested that group closeness exacerbated the impact of both severe and subtle discrimination on distress for United States natives. Similar results were obtained for those who had spent ten or fewer years in the United States.

Literature Review

There have been several calls to include discrimination perceptions as an integral part of ethnic health disparities research (Williams & Mohammed, 2009). In spite of the well-established nature of research on the relationship between discrimination and adverse health outcomes thanks to studies focused on African Americans, Asians and Latinos, there have been much fewer investigations of these relationships with other ethnic groups, especially Black immigrant and immigrant ancestry groups. Although research emphasizes the theoretical importance of including immigrants in the burgeoning field of studies on ethnic minorities and mental health (Vega & Rumbaut, 1991), to date there have been few population based studies that focus on the mental health of immigrants.

The present study addresses this gap in the literature by examining discrimination's impact on the mental health of one of the fastest growing Black ethnic populations in the United States: non-Hispanic Caribbean. West Indians and Haitians are two Caribbean groups that disproportionately migrate to the United States. Unfortunately prior studies on the health of Caribbeans in the United States have not explored how the vast linguistic, cultural, and historical differences within this heterogeneous population might impact mental health. The present study begins to attend to this issue by focusing on how both the common experiences shared by non-Hispanic Black Caribbeans in the United States, as well as their within group differences that can alter the relationship between discrimination and mental health.

Discrimination and Health among Immigrants and their Descendants in the United States

There is now a large body of research demonstrating a strong association between discrimination and poor health outcomes, especially mental health outcomes (for reviews

that highlight this, see, Krieger, 2000; Mays, Cochran, & Barnes, 2007; Paradies, 2006; Williams & Mohammed, 2009; Williams, Neighbors, & Jackson, 2003). Longitudinal studies in this area suggest that the direction of the effect is that discrimination impacts health, and not vice versa (Brody et al., 2006; Jackson et al., 1996; Pavalko, Mossakowski, & Hamilton, 2003; Schulz et al., 2006). These studies suggest that it is those who are in minority status positions that tend to experience the most detrimental relationships between discrimination and health, particularly racial and ethnic minorities (George & Lynch, 2003; Meyer, Schwartz, & Frost, 2008; Thoits, 1995; Turner & Avison, 2003).

It is no surprise then that a large proportion of these studies have focused mostly on African Americans, a group that has experienced a history of unfair treatment in the United States. Indeed, several of these studies highlight the high prevalence rates of perceived discrimination that exist among African Americans and their association with both physical and mental health (e.g., Kessler, Mickelson, & Williams, 1999; Seaton, Caldwell, Sellers, & Jackson, 2008). These studies have also delineated specific mechanisms (e.g. socio-economic disadvantage) via which discrimination exerts its unfortunate impact on the health of African Americans. Given the very specific historical conditions that influence the discrimination that African Americans face, these studies are, however, limited in terms of their generalizability to other ethnic minority groups.

Nevertheless, there have been a few studies on discrimination and health among other ethnic groups and immigrants in North America. Probably because of their large proportions, these studies tend to focus on Asians (in Canada and the United States) and Latinos (in the United States). Similar to the comparatively larger body of research on

African Americans, in addition to highlighting the negative impact that discrimination has on mental health, they also examine the mechanisms through which this occurs. A Canada-based study, for example, highlighted that discrimination exerts moderate to strong effects among Southeast Asian (Chinese, Vietnamese, and Laotian) refugees (Noh, Beiser, Kaspar, Hou, & Rummens, 1999). Another Canada-based study found that subtle bias increased feelings of exclusion, powerlessness, shame and discouragement, which in turn impacted the positive affect and depressive symptoms of a sample of 180 Korean adults in Toronto (Noh, Kaspar, & Wickrama, 2007).

Research in the United States also indicates that discrimination has a deleterious effect on mental health for Latinos (Araújo & Borrell, 2006). Because these studies are often categorized as dealing with adaptation in the United States, they are often subsumed and hidden under the rubric of acculturation studies. Yet, a closer look at these studies finds that they illustrate similar patterns of discrimination's impact on mental health. In studies based in large cities, for example, researchers have found that experiences of discrimination, including racial and ethnic discrimination were associated with increased depressive symptoms (Salgado de Snyder, 1987), poorer overall health (Stuber, Galea, Ahern, Blaney, & Fuller, 2003), and more stress (Araújo, 2004) among Latinos.

Although there has also been a great deal of research on African Americans, largely neglected are the large Black immigrant and immigrant ancestry groups, among which non-Hispanic Black Caribbeans comprise a substantial portion. The few studies that do exist on discrimination and mental health among Black Caribbeans suggest a similarity in the detrimental impact of discrimination on mental health. Because these studies tend to compare Black Caribbeans with African Americans in the spirit of

highlighting the within group heterogeneity of Blacks in the United States, they often also clarify group differences between African Americans and Black Caribbeans. For example, there is a propensity for males in youth of both groups to perceive more discrimination than their female counterparts (Caldwell, Guthrie, & Jackson, 2006; Seaton et al., 2008), and the foreign born tend to present fewer symptoms of depression than do those born in the United States (Lincoln, Chatters, Taylor, & Jackson, 2007). In addition, they highlight the similarities that impact their mental health, such as higher socio-economic status and more supportive relationships with family members (Lincoln et al., 2007). Unfortunately, there have been few studies that examine how the heterogeneity within of non-Hispanic Black Caribbeans the Black population in the United States and the information that is lost by neglecting this diversity when examining health outcomes (Read & Emerson, 2005; Read, Emerson, & Tarlov, 2005).

Identity and its Relationship with Racial/Ethnic Discrimination and Mental Health

There are two competing theories that make predictions about how group identification is supposed to moderate the impact of unfair treatment targeted toward the individual as a member of the group and health outcomes. Social identity theory is the first of these (Brown, 2000; Hornsey, 2008; McGarty, 2001). According to social identity theory, if an identity is important to a group member, s/he attempts to focus on the positive aspects of that group identity to maintain self-esteem and a positive self-image. The theory predicts that individuals who are high in their group identity experience it as a resource that buffers them against the deleterious effects of assaults targeted toward them as members of their group. Rejection sensitivity theory (Pietrzak, Downey, & Ayduk, 2005; Romero-Canyas & Downey, 2005) is the second. According to this theory, identity

specific rejection or disregard, in respect to a valued or salient identity status, leaves the individual vulnerable to poor outcomes (health, academic and so on) by heightening their sense of disconnection from others and depleting their psychological resources. Empirical literature that will be reviewed below finds support for the former theory, the latter theory, for both, and for neither.

One of the main frameworks used to examine identity as a buffer in the relationship between unfair treatment and health outcomes, is the social stress process framework (Pearlin, Menaghan, Lieberman, & Mullan, 1981; Thoits, 1994, 1995). The framework suggests that variability in health responses to both acute and chronic stressors emerges from differential exposure to these stressors as well as different levels of access to and use of coping resources. The studies that use this approach to examining group identification as a buffer (e.g., Mossakowski, 2003), conceptualize group identification as an individual level coping strategy for dealing with interpersonal discrimination. This strategy is assumed to be useful both in situations in which the identity-related maltreatment is likely to be an ongoing stressor and in those in which this treatment acts as a life event challenge.

This buffering effect has been examined in a handful of studies looking at ethnic and racial identification and its protective role in the relationship between racial and/or ethnic discrimination and mental health (Brondolo, ver Halen, Pencille, Beatty, & Contrada, 2009). In a regional probability sample of Filipino Americans in San Francisco, California and Honolulu, Hawaii, ethnic identity salience was found to buffer the impact of a dichotomously coded yes/no indicator of ever having been treated unfairly because of race or ethnicity over the lifetime on depressive symptoms over the

past 30 days (Mossakowski, 2003). In this study, ethnic identity was measured by Phinney's Multigroup Ethnic Identity Measure (Phinney, 1992). An 11-item scale that appeared to assess ethnic identity salience was derived after a factor analysis with varimax rotation. However, the author indicated that higher scores on the scale were indicative of stronger commitment to the ethnic group. It seems then that one or the other of these dimensions of ethnic identity influenced the impact of a blatant instance of discrimination that could easily be recalled from a lifetime timeframe on depressive symptoms. However which of these dimensions had an effect is still unclear.

Studies on African Americans attempt to address this lack of clarity in exactly which dimension of ethnic identity might lessen discrimination's negative impact on mental health. One study of African American freshmen students at three predominantly White universities, found that a nationalist ideology (Sellers, Smith, Shelton, Rowley, & Chavous, 1998), or the extent to which African Americans emphasize the uniqueness of being African American, and low public regard (Sellers et al., 1998), or believing that other groups perceive African Americans negatively, buffered the burden on symptoms of anxiety and depression that was placed by interpersonal instances of subtle and severe discrimination due to race in the past year (Sellers & Shelton, 2003). This buffering role of low public regard was also found in another study of African American adolescents (Sellers, Copeland-Linder, Martin, & Lewis, 2006). It seems to imply that encountering behavior that is consistent with a world view in which African Americans are treated badly might not be as psychologically taxing as trying to make sense of discriminatory behavior when their world view suggests that others think positively of them (Sellers et al., 2006; Sellers & Shelton, 2003). A similar mechanism has been proposed for the

protective role of low racial identity centrality among African American adolescents and young adults (Sellers et al., 2006). Low, as opposed to high identity centrality, prevents the individual from feeling a more acute sense of attack and assault to self-worth when confronted with racially based discriminatory treatment. Another study of African American college students used a scale assessing racial socialization. The extent to which respondents were socialized with messages about dealing with the difficulties of racism in United States and overcoming those barriers (racial socialization experiences) was found to protect against the harmful effect of frequent experiences of racist events on psychological distress over the past month. However, the extent to which they endorsed sensitization and socialization (racial socialization beliefs) had no effect (Fischer & Shaw, 1999). These studies provide greater clarification about what exactly it is about group identification that can be protective for ethnic minorities. The disadvantage of these studies, however, is in their focus on identification among late adolescents/young adults—a population for which identity issues are likely to be largely in flux.

In short then, there has been some, albeit limited, empirical support for this perspective of identity as a coping resource in dealing with discrimination's impact on mental health. Although there has been further evidence of identity as a coping resource in dealing with discrimination on account of race, ethnicity, or ancestry, there tends to be more support for identity's protective qualities in domains other than health outcomes (such as education). On the other hand, some studies also suggest that identity can add to, instead of help alleviate, the negative impact that discrimination has on health.

In a quasi-experimental study of Asian American college students, high ethnic identity was related to lower positive affect when imagining incidents of racial

discrimination, while low ethnic identity was related to higher positive affect in the same situations (Yoo & Lee, 2008). In this study ethnic identity was again assessed using Phinney's Multigroup Ethnic Identity Measure (Phinney, 1992). After finding three subscales, the authors used the mean item total from two of the subscales that were most highly correlated—the ethnic identity cognitive clarity dimension and the ethnic identity affective pride dimension (Yoo & Lee, 2008). The former assesses the individual's clarity and self-understanding about belonging to his/her ethnic group and the latter is similar to what has been referred to as private regard (Sellers et al., 1998), or the individual's positive feelings toward his/her group. The strong relationships found between high ethnic identity and decreased positive affect when faced with multiple incidents of racial discrimination was quite pronounced for the United States born participants in this study, suggesting that there may be generational differences in the harmful impact that ethnic identity might play for minorities (Yoo & Lee, 2008).

These findings on the negative impact that group identification can play in the relationship between discrimination and mental health have been replicated in an investigation of a group of immigrants with unique discrimination and identity issues. In a study of Southeast Asian refugees in Canada, for example, ethnic identity intensified the association between discrimination and depression. In this study, ethnic identity was measured by using the total score from a scale with items that seemed to assess identity centrality (e.g. my ethnicity is of central importance in my life), and ideology (e.g. how important do you feel it is for children to maintain their mother tongue?). This total score was used in a way that suggested a bidimensional view of identity, with higher scores indicating more "ethnic identity", specifically, more Chinese, as opposed to

Canadian or Chinese-Canadian identity. In dealing with identity in these either/or terms, it is difficult to determine whether it was identification with the new majority culture that failed to buffer the association between discrimination and distress, whether it was identification with the culture from which the refugees were coming, or whether it was some combination of both. This need for to distinguish clearly in the reference groups will be discussed in more detail in the following section. In addition, the study used a single item measure of discrimination. The authors point out that this is a serious limitation in their study of refugees—a population that faces unique stresses of fleeing from persecution and safety. With such as population, they advise, the subtle forms in which these immigrants may be discriminated against would be a more suitable measure. Although these critiques call the study's findings into question, the negative impact of identity on the relationship between discrimination and mental health has been found in other studies.

In addition, some studies have found that identity both buffers and exacerbates the impact of discrimination on health. In an investigation of its moderating role, a population-based study on Asian adults in America found that closeness to their ethnic group buffered the relationship between perceptions of racial and ethnic discrimination and psychological distress for United States natives between 41 to 50 years of age but that it exacerbated the association for United States natives between 31 to 40 years old and those between 51 to 75 years of age (Yip, Gee, & Takeuchi, 2008). Similarly, the study of Asian refugees in Canada mentioned earlier also found that the exacerbating role of ethnic identity was conditioned upon whether the refugees used a passive or emotion-focused coping strategy referred to as forbearance coping when faced with

discrimination. Specifically, those who used forbearance coping were most likely to reap the benefits of ethnic identity as a buffer (Noh et al., 1999).

Finally, there have been some studies that show no moderator effect of identity at all. In these studies, identity has only a direct relationship with distress. A study on Asian American college students found no moderating role for identification with their heritage culture in the association between perceived stress and depression (Hwang & Ting, 2008). Another study on Asian adults in America found no moderating effect of closeness to ethnic group on the relationship between ethnic and racial discrimination and psychological distress for immigrants (Yip et al., 2008). There were also null findings in the study discussed previously on the role of ethnic identity with Filipino Americans in San Francisco and Honolulu. When discrimination was assessed with a scale assessing chronic or everyday discrimination, the buffering effects that were found for ethnic identity's role in the one item yes/no indicator of ever having perceived unfair treatment ceased to exist (Mossakowski, 2003). The researcher explained this as an example of the tendency for chronic discrimination to deplete health resources, when compared to acute or life-event instances of discrimination (Williams, 1999; Williams, Yu, Jackson, & Anderson, 1997).

The studies discussed above paint a picture of conflicting findings in the role that group identification plays in the impact that the discrimination that ethnic minorities and immigrants face have on their mental health. What might these mixed findings be due to? It is quite possible that for ethnic minorities, especially immigrants and their descendants, group identification is a complex, multi-faceted issue that can be either protective or harmful, and in some cases, for some groups, can be both simultaneously. The following

section examines this possibility in more detail. It explores the role of ethnic identity and racial identity as distinct constructs in the lives of Black immigrants such as non-Hispanic Black Caribbeans, and subsequently as distinct moderators of the impact of discrimination on distress. Using Black Caribbeans and their group identification issues, it shows how hypotheses of the moderating impact of group identification are often complicated by the conflation of racial and ethnic identity.

Are Racial and Ethnic Group Identification the Same in the Lives of Ethnic Minorities?

In addition to the lack of clarification about which dimensions of racial and ethnic identity act as moderators of discrimination's impact on mental health, there is also often confusion about the reference group to which these questions allude. The distinctions in the reference groups that are used for racial and ethnic identification is an important facet of assessing the role of group identification as a protective or vulnerability factor in the health of immigrant populations faced with discrimination.

There is a large body of literature, aggregated under the topic of acculturation studies, which deals with these types of distinctions. A substantial number of these studies see identification as bi-dimensional and so pit identification with the new mainstream culture against identification with the heritage culture. This type of research often finds evidence in favor of the ethnic identity as a buffer and of identification with the new mainstream culture as an exacerbating force. A study of Asian American college students, for example, found that being less identified with United States mainstream culture was associated with higher psychological distress (Hwang & Ting, 2008). In addition, a large number of studies focused on both physical and mental health outcomes, find that increased identification with the United States mainstream culture—for which

immigrant status often stands as a proxy—which is termed “acculturation” is related to poorer health outcomes (Escobar, Hoyos Nervi, & Gara, 2000; Lee et al., 2006; Lopez-Gonzalez, Aravena, & Hummer, 2005; Salgado de Snyder, 1987). Although there have been repeated calls to clarify exactly what is meant by “acculturation” in the context of these health studies (e.g., Abraído-Lanza, Armbrister, Flórez, & Aguirre, 2006; Hunt, Schneider, & Comer, 2004), there have been few empirical attempts to answer them. Yet an increasing body of research suggests that sundry group identifications, and different dimensions of each of those, might be operational in the health outcomes of immigrants and those with immigrant ancestry. Often orthogonal dimensions, they include, but are not limited to, identification with the United States mainstream culture or popular culture, identification with their immigrant or immigrant ancestry group, identification with the ethnic group that is the majority in the communities in which they reside, and identification with ethnic minorities with which they feel a sense of common fate. Physical, social, and temporal features of the experiences of unfair treatment and the group identification coping it elicits, thus likely depend on a *mélange* of group identifications (Brondolo et al., 2009).

Two main group identifications that are likely to be conflated in studies of Black immigrant populations are ethnic identification and racial identification. Perhaps because Blackness is viewed as a master status (the group status which is most prominent and thus supercedes others in the determination of position in society) (Hughes, 1945) of Black immigrants in the United States, the ways in which their ethnic identification may be similar to or different from their racial identification is virtually unstudied (for two exceptions focused on Black Caribbeans, see: Govia & Jackson, under revision; Hall &

Carter, 2006). Yet increasing evidence supports the distinguishing of ethnic identification from racial identification. This evidence often appears as findings on ethnic sub-group differences in studies with large subpopulations of Latinos from various countries of origin and of Asians from various countries of origin.

There has been some speculation in qualitative research that for Caribbean immigrants, and especially for the second-generation descendants of Black Caribbean immigrants in the United States, Caribbean identification is a distinct type of identification from Black identification (Butterfield, 2004a, 2004b; Foner, 1998; Kasinitz, Battle, & Miyares, 2001; Kasinitz, Mollenkopf, Waters, & Holdaway, 2008; Waters, 1994, 1999). However, with the exception of one study of which we are aware (Govia & Jackson, under revision), there has been no exploration of the differential effects that these distinct group identifications might have on health outcomes.

Unfortunately, this lack of distinguishing between the importance of racial identity and ethnic identity obscures important ways in which group identification might buffer or exacerbate the impact of discrimination on health. For Black Caribbean immigrants and those of immigrant ancestry from these groups, several factors likely influence perceptions of discrimination. The association with their minority status in the United States and the types of strains that they experience associated with such status is intricately related to their health, as it is for other ethnic minority group members in the United States (George & Lynch, 2003). This context of the United States is a crucial factor in the group identification of Black Caribbeans. It is largely assumed that different types of identity are stable in terms of their centrality (Sellers et al., 1998). However, the movement from one context in which a specific identity was developed, such as the

Caribbean in the case of this group, to another context can encourage dual, if not multiple, equally significant group identifications. The continuous sense in which the “new” identification is salient has the potential for making it as central as the “previous” identification. This is likely the case for Black Caribbeans. For immigrants from this group, Blackness was probably a taken-for-granted aspect of their identity. However, once in the context of the United States, its salience becomes constantly heightened. In addition, with more time in this context and the likelihood of establishing a life in the United States, new group attachments may develop that become equally, if not more important than ones previously held.

A large body of qualitative anthropological and sociological work and limited quantitative psychological research, based especially in New York, supports these hypotheses about the nature of group identifications in this population. This research has explored the fluidity of ethnic identifications and the changes in ethnic identifications in different generations of Black Caribbeans (Bashi Bobb, 2001; Bashi, 2007; Butterfield, 2004a, 2004b; Deaux, 2006; Foner, 1998; Henke, 2001; Kasinitz et al., 2008; Waters, 1994, 1999; Wiley, Perkins, & Deaux, 2008). Coming from countries in which the majority of the population is of African descent and moving into neighborhoods that are mostly populated with other Caribbean immigrants, the centrality of their “Caribbean-ness” or being from the countries from which they or their ancestors originate is for many, a crucial group identity. This is especially the case for Haitians, for example. Their strong attachment to other Haitians and the country of Haiti and their tendency to live in cities and towns mostly in which Haitians have a strong numerical presence and are active in the local government are often intimately connected (Kretsedemas, 2004). At

the same time, the ethnic communities in the United States into which most Black Caribbeans become incorporated are largely African American (Logan, 2007). In addition, having to leave these majority-Black neighborhoods and enter into majority White spaces for work and educational pursuits, as in the case of most West Indians, brings with it the attendant awareness of racial discrimination (Kasinitz, 2001; Kasinitz et al., 2001).

All of the above indicates that studies that ask about racial group identification without specifying which racial others the questions refer to (i.e. native United States Blacks without Caribbean ancestry versus native United States Blacks and foreign born Blacks in the United States with Caribbean ancestry), often obfuscate, rather than clarify, how ethnic identity can impact both discrimination perceptions and health outcomes for this group. In addition, studies that focus on ethnic identity as changes in native language use, although they capture some of the heterogeneity of non-Hispanic Black Caribbeans from the Dutch and French/Creole speaking Caribbean, fail to examine the heterogeneity within English-speaking Black Caribbeans and their likely group identifications.

Immigration Factors and The Associations Among Discrimination, Identity, and Distress

More and more research is pointing to the possibility that immigration factors, such as length of time resident in the United States, nativity, and other factors, might be proxies for exposure to discrimination, and not, for the catch all phrase, acculturation. Declines in health outcomes from immigrant generations to their descendants' to the next are well documented. For example, one recent study using national representative data on Asians highlighted that immigrants who arrived at an earlier developmental stage (that is, after age 25) had worse mental health outcomes, in spite of their educational and income

gains at the time of the survey, compared to those who arrived at later developmental stages (Leu et al., 2008). These studies highlight the importance of immigration factors, including nativity, age at migration, and factors related to the contexts of reception that these Black immigrants face (for example, residence in a city in which there is a majority of other Black immigrants). They show how the relationship between discrimination and health might be different depending on those circumstances (Read & Emerson, 2005; Read et al., 2005).

Nativity and Length of Time Resident In the United States

Biopsychosocial models of health stress that the longer a person is exposed to a chronic stressor, the more potent should be the impact of the stressor on health outcomes, with potent effects for discriminations based on social statuses such as race or ethnicity (Clark, Anderson, Clark, & Williams, 1999). Accordingly, with stressors such as perceived discrimination in which the longer time exposed to prejudice directed to one's group members is related to increased group vigilance, length of time resident in the new migration context has been found to moderate the association between discrimination and health. One of the main findings in studies to date is that the association between discrimination and health is greater for United States natives and immigrants with longer periods of residency (Gee, Ryan, Laflamme, & Holt, 2006), probably because length of residence also reflects length of exposure to discrimination. In fact, studies suggest that the decline in health outcomes that have been noted among immigrants and their descendants and which has been attributed to being acculturated to the United States, might be more accurately construed as "the increased socioemotional burden of racial discrimination from one generation to the next" (Leu et al., 2008).

Specifically, research on Asians in the United States highlights that those born in the United States are more likely to report experiencing discrimination compared to their counterparts born outside of the United States (Kuo, 1995). A study of Asians in California found that less time in the United States was associated with the least discrimination perceptions. Specifically, there was moderate support for the hypothesis that a longer period of residence in the United States was associated with more discrimination perceptions for each of the Asian groups sampled, although the findings only reached levels of statistical significance with the Chinese ($n=997$) and Filipino ($n=560$) subgroups (Gee & Ponce, 2008). Similar patterns were found in a study of Mexicans in the United States, with rates of discrimination being higher among those who spent a greater portion of their lives in the United States (Finch, Kolody, & Vega, 2000).

Yet, there is also a growing body of conflicting findings that suggest the opposite pattern: less time in the United States being associated with greater discrimination perceptions. Similar results were also obtained in another national representative study of Asians in the United States, with discrimination perceptions being greater among those who were born internationally compared to those born in the United States (Yip et al., 2008). In one study using a nationally representative telephone interviewed sample of adults 18 and older in the United States, reporting of discrimination decreased by the number of years resident in the United States, with reports being most common among most recent immigrants, followed by less-recent immigrants, and then by United States born Asians (Yoo, Gee, & Takeuchi, 2009).

Advocates of the first hypothesis, that more time in the United States is associated with increased discrimination perceptions, suggest that the mechanism involves exposure to discrimination. In attempting to explain this type of pattern, attention has been focused on the shorter “exposure period” to discrimination that immigrants face when compared to United States natives (Gee, Ryan et al., 2006). Qualitative interviews of different generations of Mexican women in Michigan, for example, highlight that second generation Mexicans, experienced a more pervasive and cumulative exposure to “othering” than did their immigrant predecessors (Viruell-Fuentes, 2007). Qualitative research on Black Caribbeans in areas in which they are highly concentrated, such as Florida and New York, also point to the higher levels of discrimination that the second generation report when compare to their immigrant parents (Kasinitz, 1992; Kasinitz et al., 2008; Waters, 1994, 1999).

Developmental Context (Age at Immigration to the United States)

Key to the issue of perceptions of discrimination is the developmental context of the immigrant in the United States. The age at which the person arrives in the United States is highly related to what becomes their reference group identification, their patterns of socialization and their exposure to the customs, practices, and assumptions implicit in living in another country (Rumbaut, 2004, 2005). In addition, there is a relationship between the age at which immigrants move to a new country and their health outcomes. In essence, research has found that migration at earlier ages, ages below 25, provide different developmental contexts than those of adults who migrate at older ages (Leu et al., 2008; Rumbaut, 2004). In one study, age at immigration moderated the association between subjective social status and mood dysfunction, such that among

those who arrived in the United States in later adult years, there was an association between subjective social status and mood dysfunction, whereas among those who arrived in the United States during formative years (i.e., childhood, adolescence, early adulthood), there was no association between subjective social status and mood dysfunction (Leu et al., 2008). Relying on psychological research that suggests that it is around age 25 that social and cognitive development reaches full maturation (e.g., Giedd, 2004; Gogtay et al., 2004), this study compared those who immigrated at 25 and younger, and those who immigrated after they were 26 years old or older. This treatment of age at immigration as a categorical rather than a continuous variable served to underscore the hypotheses about developmental context, a practice in line with prior research on generations and immigrant and immigrant descent health (Rumbaut, 2004; Takeuchi, Hong, Gile, & Alegria, 2007).

Old adulthood is another developmental context that has been shown to impact the health of immigrants and their descendants. Recent theoretical work suggests that the extent of health selectivity is different for younger versus older persons who immigrate after retirement age. The latter may have more interest in the better health care available in the United States. They may also have poorer health outcomes in comparison to their younger counterparts. For older migrants who migrated at older ages, the positive health selection effect that is noted for younger immigrants is thus likely reversed (Jasso, Massey, Rosenzweig, & Smith, 2004). Theoretical work also highlights that adult immigrants are on average much younger than the native born and health is strongly related to age (Jasso et al., 2004). Unfortunately, there has been little, if any research that

examines how immigrating at this late developmental stage might impact the association between discrimination and health outcomes.

The Current Study

Using the first-ever national representative sample of Black Caribbean adults resident in the United States, the present study first examines the association between everyday experiences of unfair treatment (discrimination) and psychological distress among non-Hispanic Black Caribbeans. Second, it investigates whether, and how, immigrant and immigrant ancestry factors modify the association between discrimination and distress. Third, it explores whether and how closeness to racial group and closeness to ethnic group modifies the association.

First, the study explores the association between discrimination perceptions and psychological distress, independent of immigration and sociodemographic factors. It is expected that across the sample, discrimination will be associated with increased distress.

Second, the study examines whether and how immigrant and immigrant ancestry factors impact the association between discrimination and distress. For nativity, it is expected that, compared to immigrants, those born in United States will exhibit a stronger association between discrimination and distress because being raised in the United States has likely included experiences that sensitize them to being discriminated against. Furthermore, among immigrants, it is anticipated that those who have spent more time resident in the United States will demonstrate a stronger association between discrimination and distress. Immigrants who arrive in the United States at a later developmental phase (mid- to late-adults) are expected to demonstrate a stronger association between discrimination and distress, as compared to those who became

residents of the country at an earlier stage. Although no firm hypotheses are proposed in terms of possible ethnic sub-group differences, qualitative research suggests that certain factors reviewed earlier can lead to the possibility that the relationship between discrimination and distress is stronger for West Indians (e.g. more presence in contexts in which they are likely to be discriminated against), while other research suggests that the relationship may be stronger for Haitians (as they may have higher base levels of distress and depression because of the challenging contexts they flee to arrive in the United States).

Third, the current study examines how closeness to ethnic group and closeness to racial group influence the association between discrimination and distress. It is expected that the association between discrimination and distress will be less strong for those with a greater sense of closeness to Blacks in the United States compared to those who do not feel as close to them. On the other hand, it is hypothesized that the relationship between discrimination and distress will be aggravated by closeness to ethnic group, such that the association between discrimination and distress will be stronger for those who feel closer to Blacks from the Caribbean, compared to those who do not feel as close to Blacks from the Caribbean. When analyses are conducted according by immigration factors, these effects are expected to be most visible among United States natives (versus immigrants), among those who have resided in the United States for more than 10 years (versus those who have resided for fewer than ten), and among those who arrived in the United States in early adulthood or earlier (versus those who arrived when they were twenty-five or older). Exploratory analyses of ethnic sub-group differences in the moderating roles of closeness to ethnic and racial group are also conducted.

The study examines the extent to which discrimination is associated with psychological distress among non-Hispanic Black Caribbeans, whether closeness to ethnic and racial group modifies this association, and whether these relationships among discrimination, identity and psychological distress are different once certain immigration factors are not confounded.

A summary of the main hypotheses follows:

H1: Discrimination will be associated with increased distress among non-Hispanic Black Caribbeans, independent of sociodemographic and immigration related factors.

H2a: Closeness to ethnic group will moderate the impact of discrimination on distress for non-Hispanic Black Caribbeans, such that increased perceptions of discrimination will be associated with more psychological distress among those who feel closer to Blacks from the Caribbean, while there will be a weaker relationship between discrimination and distress for those who do not feel as close to Blacks from the Caribbean.

H2b: Closeness to racial group will moderate the impact of discrimination on distress for non-Hispanic Black Caribbean, such that increased perceptions of discrimination will be associated with more psychological distress among those who do not feel as close to Blacks in the United States, while increased perceptions of discrimination will be associated with more psychological distress among those who feel closer to Blacks in the United States.

H3: The interaction effects noted above for closeness to ethnic group and closeness to racial group will be stronger for a) United States natives (versus

immigrants); b) those who have resided in the United States for more than 10 years (versus those who have resided for fewer than ten); and c) among those who arrived in the United States in early adulthood or earlier (versus those who arrived when they were twenty-five or older).

Methods

Sample

The data come from the Black Caribbean respondents in the National Survey of American Life (hereafter referred to as the NSAL), a household survey conducted between 2001 and 2003, the largest study of the mental health of Blacks in the United States conducted to date (Jackson et al., 2004). The NSAL is the first national sample of individuals from different race and ethnic groups who live in the same geographical areas as African Americans. The total NSAL sample included 1, 621 Black Caribbeans, 3, 570 African Americans, and 891 non-Hispanic Whites. The main sampling frame selected African American and White samples in proportion to the African American population. This is referred to as the Core Sample Frame. The African American sample is a national representative sample of households located in the 48 coterminous states with at least one Black adult age 18 or older who did not identify ancestral ties to the Caribbean (Heeringa, Torres, Sweetman, & Baser, 2006; Sweetman, Baser, Faison, Rafferty, & Torres, 2006). The NSAL White sample is a stratified, disproportionate (as the density of African Americans in a block group increased, the rate of selection of Whites in that group also increased) sample of adults living in United States tracts and blocks that have at least a 10 percent African American population. The NSAL White sample represents

14 percent of the total United States White population (Heeringa et al., 2006; Sweetman et al., 2006).

Respondents were considered Black Caribbean if they self-identified as Black and answered affirmatively to any of the following three questions: (1) Are you of West Indian or Caribbean descent? (2) Are you from a Caribbean-area country, or (3) Do you have parents or grandparents who were born in a Caribbean-area country. The NSAL is unlike other samples of Black Caribbeans that have focused either exclusively on New York or Florida because of its maximization of the number of Black Caribbeans across the country. The NSAL sampling procedure for the Black Caribbeans consisted of two distinct components: (1) respondents from the core sampling frame, in which respondents were recruited with a multi-stage stratified area probability design ($n = 265$); and (2) respondents from high-density sampling, in which United States census block groups were oversampled where Blacks of Caribbean descent represented at least 10 percent of households ($n = 1356$). The NSAL Black Caribbean sample is a national representative sample of that population (Heeringa et al., 2006; Sweetman et al., 2006). Analyses (see Table 2.1) suggest that the weighted demographic characteristics of the Black Caribbean component of the NSAL are concordant with the 2005-2007 American Community Survey.

This study uses the non-Hispanic Black Caribbean subgroup ($n = 1,396$) from the Black Caribbean sample. Respondents were Black Caribbean adults ranging in age from 18 to 94. The current study focuses on the non-Hispanic Black Caribbeans in the sample, specifically on those from the English-speaking Caribbean, otherwise known as West Indians ($n = 1098$) and Haitians ($n = 298$). Those from the Dutch-speaking Caribbean,

and other French/Creole speaking respondents (namely respondents from French Guiana, Guadeloupe, Martinique, and Montserrat) were not included and nor were they collapsed with the above sub-groups mainly for theoretical reasons suggested in the literature review, and also for practical reasons because of their small sample sizes (total $n = 9$; Dutch-speaking $n = 13$).

Procedure

Interviews were conducted using computer assisted software and administered by trained interviewers with racial backgrounds similar to those of the respondents. Interviews were conducted in English. The average length of the Black Caribbean interview was 2 hours 43 minutes, 23 minutes longer than the average interview length for African Americans, and one hour longer than the average interview length for the non-Hispanic Whites (Jackson et al., 2004). Although there was a high refusal rate among the Black Caribbeans, their response rate was 77.7 percent, 5.4 percent more than the overall response rate (Jackson et al., 2004). Respondents were compensated for their participation.

Measures

Psychological Distress

The Kessler Psychological Distress Scale (K6) (Furukawa, Kessler, Slade, & Andrews, 2003; Kessler et al., 2002; Veldhuizen, Cairney, Kurdyak, & Streiner, 2007) measured distress. The K6 has been successfully used as a screening instrument for the diagnosis for more serious mental illnesses (Furukawa et al., 2003; Kessler et al., 2002; Veldhuizen et al., 2007). This 6-item inventory assesses the prevalence of negative

feelings in the past 30 days (e.g., “how often did you feel...so sad nothing could cheer you up?, ...nervous?, ...restless or fidgety?, ...hopeless?, ...that everything was an effort?, ...worthless?”). Respondents reported frequency on a 5-point scale (5 = *none of the time*, 4 = *a little of the time*, 3 = *some of the time*, 2 = *most of the time*, and 1 = *all of the time*). Responses were reverse coded so that higher scores indicated more frequent symptoms of psychological distress. As in other studies that have used the items (e.g., Kessler et al., 1999), exploratory principal components factor analyses found only one meaningful dimension among the items, with factor loadings ranging between .55 and .80 and an eigenvalue of 3.09. To score the K6, the points were added together yielding a possible total of 0 to 30 points (range = 6 to 28; Cronbach’s $\alpha = .77$). A threshold of 13 or more is used to define serious mental illness. Because this variable was positively skewed, (skewness = 1.91 (.00), kurtosis = 8.42 (.00), it was log transformed (range = 1.79 to 3.33, $M = 2.14$, $SD = .35$). Results are, however, interpreted using the exponent of the log expressed as a percent.

Chronic Discrimination

The Everyday Discrimination Scale (Williams et al., 1997), measured chronic discrimination. This self-report scale assesses chronic or routine experiences of unfair treatment that have occurred in the past year. It is a subtle measure of perceived discrimination that does not prime the respondent to think about race, which eliminates cues to prejudice prior to responding to the questions. The 10-item measure assesses the frequency of interpersonal mistreatments experienced in the respondent’s day-to-day life. The stem question is, “In your day-to-day life, how often have any of the following things happened to you?” The ten items are: a) You are treated with less courtesy than

other people; b) You are treated with less respect than other people; c) You receive poorer service than other people at restaurants or stores; d) People act as if they think you are not smart; e) People act as if they are afraid of you; f) People act as if they think you are dishonest; g) People act as if they're better than you are; h) You are called names or insulted; i) You are threatened or harassed; and j) You are followed around in stores. Respondents reported frequency on a 6-point scale (6 = never, 5 = *less than once a year*, 4 = *a few times a year*, 3 = *a few times a month*, 2 = *at least once a week*, and 1 = *almost everyday*). Responses were reverse coded so that higher scores indicated more frequent experience of interpersonal mistreatment.

Exploratory factor analyses were conducted on this measure for two main reasons. First, this measure has been used as both a unidimensional scale (Gee, Spencer, Chen, & Takeuchi, 2007; Kessler et al., 1999; Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005; Williams et al., 1997), and as a two factor scale (Gyll, Matthews, & Bromberger, 2001). Second, the scale is used in the present study with an adult ethnic group (non-Hispanic Black Caribbeans) on which it has not been normed nor used in published research. A principal components factor analysis of the ten items with varimax rotation detected two factors with eigenvalues greater than one. Similar to a previous study using the scale, the factor loading patterns suggested that one factor dealt with instances of more subtle and covert types of interpersonal mistreatment (treated with less courtesy, treated with less respect, receive poorer service, people act as if they think you're not smart, people act as if they're better) (eigenvalue = 5.08; factor loadings = 0.64 – 0.84). The other dealt with more blatant or severe forms of interpersonal mistreatment (people act as if they're afraid, people act as if they think you're dishonest, called names or

insulted, threatened or harassed, followed around in stores) (eigenvalue = 1.04; factor loadings = 0.51 – 0.83). When the items on each factor were combined to form two scales, the five-item severe mistreatment scale demonstrated very good internal consistency (Cronbach's $\alpha = .85$), and the five-item subtle mistreatment scale showed good internal consistency (Cronbach's $\alpha = .79$). Scale scores for the two types of mistreatment were computed by summing the five items in each sub-scales and then dividing that total by five.

The present study uses the sub-scales as continuous variables with mostly normal distributions. In Stata, the kurtosis of a normally distributed random variable is 3 and the skewness of a similarly distributed variable is zero. The subtle discrimination sub-scale has skewness of .66 (.00) and kurtosis of 3.34 (.02). The severe discrimination sub-scale has skewness of 1.07 (.00) and kurtosis of 4.41 (.00). This follows the traditional approach to using the unidimensional scale as a continuous variable (e.g., Kessler et al., 1999; Krieger et al., 2005; Williams et al., 1997), and recently also using the two-dimensional version as continuous level scales also (e.g., Gyll et al., 2001).

A single attribution item at the end of the measure assessed the perceived reason for the experience of unfair treatment, with possible responses being: 1) your ancestry or national origins; 2) your gender; 3) your race; 4) your age; 5) your height or weight; 6) your shade of skin color; and 7) Other (specify). The question was asked only of respondents who reported unfair treatment a few times a year or more frequently ($n = 1061$). Among those who provided responses for this question ($n = 1009$), the majority of respondents who reported unfair treatment attributed the experiences to race (weighted proportion = 66.08 percent, $n = 661$), with the next most endorsed attributions being to

the miscellaneous category of “other” (weighted proportion = 12.79 percent, $n = 129$) and to “shade of skin color” (weighted proportion = 10.63 percent, $n = 110$). Because of the tendency for ethnic minorities such as African Americans to report significantly more unfair treatment when compared to Whites (Deitch et al., 2003), and because recent studies that have used this measure tend not to incorporate the attribution item in assessing the effects of unfair treatment on health as these reasons are not significantly associated with health conditions above and beyond the level of everyday discrimination (e.g., Chae et al., 2008; Gee et al., 2007; Schulz et al., 2006), the present study’s analyses focused only on everyday discrimination.

Closeness to Ethnic Group

A single item, “How close do you feel in your ideas and feelings about things, to Black people from the Caribbean, like people from Jamaica, Bermuda or Haiti?” measured closeness to ethnic group. Response options were 1 = very close, 2 = fairly close, 3 = not too close, and 4 = not close at all. Responses were reverse coded so that higher scores indicated feeling closer to ethnic group.

Closeness to Racial Group

A single item, “How close do you feel in your ideas and feelings about things, to Black people in this country?” measured closeness to racial group. Response options were 1 = very close, 2 = fairly close, 3 = not too close, and 4 = not close at all. Responses were reverse coded so that higher scores indicated feeling closer to racial group.

Nativity Status

This was coded 1 for immigrants and 0 for those born in the United States.

Non-Hispanic Black Caribbean Subgroup

This was coded 1 for Haitians and 0 for West Indians.

Age at Immigration

To examine the hypotheses related to the impact of age at immigration to the United States as a moderator of the association between discrimination and distress, the originally continuous variable representing age at immigration was recoded as a categorical variable in which 1 = 25 and under, 2 = 26 to 50, and 3 = older than 50. However, due to the small sample size for those who immigrated to the United States when they were 50 years or older ($n = 45$), the second and third categories were collapsed (i.e., 0 = 25 and under; 1 = older than 25).

Length of Time Resident in the United States

Similar to the previous variable, to examine the hypotheses related to the impact of length of time resident in the United States as a moderator of the associations among discrimination, group identification, and distress, the originally continuous variable representing residency length was recoded. It was dichotomized at 10, so that 0 = 0-10 years and 1 = more than 10 years resident in the United States.

Demographic and Control Variables

Socioeconomic status.

Prior research suggests important links between socioeconomic status and reports of discrimination and distress and also in differences in reports of chronic stress (e.g., Hayward, Crimmins, Miles, & Yang, 2000). It is thus important to include this variable

as a covariate. The indicator used as a proxy for socio-economic status was household income. Household income was a continuous variable that was imputed for cases with missing data.

Sex.

Although studies on African Americans (Banks, Kohn-Wood, & Spencer, 2006) have suggested that there are no sex differences in depression, other significant findings in the literature provide a rationale for including sex as a demographic covariate in the following analyses on this yet studied immigrant population. First, studies suggest that women report more health problems than men whereas men report more discrimination than women. Second, as with other places, women and men migrate from the Caribbean to the United States at different rates (Pessar, 2005; UN-INSTRAW, 2006). Gender was coded 0=male and 1=female.

Age.

Age has been shown to be associated with discrimination perceptions and health outcomes, as well as with the association between discrimination and health outcomes (Yip et al., 2008). As such, age, used as a continuous variable, was included as a control variable.

Region of residence.

Experiences of discrimination vary with region of residence. In addition, Black Caribbeans from different linguistic groups tend to cluster in the North and South regions of the United States. At differential rates, with Haitians being the most numerous group in the South (Florida) and Jamaicans being the most numerous in the North (New York).

Because of these residential patterns, as well as for practical reasons of small sample sizes in the West ($n = 13$) and Mid-West ($n = 9$), dummy variables for northeast and south were created. For the northeast dummy variable, West and Midwest were collapsed with the South category to create an “All others” region. For the South dummy variable, West and Midwest were similarly collapsed with the Northeast category.

Analyses

Missing data.

Forty-six respondents were missing data on one or more items measuring unfair treatment. In these cases, the weighted sample mean for the specific item used to substitute for the missing values. Twelve respondents who were missing data on the one-item indicator of closeness to ethnic group or closeness to racial group were excluded from the analyses. In addition, respondents who were missing values on variables with near complete data (i.e. nativity = 1 respondent) were excluded from the analyses. Missing values for household income were imputed. Age at immigration to the United States and time resident in the United States were missing data for the same 27 respondents. These cases were thus dropped from the analyses. Using these techniques, a total of 40 respondents (2.87%) were excluded by listwise deletion. This is a technique considered acceptable when data are missing fewer than five percent of all respondents (Roth, 1994). Participants excluded from analyses were not significantly different from the entire sample on sociodemographic characteristics, the main predictors, or distress. The final sample on which the following analyses were based was thus reduced slightly to 1356.

Other data preparation.

All continuous predictor measures (subtle discrimination, severe discrimination, closeness to ethnic group and closeness to racial group) were mean-centered (that is, each continuous variable was subtracted by the overall sample mean of that variable; thus the intercept represented the predicted psychological distress for the “average” person in the sample). This reduces multicollinearity and facilitates the interpretation of the intercept (Aiken & West, 1991).

Analyses took sample design effects into account by using the *svy* commands of Stata SE 10.1, which allows for estimation of standard errors in the presence of stratification and clustering. Actual numbers are reported for sample sizes, while weighted data are used in the analyses. Weighted and unweighted means and proportions with accompanying estimates of standard errors are shown in Table 2.2.

Focal analyses.

Following this, multiple linear regression was used to adjust for covariates. The main effects of discrimination were tested independently to examine the first hypothesis—that self-reported discrimination would be positively associated with psychological distress. To evaluate hypothesis 2a and 2b—that closeness to ethnic group and closeness to racial group would moderate the association between discrimination and distress for the complete sample of non-Hispanic Black Caribbeans—the interaction between closeness to ethnic group and discrimination and the interaction between closeness to racial group and distress were tested. For the hypotheses related to the possible differences in the models according to different immigration factors (hypotheses 3a through 3c), the interaction between closeness to ethnic group and closeness to racial

group and discrimination were tested by stratifying the sample by non-Hispanic Black Caribbean sub-group, nativity, age at immigration to the United States, and years resident in the United States.

Where significant interactions were found between closeness to ethnic group and closeness to racial group and discrimination to influence distress, the simple main effects, or the effect of each of the discrimination predictor on the distress outcome, conditioned on the fact that it interacted with the identity moderators, were then examined. These interactions were examined using regression after mean centering the variables. High versus low closeness to ethnic and racial group were plotted to examine whether it moderated the significant associations found between discrimination and distress. As indicated previously, this was done for the entire sample together as well as separately for each of the immigration factor moderators (ethnic sub-group, nativity, age at immigration, years resident in the United States). Simple slopes and graphs were used to clarify significant interactions (Aiken & West, 1991).

Results

Analyses began with simple bivariate weighted correlations between study subtle discrimination, severe discrimination, closeness to ethnic group, closeness to racial group, and distress for the overall sample (Table 2.3). There was a significant correlation between both discrimination subscales. Subtle and severe discrimination were correlated with distress, such that more subtle discrimination was associated with more distress and more severe discrimination was also associated with more distress and between both types of discrimination psychological distress. Similarly, there was a significant

correlation between the two types of group closeness such that more closeness to ethnic group was associated with more closeness to racial group.

Differences in terms of nativity, stage of arrival in the United States, years resident in the United States, and non-Hispanic Black Caribbean subgroup were examined in the main study variables using t-tests. Specifically, differences were explored in the means for the key variables (distress, subtle discrimination, severe discrimination, closeness to ethnic group, and closeness to racial group) by non-Hispanic Black Caribbean sub-group, nativity, length of time resident in the United States, and developmental stage of arrival in the United States (Table 2.4). Findings revealed no differences in reports of psychological distress by non-Hispanic Black Caribbean sub-group, nativity, or years resident in the United States. There was, however, a significant association between age at immigration to the United States and distress, such that those who arrived in the United States at 25 or younger reported significantly more distress than those who were older than 25 years old when they arrived in the United States. There were also no differences in reports of subtle discrimination between West Indians and Haitians, nor between those who had lived in the United States for ten or fewer years versus those who had resided for a longer time.

There were, however, significant differences in reports of subtle discrimination according to nativity and age at immigration to the United States. Specifically, reports of subtle discrimination were higher among those born in the United States and among those who arrived in the United States when they were 25 or younger. There were similar findings for reports of severe discrimination. In addition, reports of severe discrimination were significantly higher among West Indians as opposed to Haitians. Although there

were no differences in reports of closeness to ethnic group according to non-Hispanic Black Caribbean sub-group, nativity, or age at immigration to the United States, there were differences according to years resident in the United States. Specifically, those resident 10 or fewer years reported feeling closer to Blacks from the Caribbean than those resident for more than 10 years.

Because two separate factors were found for the Everyday Discrimination Scale, multiple linear regressions were performed, using the entire sample, to ascertain whether the impact of either type of discrimination was more significant than the other. Table 2.5 shows the associations between subtle and severe discrimination with psychological distress. Model I shows that subtle discrimination was associated with increased psychological distress ($b = .09, SE = .03, p < .01$) after adjusting for covariates. Model II finds a similar result for severe discrimination ($b = .10, SE = .04, p < .05$). Model III includes both subtle and severe discrimination. Subtle discrimination ($b = .07, SE = .03, p < .05$) was still associated with increased distress. Severe discrimination was still in the expected direction, but was no longer statistically significant with the inclusion of subtle discrimination. Multi-parameter Wald tests of significance found that Model I provided the best fit for the data than the other models. This finding suggests that, for the total sample, the addition of severe discrimination did not improve the model fit for subtle discrimination.

Table 2.6 presents the results of analyses assessing hypotheses 2a and 2b. The table shows whether closeness to racial group and closeness to ethnic group moderated the association between discrimination and distress in different ways and their associations with both types of discrimination. Model I shows that closeness to ethnic

group had neither a main effect ($b = -.01, SE = .03, p > .05$) nor an interaction effect with subtle ($b = -.02, SE = .04, p > .05$) or severe discrimination ($b = -.04, SE = .03, p > .05$) after adjusting for covariates. Model II looks at closeness to racial group. Although the interaction effects between subtle and severe discrimination and closeness to racial group were not significant, there was a main effect for closeness to racial group ($b = -.04, SE = .02, p < .05$). Model III includes both closeness to ethnic group and closeness to racial group but finds only a main effect for closeness to racial group, with a similar R^2 as the model with closeness to racial group. Furthermore, although not significant, the direction of closeness to ethnic group's impact reverses once closeness to racial group is added to the model, with closeness to ethnic group increasing distress and closeness to racial group decreasing distress. Multi-parameter Wald tests of significance found that Model II provided the best fit for the data than the other models. This finding suggests that, for the total sample, the addition of the closeness to ethnic group main effect and its interactions with discrimination did not improve the model fit for closeness to racial group and its interactions.

Tables 2.7 through 2.10 present the results of analyses assessing hypotheses 3a through 3c and the results of the exploratory examinations stratifying the sample by non-Hispanic sub-group. Table 2.7 examines possible nativity status differences. For immigrants, only a main effect of subtle discrimination was observed, such that every unit increase in discrimination increased distress by 9.42 percent on average, holding other variables constant. For individuals born in the United States, however, main effects for severe discrimination and closeness to racial group, as well as interaction effects between subtle and severe discrimination and closeness to ethnic group, and subtle and

severe discrimination and closeness to racial group. Specifically, in terms of the main effects, every unit increase in severe discrimination increased distress by 6.18 percent on average whereas every unit increase in closeness to racial group decreased distress by 9.52 percent on average, holding other variables constant.

The interaction effects highlight both the buffering role and the exacerbating role that closeness to group can play in the relationship between discrimination and distress and that closeness to ethnic group plays in the relationship between subtle discrimination and distress. Specifically, among those born in the United States, distress tended to be higher at higher levels of severe discrimination both when closeness to the racial group was high ($b = .10, SE = .02, p < .001$), and when closeness to the racial group was low ($b = .08, SE = .02, p < .001$) (see Figure 2.1). Similarly, for the United States born, distress tended to be higher at higher levels of severe discrimination both when closeness to the ethnic group was high ($b = .08, SE = .03, p < .01$), and when closeness to the ethnic group was low ($b = .08, SE = .02, p < .001$) (see Figure 2.3). This pattern was also repeated for the United States born with subtle discrimination when closeness to the racial group was high ($b = .10, SE = .02, p < .001$), and when closeness to the racial group was low ($b = .08, SE = .01, p < .001$) (see Figure 2.4). However, only the slope for low closeness to the ethnic group was significant in examining subtle discrimination ($b = .08, SE = .01, p < .001$); the slope for high closeness to ethnic group was not significant ($b = .06, SE = .03, p < .09$) (see Figure 2.2).

Table 2.8 examines possible differences according to the developmental stage at which individuals immigrated to the United States. No main or interaction effects were observed among those who immigrated when they were twenty-five or younger.

Although no interaction effects were observed among those who immigrated when they were older than twenty-five, there were significant main effects for subtle discrimination, and closeness to ethnic group. Specifically, every unit increase in subtle discrimination increased distress by 16.18 percent on average and every unit increase in closeness to ethnic group also increased distress by 7.25 percent on average, holding other variables constant. A trend toward statistical significance was also observed for closeness to racial group, though in the opposite direction to the effect for closeness to ethnic group. Specifically, every unit increase in closeness to racial group decreased distress by 6.76 percent on average, controlling for other variables. Although the coefficients for the main effects of subtle discrimination, closeness to ethnic group and closeness to racial group differ slightly between the two groups, a Chow test of the equality of the coefficients indicated that the groups were statistically equivalent, suggesting no differences between the groups. Neither closeness to ethnic group nor closeness to racial group moderated the effects of subtle and severe discrimination on distress among those who arrived at twenty-five or younger nor among those who arrived when they were older than twenty-five.

Possible differences between those who have resided in the United States for a lengthy period versus those who have been residents for a shorter period are examined in Table 2.9. Among those who have lived in the United States for more than ten years, only main effects for subtle discrimination and both types of group closeness were observed. Subtle discrimination ($b = .06$, $SE = .02$, $p < .05$) and closeness to ethnic group both contribute to increases in distress ($b = .09$, $SE = .03$, $p < .05$), while closeness to racial group is associated with reductions in distress ($b = -.08$, $SE = .02$, $p < .01$). Those who

have resided in the United States for ten or fewer years demonstrated both main effects for subtle and severe discrimination and an interaction effect between subtle discrimination and closeness to racial group (see Figure 2.5). Specifically, every unit increase in subtle discrimination increased distress by 17.35 percent and every unit increase in severe discrimination increased distress by 10.52 percent, holding other variables constant. Distress tended to be higher at higher levels of subtle discrimination both when closeness to racial group was high ($b = -.10$, $SE = .02$, $p < .001$) and when closeness to racial group was low ($b = -.08$, $SE = .01$, $p < .001$).

Table 2.10 presents the results of exploratory analyses on possible non-Hispanic Black Caribbean ethnic sub-group differences. There were no interaction effects observed for either ethnic group. In addition, there were no main effects for West Indians. For Haitians, on the other hand, there was a significant main effect for subtle discrimination, such that every unit increase in subtle discrimination increased distress by 9.42 percent. For the Haitians, there were also effects that approached significance for both closeness to ethnic group and closeness to racial group. These effects were in directions similar to significant effects noted for other groups, with closeness to ethnic group increasing distress and closeness to racial group reducing distress.

Several sensitivity analyses were performed. Analyses were done using three way interaction terms with the discrimination variables, closeness to group variables and each of the immigration factors (representing nativity, age at immigration to the United States, years resident in the United States, and non-Hispanic Black Caribbean ethnic sub-group [separate models for each moderator]). The findings were similar to those reported above in terms of the direction and significance of the effects. Analyses were also performed on

the entire sample for the immigrant specific factors (age at immigration and years resident in the United States) using the technique of conditionally relevant variables (e.g., Gee, Ro, Gavin, & Takeuchi, 2008; Noh et al., 1999; Ross & Mirowsky, 1992; Yoo et al., 2009). The technique addresses the inapplicability of the immigration factor moderators (age at immigration to the United States and years resident in the United States). In essence, through using dummy coded variables for those factors and including another dummy coded nativity variable, four way interactions allow the regressions to be relevant for immigrants and considered “missing” for nonimmigrants. The findings suggested similar effects to those presented above.

Discussion

The primary goal of this study was to examine the effect of closeness to ethnic group and closeness to racial group on the association between discrimination and distress among Black Caribbean adults in the United States across different contexts pertinent to non-Hispanic Black Caribbeans. This goal was addressed in three steps. First differences in discrimination and group closeness variables were examined by immigration factors. Second, the relationship between discrimination and distress was investigated for the entire sample and by immigration factors. Third, whether closeness to ethnic group and racial group buffered or exacerbated the impact of association between discrimination and distress was examined for the entire sample and by immigration factors.

Differences in Discrimination and Feeling Close to Group by Immigration Factors

As the first step, differences in subtle and severe discrimination and closeness to ethnic and racial group were examined for the entire sample and by nativity status, developmental stage of arrival in the United States, years resident in the United States, and ethnic sub-group. Reports of severe discrimination were higher among the United States natives than among immigrants, among those who arrived in the United States when they were twenty-five or younger than among those who arrived as older adults, and among those from the West Indies than Haitians. Similar differences were observed for subtle discrimination, with United States natives and those who arrived in the United States when they were twenty-five or younger reporting higher subtle discrimination than their counterparts. These patterns are similar to others in reported research on other the relationship between more time in the United States and discrimination reports in other immigrant groups in which more time in the United States, especially more time during the individual's early development, is highly associated with increased exposure to and awareness of being discriminated against (Leu et al., 2008; Yoo et al., 2009). In addition, they mirror findings from qualitative research on non-Hispanic Black Caribbean adults in which more time in the United States is associated with increased socialization about and responsiveness to United States norms around race and racism (Bashi Bobb, 2001; Vickerman, 1999, 2001).

The only group difference in the closeness to ethnic group reports was between those who have lived in the United States for more than ten years and those who have resided there for fewer than ten years, with the latter group having greater closeness to ethnic group. Though not significant, the impact of the effect of closeness to ethnic group

was in anticipated directions for nativity groups—higher among immigrants than United States natives. It was also higher among Haitians than West Indians. Similarly, though there were null findings for the tests of group differences in closeness to racial group (with the exception of the ethnic sub-group differences), the statistically insignificant differences were in the anticipated direction, with greater closeness to racial group reported among the United States natives, those who resided in the United States for more than 10 years, and those who arrived in the United States as older adults.

One possible explanation for these null findings is that closeness to ethnic group is equally meaningful across the immigration factor groups. However, this conflicts with a growing body of research on the significance of feeling a sense of closeness to the ethnic group for immigrants (e.g., Rumbaut, 1994), and the increasing importance of racial identity as they become more socialized to United States norms of race-relations, particularly for Blacks from the Caribbean or with Caribbean ancestry who become more socialized to the definitions of Blackness that are endemic to the United States (Bashi Bobb, 2001; Butterfield, 2004a, 2004b; Kasinitz, 1992; Kasinitz et al., 2001; Waters, 1994, 1999). The null findings thus beg the question of whether the differences, which are in the anticipated direction, would be significant if a scale, rather than a one-item index, of group closeness was used.

The Association Between Discrimination and Distress: Differences by Immigration Factors

The second step of the study involved examining whether discrimination increased psychological distress among non-Hispanic Black Caribbeans in the United States. There was a significant main effect for subtle discrimination across the entire

sample. In addition, when both types of discrimination were examined simultaneously, subtle discrimination exerted a greater impact on distress. Similarly, there was a significant main effect for subtle discrimination in the groups created by the immigration factors, with the exception of those born in the United States. However, the latter group did exhibit a main effect for severe discrimination. These findings suggest that discrimination exerts a pernicious effect on the health of non-Hispanic Black Caribbeans. There is a growing literature on the differential effects that less blatant versus more overt types of discrimination play in the mental health of minorities (e.g., Guyll et al., 2001; Noh et al., 2007; Operario & Fiske, 2001). The distinction between subtle and severe discrimination and their different impacts in the lives of Black immigrants and those with immigrant ancestry in the present study adds to this literature. The findings in this study are similar to those found for other ethnic minority and immigrant populations in North America (e.g., Jackson et al., 1996; Krieger, 2000; Mays et al., 2007; Williams, 1999; Williams et al., 2003; Yip et al., 2008).

Do Closeness to Ethnic Group and Closeness to Racial Group Buffer or Exacerbate the Impact of Discrimination on Distress for Black Immigrants and their Descendants?

The third step of the study focused on examinations of the moderating role that closeness to ethnic group and closeness to racial group might play in the relationship between discrimination and psychological distress. When the entire sample was examined only main effects for closeness to racial group were found, with greater closeness to racial group related to decreased distress. Similar main effect only patterns for closeness to racial group were observed for both of the groups created by dichotomizing years resident in the United States, as well as for individuals who

immigrated to the United States as adults older than twenty-five, and Haitians. These main effect findings suggest that, for these Black Caribbeans, normatively defining themselves along racial lines, through feeling close to other Blacks in the United States, facilitates well being. However, those positive effects do not suffice to blunt the impact of discrimination on the mental health of Black Caribbeans.

On the other hand, the main effect only pattern for closeness to ethnic group suggests that such closeness increases distress. This pattern was observed for those who immigrated to the United States when they were older than twenty-five, those who lived in the United States for more than 10 years, and for Haitians. These main effect findings suggest that feeling close to others from the Caribbean increases distress. It is quite likely that closeness to the ethnic group is associated with missing similar others, as well as heightened feelings of disconnection from the broader society and awareness of being in a new minority status (Gee, Chen et al., 2006). Yet, these negative effects do not serve to aggravate the already negative impact of discrimination on the mental health of Black Caribbeans.

The significant interaction patterns that were observed only with those born in the United States suggests a complex relationship between discrimination and group closeness among Blacks in the United States with Caribbean ancestry. Both high and low group closeness both exacerbated the impact of discrimination on distress for those who were born in the United States. For those who lived in the United States for fewer than ten years, this was also the case. This suggests that accessing both ethnic and racial self-schemas can aggravate distress.

Conclusions, Limitations, and Future Directions

The current study adds to the literature on the stress buffering as well as exacerbating impacts of group identification. Through addressing different types of identity that are likely to be central to Black immigrants and similar others of immigrant ancestry, the study highlights the complexity involved in the role that group identification plays in the association between discrimination and distress. In so doing, the study contributes to scholarship on the circumstances and conditions under which group identification can help or hinder mental health when faced with unfair treatment. Yet, the study also included certain limitations.

The first limitation of the study lies in the measurement of closeness to the ethnic group and closeness to the racial group. Single item indices were used for these constructs. The restrictions of maintaining a large enough sample size to test the hypothesized group differences with statistical power, as well as the measurement of the construct in large survey datasets like the one used in this study, precluded the use of scales that can assess the constructs in more multi-faceted ways. Such scales ideally capture more information about the complexity of group closeness and ought be used in future studies examining the role that it plays in the relationship between discrimination and distress among immigrant and immigrant ancestry populations.

The second limitation of the study is the cross-sectional nature of the data. Even though there is an increasing body of longitudinal research that suggests that discrimination leads to distress, there is very little longitudinal research that speaks to the impact that group identification plays, less in terms of examinations of adult populations, and practically none with adult immigrant populations. Although the present study was

able to maximize on the availability of a large sample of understudied Black adult immigrants, the nature of the data still precludes making causal statements about the impact of closeness to the ethnic and racial group.

The two factor structure found in exploratory factor analyses intimates that there needs to be more examination of the nature of the discriminatory situations that Black Caribbeans encounter in the United States. The main effects for subtle discrimination (more than severe discrimination) underscores the importance of understanding the impact of subtle discrimination among immigrants and descendants of immigrants. Because of the salience of their immigrant identity many situations of unfair interpersonal interactions are often ambiguously interpreted.

In addition, the complex interactions between the different types of discrimination and different types of closeness to group for those born in the United States suggests the complexity of their lived experience of race. Although investigated to a certain extent in qualitative sociological studies, there has been much less of a focus on this in quantitative psychological literature.

Overall, the present study extends the literature on the negative impact that discrimination has on the mental health of immigrant and immigrant ancestry populations in the United States by studying an understudied ethnic group. It also adds to the burgeoning literature on the moderating impact of closeness to the group and the circumstances under which this moderation dulls or aggravates the impact of discrimination on health outcomes, particularly mental health outcomes. Future work needs to continue to disentangle the impact of closeness to the ethnic versus racial group

with this and other immigrant populations and to discern in clearer ways the manifestations of discriminatory treatment that afflict immigrants.

Table 2.1 Weighted Percents for the NSAL Non-Hispanic Black Caribbean Sample ($n = 1,396$) Compared to the 2005-2007 American Community Survey ($n = 2,391,604$)

	<i>n</i>	Weighted Percent	ACS 2005-2007
Gender			
Women	864	49.5	53.2
Men	542	50.5	46.8
Ethnic Sub-Group			
Other West Indian	1098	84.94	68.34
Haitian	298	15.06	31.66
Age			
18-34	533	40.93	36.78
35-54	494	31.45	39.51
55-64	235	16.30	11.99
≥ 65	134	11.32	10.49
Education			
≤ 11 years	258	18.52	19.2
12 years	411	30.21	31
13-15 years	380	28.60	28
≥ 16 years	347	22.68	21.7
Marital Status			
Married	596	39.8	39.8
Separated/Divorced/Widowed	327	18.82	18.5
Never married (incl. partnered)	473	41.38	41.7
Nativity			
United States-born	353	28.84	41.36
Foreign-born	1042	71.16	58.64
Naturalized U.S. Citizen	584	60.53	52.58
Women	363	50.96	57.3
Men	221	49.04	42.7
Not a U.S. Citizen	434	39.47	47.42
Women	260	50.33	52.6
Men	174	49.67	47.4
Median household income, \$	1396	36, 000	50, 007

Table 2.2 Descriptive Statistics of Study Variables

Characteristic	Unweighted (SE)	Weighted (SE)
Distress, mean	9.10 (.10)	9.11 (.19)
Discrimination		
Subtle discrimination, mean	2.43 (.03)	2.49 (.07)
Severe discrimination, mean	1.87 (.02)	1.99 (.06)
Closeness to ethnic group, mean	3.45 (.02)	3.38 (.06)
Closeness to racial group, mean	3.30 (.02)	3.28 (.04)
Immigration factors		
Ethnic sub-group, %		
West Indian	78.36 (.01)	84.36 (.03)
Haitian	21.64 (.01)	15.64 (.03)
Nativity, %		
Born in the United States	25.80 (.01)	30.06 (.04)
Born outside the United States	74.20 (.01)	69.94 (.04)
Age at immigration to United States, %		
Twenty-five and younger	59.21 (.02)	58.47 (.02)
Twenty-six plus	40.79 (.02)	41.53 (.02)
Time resident in United States, %		
Ten or fewer years	27.19 (.01)	28.62 (.03)
More than ten	72.81 (.01)	71.38 (.03)
Demographic		
Household income, mean	42, 259 (1,035)	47, 853 (4, 005)
Sex, %		
Male	38.82 (.01)	50.03 (.03)
Female	61.18 (.01)	49.97 (.03)
Age, mean	40.98 (.42)	40.77 (1.11)
Region, %		
Northeast	69.59 (.01)	58.39 (.07)
Midwest	0.58 (.00)	0.03 (.02)
South	28.87 (.01)	29.16 (.08)
West	0.95 (.00)	0.09 (.04)

Table 2.3 Weighted Correlations Among Study Variables for Total Sample

		1	2	3	4	5
1.	Subtle discrimination	–	.74**	.07	.09 [†]	.31*
2.	Severe discrimination		–	.02	.06	.29*
3.	Closeness to ethnic group			–	.40***	.01
4.	Closeness to racial group				–	-.07 [†]
5.	Psychological distress					–

Note. [†] < .10. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 2.4 Comparison of Means Across Non-Hispanic Ethnic Sub-Group, Nativity Status, Age at Immigration and Years Resident in the United States

	Non-Hispanic Black Caribbean Sub-Group			Nativity			Age at Immigration to the United States			Years Resident in the United States		
	West Indian	Haitian	<i>t</i>	U.S.-Born	Immigrant	<i>t</i>	25 or Younger	Older than 25	<i>t</i>	10 or fewer	More than 10	<i>t</i>
Distress	9.09	9.19	-.24	9.38	8.99	.98	9.37	8.46	2.39*	10.15	8.50	1.61
Subtle discrimination	2.50	2.42	0.77	2.74	2.38	3.94**	2.54	2.15	3.96**	2.38	2.38	.00
Severe discrimination	2.02	1.86	2.14*	2.33	1.85	4.78***	2.00	1.63	4.16***	1.87	1.84	.17
Closeness to ethnic group	3.38	3.41	-.20	3.25	3.44	-1.86	3.43	3.45	-.23	3.54	3.40	2.32*
Closeness to racial group	3.23	3.47	-2.93**	3.36	3.23	1.71 [†]	3.16	3.32	-1.65	3.17	3.25	-.59

Note. [†] < .10. * *p* < .05. ** *p* < .01. *** *p* < .001

Table 2.5 Regression Analyses Testing Associations Between Subtle and Severe Discrimination and Distress

	Model I: Subtle Discrimination			Model II: Severe Discrimination			Model III: Subtle and Severe Discrimination		
	<i>b</i>	SE	95% CI	<i>b</i>	SE	95% CI	<i>b</i>	SE	95% CI
Intercept	2.42***	.07	2.29, 2.56	2.38***	.07	2.24, 2.51	2.40***	.06	2.26, 2.53
Age	-.00**	.00	-.01, -.00	-.00**	.00	-.00, -.00	-.00	.00	-.00, -.00
Female (vs. male)	-.05	.04	-.14, .04	-.04	.04	-.13, .05	-.04	.04	-.13, .05
Household income	-.00*	.00	-.00, -.00	-.00**	.00	-.00, -.00	-.00**	.00	-.00, -.00
Northeast	-.05	.06	-.17, .08	-.02	.06	-.14, .09	-.03	.06	-.15, .08
South	-.09	.07	-.23, .05	-.06	.07	-.20, .07	-.07	.06	-.20, .06
Subtle discrimination	.09**	.03	.03, .16				.07*	.03	.02, .12
Severe discrimination				.10*	.04	.02, .18	.04	.03	-.02, .09
R ²	.15			.14			.16		

Note. † < .10. * *p* < .05. ** *p* < .01. *** *p* < .001

Table 2.6 Regression Analyses Testing Closeness to Ethnic Group and Closeness to Racial Group as a Moderators of Subtle and Severe Discrimination on Distress

	Model I: Closeness to Ethnic Group			Model II: Closeness to Racial Group			Model III: Closeness to Ethnic Group and Racial Group		
	<i>b</i>	SE	95% CI	<i>b</i>	SE	95% CI	<i>b</i>	SE	95% CI
Intercept	2.41***	.06	2.28, 2.53	2.41***	.06	2.29, 2.53	2.41***	.06	2.30, 2.52
Age	-.00**	.00	-.00, -.00	-.00**	.00	-.01, -.00	-.00**	.00	-.00, -.00
Female (vs. male)	-.04	.04	-.13, .04	-.04	.04	-.13, .05	-.04	.04	-.12, .04
Household income	-.00**	.00	-.00, -.00	-.00**	.00	-.00, -.00	-.00**	.00	-.00, -.00
Northeast	-.04	.05	-.14, .07	-.02	.05	-.12, .07	-.03	.05	-.13, .07
South	-.07	.06	-.20, .05	-.07	.06	-.20, .05	-.08	.06	-.20, .04
Subtle discrimination	.07*	.03	.02, .13	.07*	.03	.02, .12	.07*	.03	.02, .13
Severe discrimination	.04	.03	-.02, .09	.04	.03	-.07, -.00	.04	.03	-.02, .09
Closeness to ethnic group	-.01	.03	-.05, .06				.03	.03	-.02, .09
Closeness to racial group				-.04*	.02	-.08, -.00	-.05*	.02	-.09, -.01
Subtle discrimination x closeness to ethnic group	-.02	.04	-.10, .06				-.02	.04	-.10, .05
Severe discrimination x closeness to ethnic group	-.04	.03	-.10, .03				-.01	.04	-.09, .06
Subtle discrimination x closeness to racial group				-.02	.02	-.07, .04	-.01	.03	-.07, .05
Severe discrimination x closeness to racial group				-.03	.06	-.06, .01	-.03	.02	-.07, .02
R ²	.17			.18			.18		

Note. † < .10. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 2.7 Regression Analyses of Distress by Nativity Status

	Immigrant			United States-born		
	<i>b</i>	SE	95% CI	<i>b</i>	SE	95% CI
Intercept	2.17** *	.09	1.98, 2.37	2.54***	.06	2.42, 2.66
Age	-.00*	.00	-.00, -.00	-.00*	.00	-.01, -.00
Female (vs. male)	.01	.04	-.07, .10	-.10	.04	-.19, -.02
Household income	-.00**	.00	-.00, .00	-.00***	.00	-.00, -.00
Northeast (vs. others)	.14	.08	-.03, .31	-.13**	.04	-.21, -.04
South (vs. others)	.13	.10	-.07, .32	-.24***	.05	-.34, -.13
Subtle discrimination	.09**	.03	.04, .15	-.00	.02	-.04, .04
Severe discrimination	.01	.04	-.07, .10	.06***	.02	.05, .14
Closeness to ethnic group	.01	.03	-.05, .07	-.00	.03	-.07, .07
Closeness to racial group	-.04	.02	-.09, .01	-.10*	.03	-.17, -.03
Subtle discrimination x closeness to ethnic group	-.02	.03	-.09, .05	-.10*	.04	-.18, .01
Severe discrimination x closeness to ethnic group	-.02	.06	-.15, .10	.10*	.05	.00, .19
Subtle discrimination x closeness to racial group	-.03	.03	-.09, .04	.11**	.03	.04, .17
Severe discrimination x closeness to racial group	-.03	.04	-.12, .06	-.08*	.03	-.14, -.01
	.18			.36		

Note. An insignificant Chow test ($F = .56, p = .58$) revealed that the main effect parameters for discrimination and identity and the parameters for the interaction effects between discrimination and identity were similar across the groups. The models were statistically similar, suggesting that the coefficients were similar across the groups.

† < .10. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 2.8 Regression Analyses of Distress by Age at Immigration to the United States, for Immigrants

	Twenty-five or younger at immigration			Older than 25 at immigration		
	<i>b</i>	SE	95% CI	<i>b</i>	SE	95% CI
Intercept	2.34***	.11	2.11, 2.57	2.09***	.14	1.79, 2.38
Age	-.01***	.00	-.01, -.00	.00	.00	-.00, .01
Female (vs. male)	.01	.04	-.07, .09	.02	.05	-.09, .13
Household income	-.00*	.00	-.00, -.00	-.00 [†]	.00	-.00, .00
Northeast (vs. others)	.14	.12	-.11, .39	.03	.06	-.10, .16
South (vs. others)	.13	.12	-.11, .38	-.01	.08	-.18, .16
Subtle discrimination	.06 [†]	.03	-.01, .14	.15**	.04	.07, .23
Severe discrimination	.05	.04	-.04, .14	-.05	.05	-.15, .05
Closeness to ethnic group	-.03	.03	-.08, .03	.07*	.03	.04, .13
Closeness to racial group	.02	.03	-.04, .07	-.07 [†]	.04	-.16, .01
Subtle discrimination x closeness to ethnic group	-.06	.04	-.14, .02	.04	.05	-.06, .15
Severe discrimination x closeness to ethnic group	.00	.08	-.15, .16	-.11	.08	-.26, .05
Subtle discrimination x closeness to racial group	-.02	.03	-.09, .06	.00	.04	-.08, .09
Severe discrimination x closeness to racial group	-.01	.06	-.14, .11	-.09	.07	-.25, .05
R ²	.21			.24		

Note. An insignificant Chow test ($F = .39, p = .68$) revealed that the main effect parameters for discrimination and identity and the parameters for the interaction effects between discrimination and identity were similar across the groups. The models were statistically similar, suggesting that the coefficients were similar across the groups.

Table 2.9 Regression Analyses of Distress by Years Resident in the United States, for Immigrants

	Ten or fewer years in the U.S.			More than 10 years in the U.S.		
	<i>b</i>	SE	95% CI	<i>b</i>	SE	95% CI
Intercept	1.99**	.18	1.62, 2.37	2.13**	.12	1.90, 2.37
Age	.00	.00	-.00, .01	-.00*	.00	-.00, -.00
Female (vs. male)	-.01	.05	-.08, .11	.04	.05	-.06, .14
Household income	-.00	.00	-.00, .00	-.00*	.00	-.00, -.00
Northeast (vs. others)	.25*	.09	.05, .44	.14	.12	-.10, .38
South (vs. others)	.27**	.09	.08, .47	.06	.11	-.17, .30
Subtle discrimination	.16**	.04	.07, .25	.06*	.02	-.02, .11
Severe discrimination	.10*	.04	.01, .18	-.01	.04	-.09, .07
Closeness to ethnic group	-.07 [†]	.04	-.16, .01	.09*	.03	.02, .15
Closeness to racial group	.05	.04	-.03, .12	-.08**	.02	-.12, -.03
Subtle discrimination x closeness to ethnic group	-.04	.07	-.18, .10	-.04	.03	-.11, .03
Severe discrimination x closeness to ethnic group	-.08	.08	-.23, .08	.06	.05	-.05, .17
Subtle discrimination x closeness to racial group	-.08*	.03	-.15, -.01,	.01	.05	-.08, .10
Severe discrimination x closeness to racial group	.08	.05	-.03, .19	-.08	.06	-.20, .03
R ²	.44			.13		

Note. A significant Chow test ($F = 17.70, p = .00$) revealed that the main effect parameters for discrimination and identity and the parameters for the interaction effects between discrimination and identity were different across the groups. The models were statistically different, suggesting that the coefficients were different across the groups.

[†] < .10. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 2.10 Regression Analyses of Distress by non-Hispanic Black Caribbean Ethnic Sub-Group

	West Indian			Haitian		
	<i>b</i>	SE	95% CI	<i>b</i>	SE	95% CI
Intercept	2.43***	.06	2.31, 2.55	2.01***	.09	1.84, 2.19
Age	-.01***	.00	-.01, -.00	.00	.00	-.00, .01
Female (vs. male)	-.03	.05	-.13, .07	.02	.05	-.07, .11
Household income	-.00**	.00	-.00, -.00	-.00**	.00	-.00, -.00
Northeast (vs. others)	-.06	.06	-.18, .07	.28**	.08	.12, .45
South (vs. others)	-.06	.08	-.22, .11	.03	.07	-.11, .16
Subtle discrimination	.06 [†]	.03	-.00, .13	.09**	.03	.03, .14
Severe discrimination	.05	.03	-.02, .11	-.00	.04	-.08, .07
Closeness to ethnic group	.02	.03	-.05, .09	.05 [†]	.03	-.01, .12
Closeness to racial group	-.03	.02	-.07, .01	-.07 [†]	.03	-.13, -.00
Subtle discrimination x closeness to ethnic group	-.01	.04	-.09, .07	-.04	.04	-.12, .04
Severe discrimination x closeness to ethnic group	-.02	.04	-.11, .06	.01	.07	-.14, .15
Subtle discrimination x closeness to racial group	-.02	.04	-.09, .06	.07	.05	-.02, .17
Severe discrimination x closeness to racial group	-.02	.03	-.08, .04	-.02	.06	-.15, .10
R ²	.20			.27		

Note. An insignificant Chow test ($F = .14, p = .87$) revealed that the main effect parameters for discrimination and identity and the parameters for the interaction effects between discrimination and identity were similar across the groups. The models were statistically similar, suggesting that the coefficients were similar across the groups.

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$

Figure 2.1 The moderating effects of closeness to racial group on the association between severe discrimination and distress for the U.S.-born.

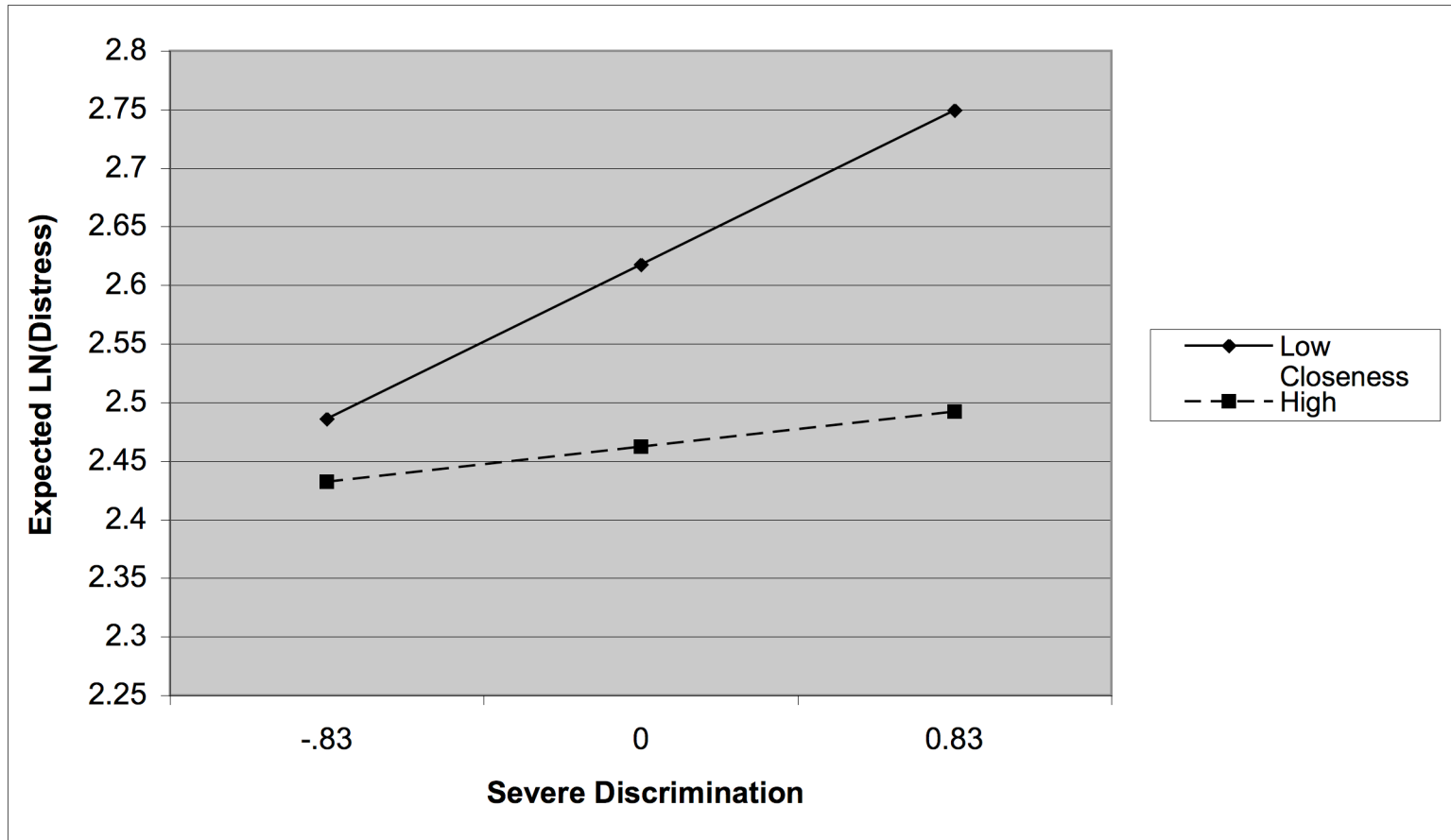


Figure 2.2 The moderating effects of closeness to ethnic group on the association between subtle discrimination and distress for the U.S.-born.

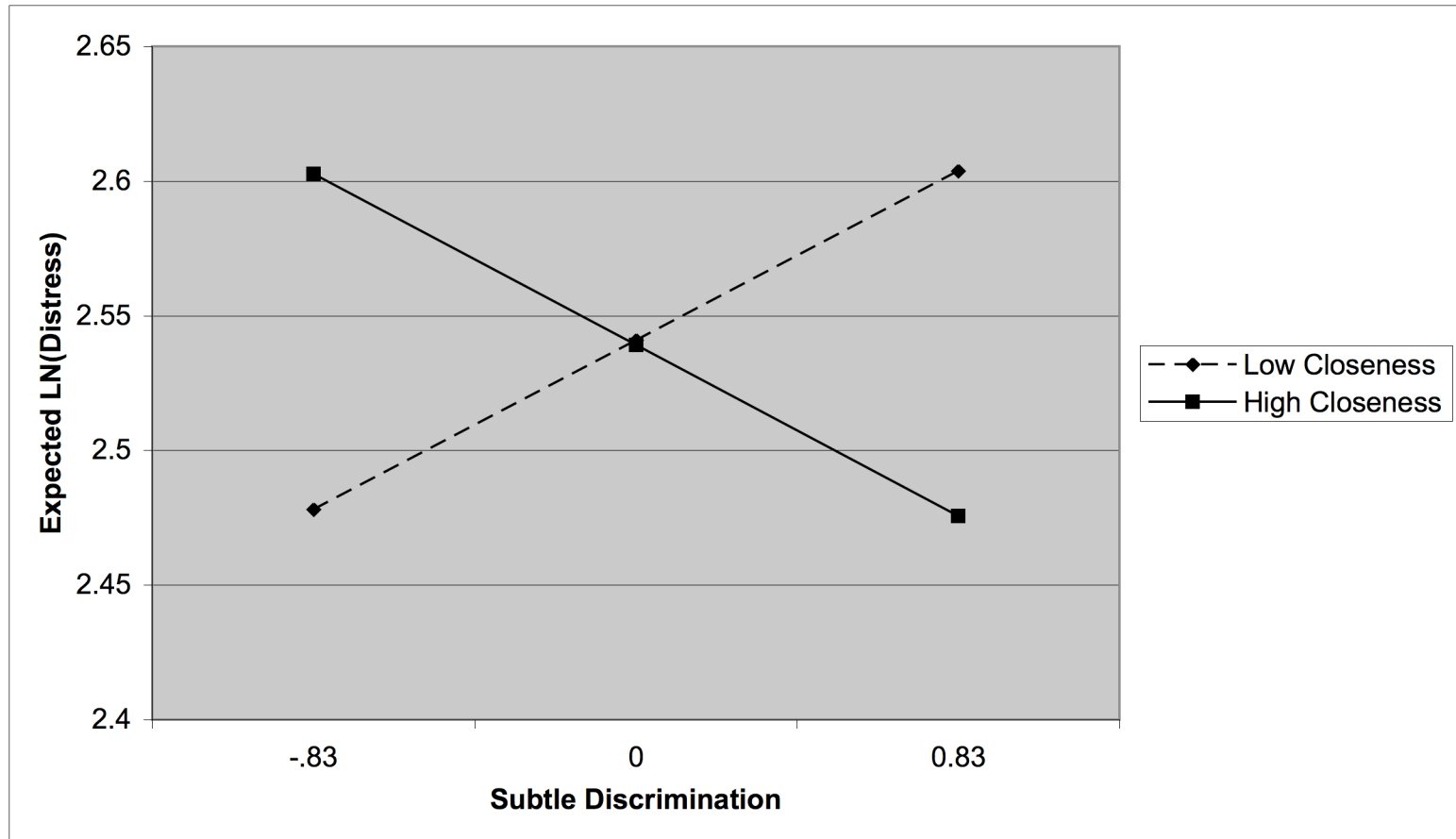


Figure 2.3 The moderating effects of closeness to ethnic group on the association between severe discrimination and distress for the U.S.-born.

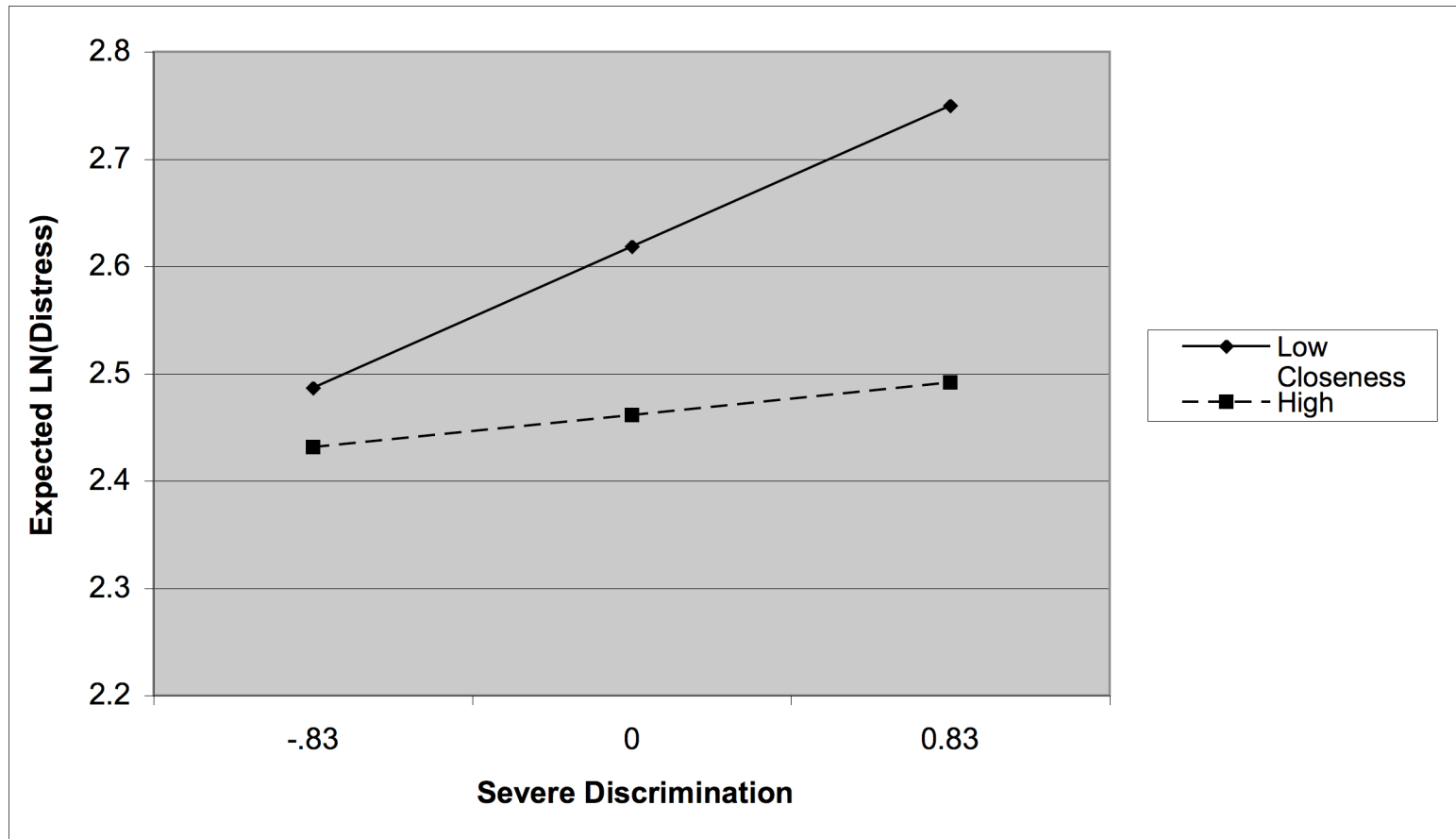


Figure 2.4 The moderating effects of racial identity on the association between subtle discrimination and distress for the U.S.-born.

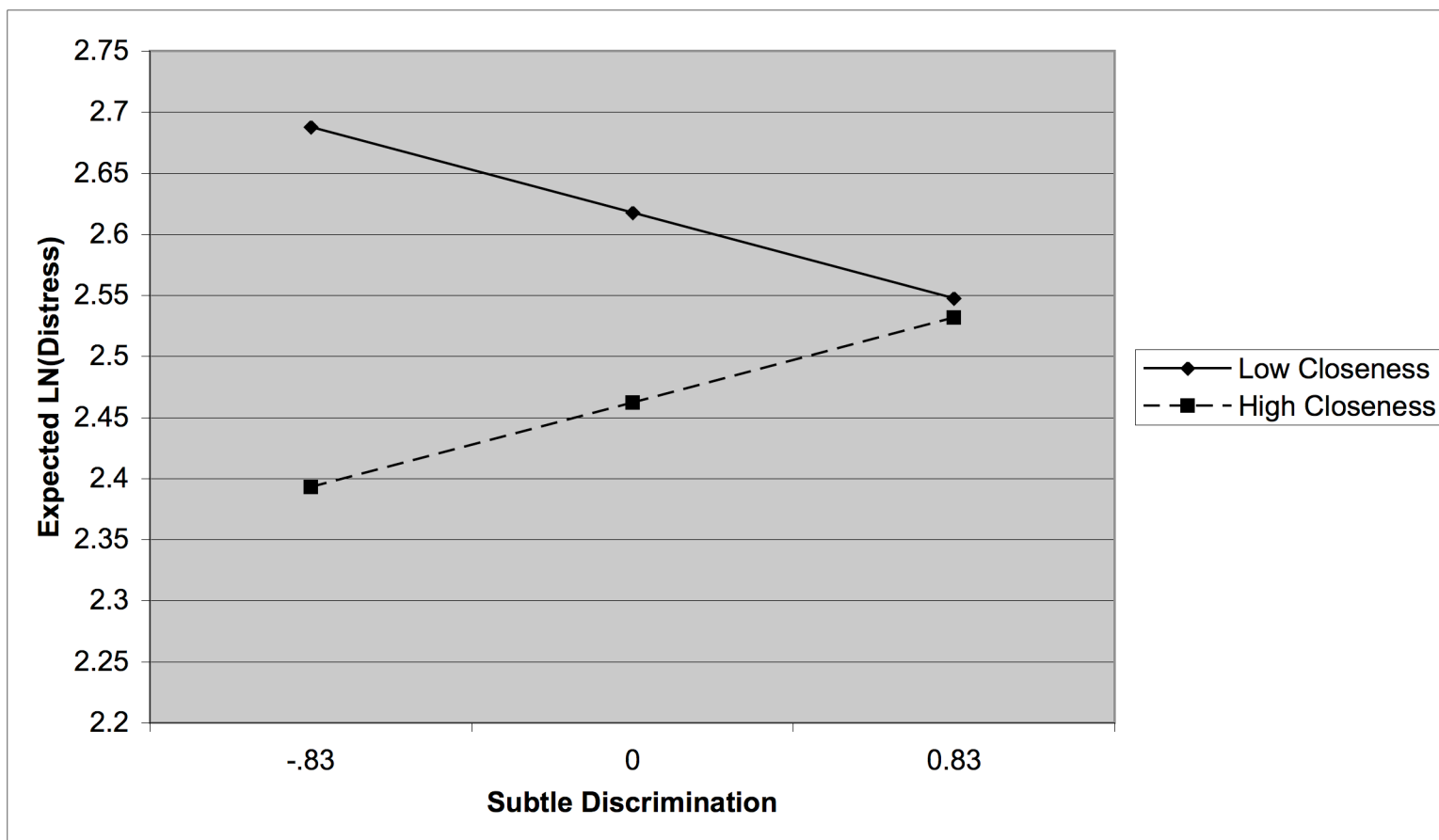
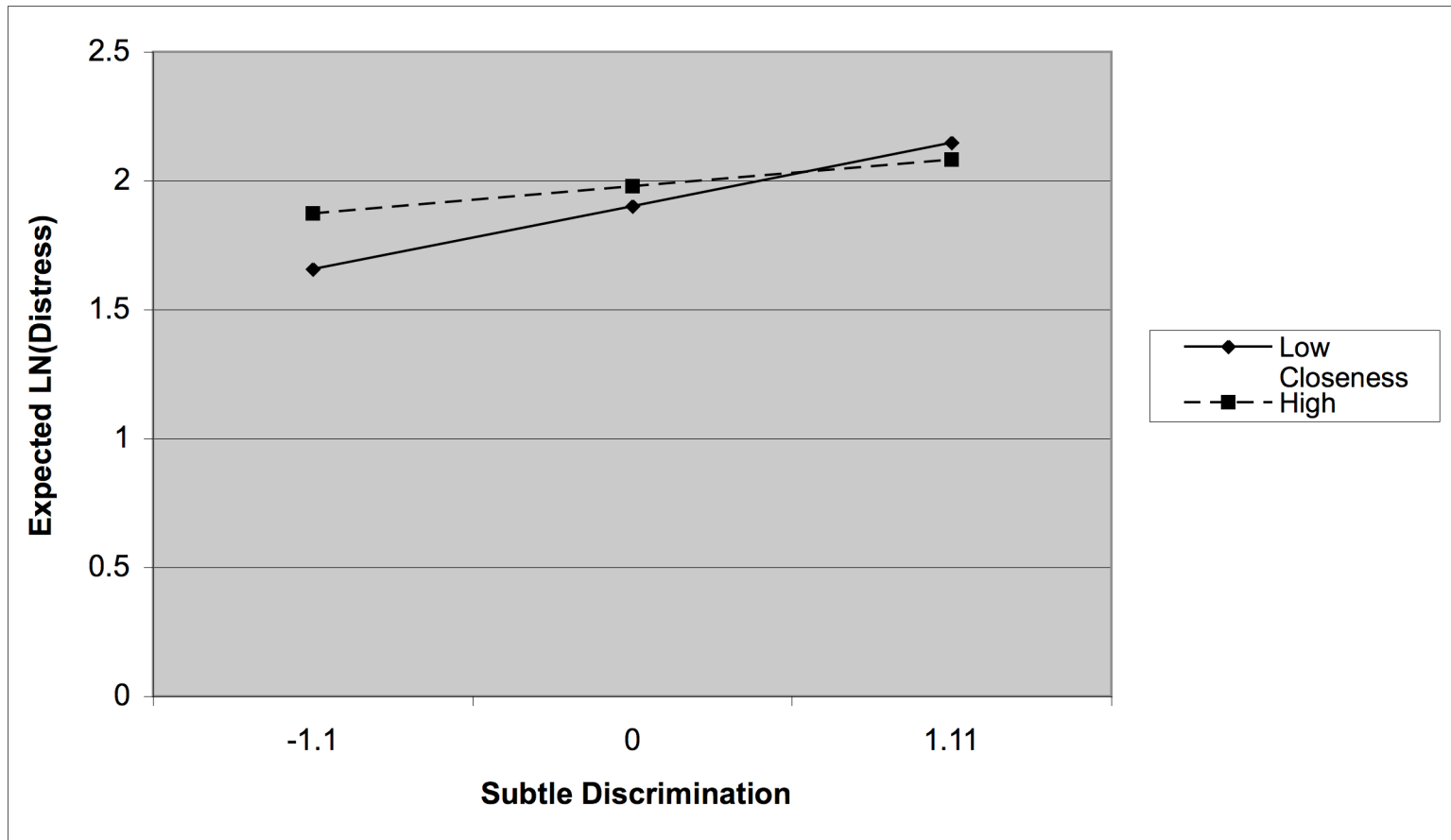


Figure 2.5 The moderating effects of closeness to racial group on the association between subtle discrimination and distress for those who have been resident in the United States for 10 or fewer years.



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CHAPTER THREE

DISCRIMINATION AND DISTRESS: TESTING THE MEDIATING AND MODERATING ROLES OF CONTROL AND SOCIAL SUPPORT AMONG BLACK CARIBBEANS

Abstract

The present study examined the stress process model among non-Hispanic Black Caribbeans. The main goal of the study was to address a gap in the literature concerning the mechanisms via which discrimination impacts health among ethnic minorities. The present study explored how discrimination perceptions, conceptualized as chronic strains, were associated with personal control and, subsequently, psychological distress. The study also examined whether and how social support functioned as a distress-deterrent. As hypothesized, subtle discrimination perceptions increased distress indirectly through wearing away at personal control. Social support acted in neither a mediator or moderator capacity. Instead, emotional support exerted a direct distress deterring function. Implications for the application of the stress process model to the study of discrimination and mental health are discussed.

Literature Review

A growing body of literature, both theoretical and empirical, focuses on the negative impact that discrimination has on mental health. The research suggests that minorities experience decreased mental health in the face of such adversity, regardless of whether the exposure is time-limited or chronic (for reviews see Krieger, 2000; Williams

& Mohammed, 2009). However, little is known about the mechanisms involved in linking discrimination to health. The present study addresses this gap in the literature by investigating how personal and social resources are implicated in the relationship between discrimination stressors and mental health. The literature review first explores how chronic discrimination and its relationship with mental health can be understood using the stress process framework. This is followed by reviews of the empirical research on different models for the role of personal control and social support in the association between different types of stressors and mental health, and where it exists, for discrimination stressors and mental health.

Discrimination and Its Impact on Mental Health: A Stress Process Perspective

One of the frameworks most frequently applied to examine the impact of stressors on health outcomes is the stress process (Pearlin, 1989, 1999; Pearlin, Menaghan, Lieberman, & Mullan, 1981). Originating in the field of sociology, studies in this large body of work are rooted in diverse traditions such as structural functionalism, symbolic interactionism, network theory, organizational theory, and labeling theory (Lennon, 1989). They are all connected by a desire to show the ways in which macro and micro forces are linked in health outcomes (Lennon, 1989). Researchers in this area largely subscribe to the notion that human beings are by nature adaptable. However, the crux of the framework lies in its focus on stressors, health outcomes and mediating and moderating mechanisms affecting the association between the two.

Stressors are forces that can potentially deplete health (Pearlin, 1989, 1999; Pearlin et al., 1981). They can be either life events or chronic strains. Life events are incidents that, whether positive or negative in terms of their implications, are time-

limited. Examples of these include death, divorce, marriage, childbirth, and being fired. Chronic strains, on the other hand, are stressors that are broader in scope and more enduring in their impact (Quittner, Glueckauf, & Jackson, 1990). They affect the individual through changes in multiple life domains because of the constant shifts and adaptations they require (Pearlin et al., 1981; Pearlin & Turner, 1995; Quittner et al., 1990). Adjusting to the birth of a child or the death of a loved one, struggling with financial hardship, and taking care of a chronically ill relative are examples. Theoretical work has considered discrimination as both a life event stressor and as a chronic strain. Empirical investigations, however, have been scarce.

Much of the contribution of the stress process framework lies in its focus on the mediating and moderating mechanisms that affect the association between stressors and health. In the early body of work using the framework, these were all misleadingly referred to as resources and mediators (see, for example, Pearlin, 1989). This has been amended, for the most part, after research methods developed that clarified the differences between mediators and moderators (Baron & Kenny, 1986; Holmbeck, 1997). Studies of the mechanisms in the stress process thus focus on three main types of mechanisms. They explore the behaviors, perceptions, and other reactions that occur when faced with such stressors or that independently help reduce or aggravate distress (main effects). They investigate how those reactions in turn relate to health outcomes (mediators). They examine the responses that affect the intensity of with which the stressor and is associated with health outcomes (moderators).

The personal and social domains have been the main ones studied in explorations of stress process mechanisms. Personal factors are those that are considered intrinsic to

the individual, regardless of whether they are stable personality characteristics or are situation-dependent. Social resources are those that are rooted in the social environment, and concern relationships with others (Pearlin, 1989; Wheaton, 1983). These factors are mostly referred to as resources. This term carries a positive connotation and an implicit assumption of moderation effects. However, studies that explore factors in these domains are not restricted in these two ways. They also examine ways in which the factors might work with stressors to exacerbate health outcomes. In addition, studies investigate the ways in which the factors might mediate the relationship between the stressor and the health outcome.

The focus of moderation models of the role of personal and social factors in the association between stressors and mental health is on *when* the association of stressors with poor or good health occurs. Several studies point to the ways in which personal and social resources attenuate or exacerbate the otherwise negative association between a variety of stressors and health outcomes. However, the research on population specific stressors and mechanisms is limited.

This is certainly the case for the population specific stressor of discrimination and its associations with mental health. An increasing body of literature examines possible moderating and mediating mechanisms in the associations between discrimination and physical health outcomes (McEwen & Seeman, 1999). These studies propose that the stress of discrimination affects physical health through the wear and tear of an increased allostatic load, which in turn affects social support and other factors in the individual's life that have implications for physical health outcomes (Borrell, Kiefe, Williams, Diez-Roux, & Gordon-Larsen, 2006; R. Clark, 2003, 2006; R. Clark, Anderson, Clark, &

Williams, 1999; R. Clark & Gochett, 2006; V. R. Clark & Harrell, 1982, 1992; Garofalo, Hamann, Ashworth, & Baum, 2006; McNeilly et al., 1996; Steffen, McNeilly, Anderson, & Sherwood, 2003; Taylor et al., 2007). Researchers have made attempts to connect the literature on the mechanisms explaining discrimination's physical health effects with ideas about mechanisms that might explain discrimination's mental health effects (e.g., Krieger, 2000). However, there have been very few empirical studies that examine discrimination's effect on mental health outcomes with either theoretical or empirical investigation of the possible mechanisms involved in the process (see for example, Harris et al., 2006; Jackson, Williams, & Torres, 2003; Outlaw, 1993).

There is no existing research that examines one of the main types of personal resources, personal control, as a moderator in the relationship between discrimination and mental health among ethnic minorities (for an exception see, Rodriguez, 2004). Similarly, there is only a small body that examines social support in this capacity (Brondolo, ver Halen, Pencille, Beatty, & Contrada, 2009; Fischer & Shaw, 1999; Noh & Kaspar, 2003; Prelow, Mosher, & Bowman, 2006; Sanders Thompson, 2006; Utsey, Lanier, Williams, Bolden, & Lee, 2006). If more is to be understood about when exactly discrimination exerts harmful effects, such studies are essential. These investigations help move the field from an implicit perception of minorities as victims to an appreciation of their resilience when faced with adversity. Such an earnest dialogue with the heterogeneity of experiences that minorities face can then help facilitate the creation of interventions geared at building upon strengths and helping those most in need.

Models of personal and social resources as mediators in the association between stressors and mental health address *how* stressors are related to health outcomes. They

examine the factors that stressors directly affect and how those factors in turn are associated with health outcomes. There has been a dearth of literature examining such models in the context of discrimination stressors. This is likely because these models require an a priori specifying of the temporal ordering of the variables. Although there has been longitudinal evidence that discrimination impacts health (e.g., Brody et al., 2006; Jackson et al., 1996; Pavalko, Mossakowski, & Hamilton, 2003; Schulz et al., 2006), longitudinal studies that could justify the hypothesized ordering of third variables in this relationship are lacking. This is an understandable impediment to investigations of mediation effects involved with discrimination stressors. However, if the specific processes underlying the association between discrimination and mental health are to be understood, research must begin with preliminary examinations that specify hypothetical connections. If these are significant, they can suggest possibilities for future data collection efforts and studies.

Although the stress process has produced an enormous body of work, repeated calls to examine population specific stressors have largely gone unheeded. Similarly, few studies have addressed the need for a better matching of personal and social factors with population specific models of the stress-distress relationship that some scholars have identified. The present study addresses both of these crucial concerns. It focuses on an ethnic minority group, Black Caribbeans in the United States and analyzes a stressor that is appropriate to their experience: chronic discrimination. In addition, it explores the mechanisms involved in the association between this population specific stressor and their mental health.

Models of the Role of Personal Control

Personal control “is the perception that one has the ability, resources, or opportunities, to get positive outcomes or avoid negative effects through one’s actions” (Thompson & Schlehofer, 2007). Although related, perceived personal control is conceptually distinct from the locus of control (Lefcourt, 1991, 2000; Rotter, 1966, 1992), self-efficacy (Bandura, 1977, 1992, 2000) and powerlessness (Seeman, 1991). Self-efficacy refers to the ability to perform behaviors that can lead to desired outcomes (Bandura, 1977, 1992, 2000). Locus of control is also conceptually distinct because it refers to individual beliefs regarding where control of actions and outcomes lie (Lefcourt, 2000; Rotter, 1966, 1992). Powerlessness concerns perceptions of the lack of control or power (Seeman, 1991). Personal control differs from these constructs in that it relates to judgments or beliefs about whether one’s actions can produce a certain outcome, or outcomes in general, and the extent to which a given outcome(s) is/are controllable (Thompson, 1981; Thompson & Schlehofer, 2007; Thompson, Sobolew-Shubin, Galbraith, Schwankovsky, & Cruzen, 1993). Personal control perceptions are thus beliefs that focus on whether a specific outcome or outcomes in general are in the scope of the individual’s own influence. This study focuses on perceptions of general control, also referred to as mastery.

The stress process model argues that perceived personal control, “both regulates the impact of stressors and may be elevated or lowered by exposure to stressor conditions” (Pearlin & Skaff, 1996, p. 243). However, only a few studies simultaneously assess competing models of personal control as a third variable in the association between stressors and mental health outcomes (Creed & Bartrum, 2008; Pudrovka,

Schieman, Pearlin, & Nguyen, 2005). Although both the mediator and moderator approaches suggest that perceptions of control are implicated in the ways in which chronic strains and health outcomes are experienced, they differ with regard to the mechanism by which mastery operates. This will be discussed in further detail in the proceeding sections with respect to discrimination stressors.

To date, there are few, if any, studies that conduct simultaneous model testing on the role of perceived control in the relationship between discrimination stressors and mental health (for exceptions to this see Creed & Bartrum, 2008; Pudrovska et al., 2005). Examinations of different models of the role of perceived personal control in the association between discrimination stressors, particularly chronic discrimination strains, and mental health outcomes are important for several reasons. First, researchers have conjectured that chronic stressors wear away at the individual's sense that outcomes are within his/her influence, leaving him/her with a sense of being buffeted by various situations (Broman, Mavaddat, & Hsu, 2000; Gurin, Gurin, Lao, & Beattie, 1969; Gurin, Gurin, & Morrison, 1978). Second, chronic exposure to stressors because of one's social status, whether sex, race, nationality, age, ability status or any other, might lead the individual to feel lesser than and inferior, regardless of whether they initially believed that to be true, in essence gradually changing cognitions (Branscombe & Ellemers, 1998). Third, such chronic discrimination strains, especially of the kind that connotes blocked opportunities or limited power, might lead to the engagement of behaviors that negatively impact mental health or the avoidance of positive ones that bolster it. Finally, cultural differences in the importance of control suggest that it might not function as a third variable in the association between discrimination stressors and mental health for some

cultures as it does for North Americans (O'Connor & Shimizu, 2002; Sastry & Ross, 1998; Weisz, Rothbaum, & Blackburn, 1984a, 1984b). In contexts that are likely to expose ethnic minorities and immigrants to discrimination, these types of cultural differences might continue to operate. On the other hand, it may be that exposure to such contexts heightens or decreases the sense of control of the members of various ethnic and immigrant groups.

Personal Control as a Moderator

Few studies examine personal control as a moderator of the relationship between discrimination stressors and mental health (see the schematic in Figure 3.1a). Nevertheless, empirical examinations of personal control as a moderator of the relationship between other chronic strains and mental health provide some insight into its ability to attenuate or exacerbate discrimination's association with mental health. Studies that examine personal control as a moderator of the relationship between stressors and mental health focus on perceptions of general stress (Bovier, Chamot, & Perneger, 2004), the strains that the elderly face with their decreasing competence with everyday tasks (Chou, 2005), economic hardship (Pudrovskaja et al., 2005), caregiving stress (Mausbach et al., 2006; Mausbach et al., 2007), unemployment (Creed & Bartrum, 2008), and the strains associated with immigrant employment status (Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2007).

Some of these studies suggest that personal control is indeed a significant moderator. For example, in the study of unemployment and the financial strain that accompanies it, mastery attenuated the impact of financial strain. Specifically, when financial strain was high but mastery was also high, psychological distress was low; when

financial strain was high and mastery was low, psychological distress was high (Creed & Bartrum, 2008). In another study, low personal control aggravated the association between late-life economic hardship and depression among elders, while high personal control rendered the association insignificant (Pudrovska et al., 2005). The same pattern of aggravation of stressors at low mastery levels and no association at high levels was found for caregiver strains and psychiatric symptoms (Mausbach et al., 2006). The study of general stressors showed an opposite moderation pattern in which low levels of stress and high levels of mastery were related to better mental health (Bovier et al., 2004). Other studies suggest that there is no interaction effect of personal control with stressors—just a main effect (e.g., Chou, 2005) (see schematic in Figure 3.1b).

Three studies were located that explicitly focused on the role of personal control in the relationship between discrimination stressors and mental health (Dion, Dion, & Pak, 1992; Jasinskaja-Lahti et al., 2007; Rodriguez, 2004). A random sample drawn from the metropolitan study of Chinese immigrants and Chinese Canadians (Dion et al., 1992), and a national probability sample of mid-life adults in the United States that included ethnic minorities (Rodriguez, 2004) both found support for the hypothesis of personal control as a moderator. Where the results in the first study are more straightforward (high discrimination and low control associated with increased distress), the results from the national probability sample reveal the necessity of a nuanced investigation of discrimination among ethnic minorities. The results showed that different types of discrimination interact with personal control differently in the association with mental health. Specifically, higher scores on the measure of discrimination that dealt with mistrust or being treated as though one was inferior, in combination with higher levels of

mastery were associated with decreased psychological distress. However, regardless of the level of mastery, higher scores on the measure of blatant discrimination were associated with increased psychological distress. In essence the results indicated both a moderation effect and a null finding, depending on the type of discrimination examined. Among ethnic minorities or immigrants then, it seems that the relationships among discrimination, perceived control, and mental health are nuanced by type of chronic discrimination strains that they experience.

A study using a nationwide probability sample of Finnish immigrants from the former Soviet Union alluded to other complex associations with these constructs among ethnic minorities (Jasinskaja-Lahti et al., 2007). The study is commendable in its use of population specific stressors, as well as its operationalization of the control construct in a relevant and matched domain. Three-way interactions with employment status, perceived ethnic discrimination at work, and perceptions that their own skills and efforts were effective in obtaining employment were significant. Post-hoc probing of the interaction discerned that higher discrimination stressors, when combined with a stronger sense of personal control in acquiring employment opportunities, were associated with increased psychological distress among the unemployed. Although the immigrants' increased perceived control regarding employment had an independent positive effect on mental health, when combined with perceived discrimination in the work domain and being unemployed such beliefs were in fact detrimental to mental health. This type of relationship suggests that an increased sense of mastery might exacerbate the association between discrimination and poor mental health among those who are unable to change a disadvantageous situation. The findings further intimate that ethnic minorities might be at

double jeopardy. First, their health might be negatively affected by the discrimination that confronts them. Second, mental health might also deteriorate because of strong beliefs of control in the midst of contrary circumstances. This second vulnerability factor is closely aligned to the concept of goal striving stress (Sellers, Bonham, & Neighbors, under review; Sellers & Neighbors, 2008), in which frustrated attempts to achieve a goal lead to worsened health outcomes. The findings make sense in light of research that shows two different possibilities on the relation of minority status to personal control. Some theoretical and empirical research suggests that persons with minority status have lower perceptions of control than those in majority statuses (Gurin et al., 1969; Gurin et al., 1978; Webb, Waugh, & Herbert, 1993). On the other hand, studies have revealed that persons in minority status have a strong sense of mastery and a positive self-regard (Ryff, Keyes, & Hughes, 2003).

In short, for ethnic minorities, particularly those who are immigrants, the limited literature presents an inconsistent picture of the role that personal control might play. It suggests that personal control might be related to mental health independent of discrimination stressors, that it might buffer the otherwise strong negative association between discrimination and mental health, or that it might aggravate the association between discrimination and mental health.

Personal Control as a Mediator

The underlying conceptual model that sees personal control as a mediator (see schematic in Figure 3.1c) in the relationship between chronic strains and health outcomes is based on early sociological research on the stress process (Pearlin, 1989; Pearlin et al., 1981; Pearlin & Schooler, 1978). In this model, the individual's health is made worse

through the depletion of his/her sense of control. There are a few empirical examinations that assess whether this is in fact what happens. However, they suggest that in the midst of chronic strains such as financial hardship (Pudrovskaya et al., 2005), unemployment (Creed & Bartrum, 2008), and a decreasing sense of competence among the aging (Chou, 2005), personal control is reduced and that this depletion in turn is negatively associated with mental health.

Fewer studies still examine the possibility of personal control as a mediator in the context of discrimination stressors and the mental health of ethnic minorities. The handful of studies that do examine these relationships between discrimination and the mental health of ethnic minorities suggest a pattern similar to the one just noted. Studies of African Americans (Broman et al., 2000; Prelow et al., 2006), Arabs in America (Moradi & Hasan, 2004), and Latinos in America (Moradi & Risco, 2006) all show that discrimination perceptions are indeed associated with diminished perceptions of control. These are in turn associated with poorer mental health. The majority of these studies (Moradi & Hasan, 2004; Moradi & Risco, 2006; Prelow et al., 2006), however, were conducted using convenience samples of university students, a population for which the sense of control is likely to be in flux. A large proportion of these students are likely away from their families for the first time and are contending with new social relationships, both interpersonal and intergroup. As such, the estimates of personal control in this group might not be representative of the wider population. It is still not clear then whether these types of associations exist for older and more diverse samples.

Models of the Role of Social Support

Numerous articles and book chapters provide varying definitions of social support (e.g., Barrera, 1986; Hupcey, 1998; Payne & Jones, 1995; Sarason & Sarason, 2006; Schwarzer & Leppin, 1991; Tardy, 1985; Turner, 1983; Wortman & Dunkel-Schetter, 1987). The perception of the availability of supportive ties (Barrera, 1986) has been shown to be more influential than actual support received in predicting health outcomes (Wethington & Kessler, 1986). In the stress process literature, it is these perceptions, particularly of emotional and instrumental support, that have been the main variables studied.

Only a few studies simultaneously assess competing models of social support as a third variable in the association between stressors and mental health outcomes (e.g., Miller et al., 2001; Quittner et al., 1990). Fewer studies still conduct such model testing looking at the relationship between discrimination stressors and mental health (Prelow et al., 2006; Utsey, Giesbrecht, Hook, & Stanard, 2008).

Social Support as a Moderator

Empirical investigations of social support as a moderator within the stress process framework (see schematic in Figure 3.2a) tend to refer to social support as a coping resource. Coping resources, by their very nature, are hypothesized to be helpful. Accordingly, within the stress process framework examinations of social support have focused on its buffering role (Cohen & Wills, 1985). Moderating effects, however, can imply that at low levels the variable exacerbates the impact of the strain. It has also been hypothesized that either extreme of social support can worsen the impact of strains on health (e.g., Krause, 1995, 2005).

Most of the few existing studies that explore moderation effects of social support in the relationship between discrimination stressors and mental health have found main effects (see schematic in Figure 3.2b). A literature search using major databases in psychology and sociology located five studies that explicitly examined social support as a potential moderator of the association between racism or discrimination perceived by ethnic and racial minorities and mental health (Fischer & Shaw, 1999; Noh & Kaspar, 2003; Prelow et al., 2006; Sanders Thompson, 2006; Utsey et al., 2006).

In only one of these studies was a moderation effect detected. In a study of 215 first year university students, one of two indicators of social support was found to moderate the association between a 22-item measure of race-related stress and psychological distress (Utsey et al., 2008). In the context of looking at family relationships as a “sociofamilial resource” (p. 54), both family cohesion, which is similar to emotional support, and family adaptability, the family’s ability to change or respond to developmental and situational needs (Olson, 1986; Place, Hulsmeier, Brownrigg, & Soulsby, 2005), were examined. Only family adaptability was a significant moderator, however. At low levels of race-related stress, high family adaptability helped reduce distress. The authors interpreted this to mean that the family was most beneficial in providing support when stress was low; at higher stress levels, however, the demands exceeded the family’s resources (Utsey et al., 2008). At first, such data appear to favor a perspective of social support as a moderator. However, the lack of statistical significance for the moderation effects of the measure that more closely resembles emotional support seems to call support’s moderation capacity into question.

The first of the four studies that explicitly failed to find moderation effects used the proportion of within group contact as the measure of social support. Social networks did not moderate the relationship between reports of racist events and poor mental health among 119 African Americans aged 18 to 25, (Fischer & Shaw, 1999). In addition to the regular examinations of significant coefficients for the interaction, this study also included other rigorous tests because of the low detectability of moderator effects in non-experimental studies (McClelland & Judd, 1993). Specifically, the researchers conducted tests of simple slopes, looking at the difference in extreme-group correlations with Fisher's *z*-transformation using one-tailed tests of the significance. However, there were no moderating effects. The authors surmised that these null findings might have been a reflection of their measure's lack of detail to the specific characteristics of intra-group contact (attitudes, values, and so forth) that might facilitate protection against discrimination (Fischer & Shaw, 1999).

Similarly, in another study of a convenience sample of African American university students ($n = 135$) (Prelow et al., 2006), analyses failed to detect any differences in the relationship between the frequency of experiencing racial discrimination and depression according to social support. In this study, social integration, guidance, attachment, reassurance of worth, and alliance were the variables used to operationalize social support. A moderate and highly statistically significant negative correlation between social support and depressive symptoms were reported, intimating the possible main effect role for social support. Indeed, other (mediation) analyses reported in the study implied a reduction in depressive symptoms due to the direct effects of social support.

Other studies included different ethnic and immigrant samples but also failed to find moderation effects. Neither seeking guidance and support nor emotional discharge affected the relationship between interpersonal racial discrimination and subjective distress among young adult Asian, European, Hispanic, and African Americans (Sanders Thompson, 2006). Subjective distress was assessed by a measure with seven items that examined “unwanted thoughts and images, dreams, waves of feeling and repetitive behavior that are related to the stressor” and with another eight items that assessed “blunted sensation, behavioral inhibition, and awareness of emotional numbness” (Sanders Thompson, 2006, p. 1202). Because of this approach to the measurement of distress, it is unclear whether the positive association found between emotional discharge and re-experiencing symptoms was an artifact of being primed for such experiences with the questionnaire about discrimination experiences encountered. Furthermore, there was no mention of whether the instruments were counterbalanced for different groups of respondents as a check of this possible confound.

In the fourth study, a household probability sample of adult children ($n = 311$) of Korean immigrant parents ($n = 180$) in Canada, seeking social support by talking to family, relatives and friends failed to reduce the impact of perceived discrimination on depression. Nevertheless, social support independently reduced depression, suggesting a health maintenance function of the regular contact with significant others.

In short, although social support moderation effects have been found in studies of the association between discrimination and the physical health of racial and ethnic minorities (e.g., R. Clark, 2003, 2006; R. Clark & Gochett, 2006; Finch & Vega, 2003; Gee, Chen et al., 2006), studies looking at mental health outcomes have shown only main

effects. Similar null findings for social support's moderator role have been found in studies of other types of stressors (e.g., Chou, Chi, & Chow, 2004; Lincoln, Chatters, & Taylor, 2005; Quittner et al., 1990). This has spawned a large body of literature that argues that social support's role as a distress-deterrent or distress-aggravator must be studied on its own terms (e.g., Aneshensel & Stone, 1982; Thoits, 1982, 1983). Along these lines, scholars have argued that even when there is no statistical interaction between stressors and social support, if social support independently decreases distress, it can be interpreted as a buffer (Kessler & McLeod, 1985; Lin & Dean, 1984; Wheaton, 1985). The main theoretical framework guiding empirical research in this area proceeds from Durkheim's sociological study of suicide (Durkheim, 1951), and suggests that embeddedness in cohesive social membership groups protects against distress. Hypotheses thus relate to the health maintenance function of supportive social relations and the health depletion function of unsupportive or negative social relations (Thoits, 1982, 1983).

Social Support as a Mediator

An investigation of social support as a mediator focuses on whether it accounts for the relationship observed between discrimination and mental health (see schematic in Figure 3.2c). There are no theoretical frameworks that exist, to the author's knowledge, that address this explicitly. However, frameworks have been used to examine social support as a mediator in the association between other types of stressors and mental health. Two such frameworks are outlined.

One model of social support as a mediator can be considered a model of additive effect buffering (Wheaton, 1985), or a support mobilization model (Barrera, 1986; Ensel

& Lin, 1991; Schwarzer & Leppin, 1991; Wheaton, 1985). In this model, social support acts as an intervening variable that suppresses the full harm that stressors might otherwise exert on mental health. This perspective advocates that stressors trigger coping resources, and as a result, coping resources improve otherwise poor mental health. Empirical research endorsing this model includes panel studies (Aneshensel & Frerichs, 1982; Lin, Woelfel, & Light, 1985). The resource mobilization perspective assumes a positive correlation between stressors and helpful social relations; stress should be related to increases in social support. In most research on ethnic minority populations, however, stressors and beneficial social are negatively correlated (Lincoln, 2007; Lincoln, Chatters, & Taylor, 2003; Lincoln et al., 2005), suggesting resource deterioration (see below) as opposed to resource mobilization. These findings, along with the ethnic differences that have been found in the prevalence of stressors and in coping strategies (e.g., Krause, Ingersoll-Dayton, Liang, & Sugisawa, 1999; Pinquart & Sörensen, 2005), suggest that it crucial to examine the applicability of the resource mobilization model to more culturally diverse populations.

An alternative model of social support as a mediator has been called the support deterioration model (Mitchell & Moos, 1984; Norris & Kaniasty, 1996; Prelow et al., 2006; Quittner et al., 1990). In this model, strains wear upon perceptions of support and in so doing contribute to poor mental health. Studies show these effects in multiple stressor domains. Chronic financial strains (Chou et al., 2004; Lincoln et al., 2005), caretaking strains (Quittner et al., 1990), and the strains of deterioration of competence in the elderly (Chou, 2005) have been linked to decreased social support, which has, in turn, worsened mental health. In one study of financial strains among African Americans aged

18 to 54, for example, social support decreased in the face of financial stressors and this in turn, increased depressive symptoms (Lincoln et al., 2005). Among African Americans, traumatic events (Lincoln et al., 2003), and financial strain (Lincoln, 2007), have also been demonstrated to increase negative interactions with family members and in so doing increase depressive symptoms.

Because most studies of decreased social support as a reaction to strains tend to be cross-sectional, however, more research is needed before firm conclusions can be drawn. This is particularly the case for studies that discrimination stressors. A literature search uncovered only one study that examined these associations (Prelow et al., 2006). The study used a convenience sample of African American college students who attended a predominantly European American university on the Northeast coast. Mediation analysis results offered support for the support deterioration model. Although such findings are promising in understanding how social support might function among minorities in the context of discrimination, many more studies are needed.

The Current Study

Examinations of the psychological mechanisms involved in the association between discrimination the mental health of ethnic and racial minorities are at an early stage. The conflicting results in the few studies to date points to the necessity of examining different models. The current study thus has two goals—both related to tests of examining the association of variables examined in the social stress process framework. The first goal is to compare different models of the role that personal control plays in the positive association between discrimination and distress among ethnic minorities, specifically, among Black Caribbeans. The moderator model predicts that

discrimination will relate to mental health differently depending on levels of personal control. High control is hypothesized to counteract high discrimination levels and be associated with decreased distress, while low control in the midst of high discrimination is anticipated to exacerbate the association between discrimination and distress. The mediator model predicts that personal control acts as an intervening or explanatory variable. In this model, discrimination is expected to influence mental health indirectly by decreasing personal control. Chronic discrimination is anticipated to wear away at personal control and in so doing worsen mental health.

The second goal is to compare different models of the role that social support plays in the relationship between discrimination and distress among Black Caribbeans. The moderator model predicts that discrimination will relate to mental health differently depending on levels of social support. Specifically when discrimination is high but social support is also high, distress levels will be low; when discrimination is high and social support is low, distress will be high. The mediator model predicts that the association between discrimination and psychological distress is partially or fully carried through a diminished perception of control.

Methods

Sample

The data come from the Black Caribbean respondents in the National Survey of American Life (hereafter referred to as the NSAL), a household survey conducted between 2001 and 2003, the largest study of the mental health of Blacks in the United States conducted to date (Jackson et al., 2004). The NSAL is the first national sample of individuals from different race and ethnic groups who live in the same geographical areas

as African Americans. The total NSAL sample included 1, 621 Black Caribbeans, 3, 570 African Americans, and 891 non-Hispanic Whites. The main sampling frame selected African American and White samples in proportion to the African American population. This is referred to as the Core Sample Frame. The African American sample is a national representative sample of households located in the 48 coterminous states with at least one Black adult age 18 or older who did not identify ancestral ties to the Caribbean (Heeringa, Torres, Sweetman, & Baser, 2006; Sweetman, Baser, Faison, Rafferty, & Torres, 2006). The NSAL White sample is a stratified, disproportionate (as the density of African Americans in a block group increased, the rate of selection of Whites in that group also increased) sample of adults living in United States tracts and blocks that have at least a 10 percent African American population. The NSAL White sample represents 14 percent of the total United States White population (Heeringa et al., 2006; Sweetman et al., 2006).

Respondents were considered Black Caribbean if they self-identified as Black and answered affirmatively to any of the following three questions: (1) Are you of West Indian or Caribbean descent? (2) Are you from a Caribbean-area country, or (3) Do you have parents or grandparents who were born in a Caribbean-area country. The NSAL is unlike other samples of Black Caribbeans that have focused either exclusively on New York or Florida because of its maximization of the number of Black Caribbeans across the country. The NSAL sampling procedure for the Black Caribbeans consisted of two distinct components: (1) respondents from the core sampling frame, in which respondents were recruited with a multi-stage stratified area probability design ($n = 265$); and (2) respondents from high-density sampling, in which United States census block groups

were oversampled where Blacks of Caribbean descent represented at least 10 percent of households ($n = 1356$). The NSAL Black Caribbean sample is a national representative sample of that population (Heeringa et al., 2006; Sweetman et al., 2006).

This study uses the non-Hispanic Black Caribbean subgroup ($n = 1,396$) from the Black Caribbean sample. Within that pool, analyses are restricted to those respondents who completed a mail-in follow-up to the main interview, referred to as the self-administered questionnaire (SAQ) (see description in the following section). This is done because questions about one of the social support variables (instrumental support) were presented only in the SAQ. Of the 695 Black Caribbeans who completed the SAQ, 579 were non-Hispanic Black Caribbeans (Haitians and West Indians).

Procedure

The main interviews were conducted using computer assisted software and administered by trained interviewers with racial backgrounds similar to those of the respondents. Interviews were conducted in English. The average length of the Black Caribbean interview was 2 hours 43 minutes, 23 minutes longer than the average interview length for African Americans, and one hour longer than the average interview length for the non-Hispanic Whites (Jackson et al., 2004). Although there was a high refusal rate among the Black Caribbeans, their response rate was 77.7 percent, 5.4 percent more than the overall response rate (Jackson et al., 2004). The SAQ was a 40-page questionnaire that comprised questions that were not presented in the main instrument because of cost limitations. Black Caribbeans had a response rate of 42.9 percent for this mail survey. Although this is a relatively low response rate, preliminary analyses conducted by the study's key researchers show that the demographic

distributions of the SAQ respondents did not differ greatly from those of the main interview respondents (Sweetman et al., 2006), suggesting that the SAQ respondents are demographically representative of the larger sample.

Measures

Psychological Distress

The Kessler Psychological Distress Scale (K6) (Furukawa, Kessler, Slade, & Andrews, 2003; Kessler et al., 2002; Veldhuizen, Cairney, Kurdyak, & Streiner, 2007) measured distress. The K6 has been successfully used as a screening instrument for the diagnosis for more serious mental illnesses (Furukawa et al., 2003; Kessler et al., 2002; Veldhuizen et al., 2007). This 6-item inventory assesses the prevalence of negative feelings in the past 30 days (e.g., “how often did you feel...so sad nothing could cheer you up?, ...nervous?, ...restless or fidgety?, ...hopeless?, ...that everything was an effort?, ...worthless?”). Respondents reported frequency on a 5-point scale (5 = *none of the time*, 4 = *a little of the time*, 3 = *some of the time*, 2 = *most of the time*, and 1 = *all of the time*). Responses were reverse coded so that higher scores indicated more frequent symptoms of psychological distress. As in other studies that have used the items (e.g., Kessler, Mickelson, & Williams, 1999), exploratory principal components factor analyses found only one meaningful dimension among the items, with factor loadings ranging between .55 and .80 and an eigenvalue of 3.09. To score the K6, the points were added together yielding a possible total of 0 to 30 points (range = 6 to 28; Cronbach’s $\alpha = .80$). A threshold of 13 or more is used to define serious mental illness. Because this variable was positively skewed, (skewness = 2.27 (.00), kurtosis = 9.19 (.00), it was log

transformed (range = 1.79 to 3.33, $M = 2.14$, $SD = .38$). Results are, however, interpreted using the exponent of the log expressed as a percent.

Chronic Discrimination

The Everyday Discrimination Scale (Williams, Yu, Jackson, & Anderson, 1997), measured chronic discrimination. This self-report scale assesses chronic or routine experiences of unfair treatment that have occurred in the past year. It is a subtle measure of perceived discrimination that does not prime the respondent to think about race, which eliminates cues to prejudice prior to responding to the questions. The 10-item measure assesses the frequency of interpersonal mistreatments experienced in the respondent's day-to-day life. The stem question is, "In your day-to-day life, how often have any of the following things happened to you?" The ten items are: a) You are treated with less courtesy than other people; b) You are treated with less respect than other people; c) You receive poorer service than other people at restaurants or stores; d) People act as if they think you are not smart; e) People act as if they are afraid of you; f) People act as if they think you are dishonest; g) People act as if they're better than you are; h) You are called names or insulted; i) You are threatened or harassed; and j) You are followed around in stores. Respondents reported frequency on a 6-point scale (6 = never, 5 = *less than once a year*, 4 = *a few times a year*, 3 = *a few times a month*, 2 = *at least once a week*, and 1 = *almost everyday*). Responses were reverse coded so that higher scores indicated more frequent experience of interpersonal mistreatment.

Exploratory factor analyses were conducted on this measure for two main reasons. First, this measure has been used as both a unidimensional scale (Gee, Spencer, Chen, & Takeuchi, 2007; Kessler et al., 1999; Krieger, Smith, Naishadham, Hartman, & Barbeau,

2005; Williams et al., 1997), and as a two factor scale (Guyll, Matthews, & Bromberger, 2001). Second, the scale is used in the present study with an adult ethnic group (non-Hispanic Black Caribbeans) on which it has not been normed nor used in published research. A principal components factor analysis of the ten items with varimax rotation detected two factors with eigenvalues greater than one. Similar to a previous study using the scale, the factor loading patterns suggested that one factor dealt with instances of more subtle and covert types of interpersonal mistreatment (treated with less courtesy, treated with less respect, receive poorer service, people act as if they think you're not smart, people act as if they're better) (eigenvalue = 5.08; factor loadings = 0.64 – 0.83). The other dealt with more blatant or severe forms of interpersonal mistreatment (people act as if they're afraid, people act as if they think you're dishonest, called names or insulted, threatened or harassed, followed around in stores) (eigenvalue = 1.02; factor loadings = 0.55 – 0.81). When the items on each factor were combined to form two scales, the five-item subtle mistreatment scale showed very good internal consistency (Cronbach's $\alpha = .83$), and the five-item severe mistreatment scale demonstrated good internal consistency (Cronbach's $\alpha = .79$). Scale scores for the two types of mistreatment were computed by summing the five items in each sub-scales and then dividing that total by five.

The present study uses the sub-scales as continuous variables with mostly normal distributions. In Stata, the kurtosis of a normally distributed random variable is 3 and the skewness of a similarly distributed variable is zero. The subtle discrimination sub-scale has skewness of .63 (.00) and kurtosis of 3.49 (.02). The severe discrimination sub-scale has skewness of 1.38 (.00) and kurtosis of 5.92 (.00). This follows the traditional

approach to using the unidimensional scale as a continuous variable (e.g., Kessler et al., 1999; Krieger et al., 2005; Williams et al., 1997), and recently also using the two-dimensional version as continuous level scales (e.g., Gyll et al., 2001).

A single attribution item at the end of the measure assessed the perceived reason for the experience of unfair treatment, with possible responses being: 1) your ancestry or national origins; 2) your gender; 3) your race; 4) your age; 5) your height or weight; 6) your shade of skin color; and 7) Other (specify). The question was asked only of respondents who reported unfair treatment a few times a year or more frequently ($n = 1061$). Among those who provided responses for this question ($n = 413$), the majority of respondents who reported unfair treatment attributed the experiences to race (weighted proportion = 59.87 percent, $n = 260$), with the next most endorsed attributions being to the miscellaneous category of “other” (weighted proportion = 15.14 percent, $n = 57$) and to “shade of skin color” (weighted proportion = 14.15 percent, $n = 48$). Because of the tendency for ethnic minorities such as African Americans to report significantly more unfair treatment when compared to Whites (Deitch et al., 2003), and because recent studies that have used this measure tend not to incorporate the attribution item in assessing the effects of unfair treatment on health as these reasons are not significantly associated with health conditions above and beyond the level of everyday discrimination (e.g., Chae et al., 2008; Gee et al., 2007; Schulz et al., 2006), the present study’s analyses focused only on everyday discrimination.

Personal Control.

The Pearlin and Schooler "Personal Mastery Scale" measured personal control (Pearlin & Schooler, 1978) measured personal control. The Personal Mastery Scale has

been used to assess personal control in several studies and has demonstrated good construct validity (Pearlin et al., 1981). The stem statement is: “Now I’d like to know how strongly you agree or disagree with these other statements about yourself.” The seven items are: a) There is really no way I can solve some of the problems I have; b) Sometimes I feel that I’m being pushed around in life; c) I have little control over the things that happen to me; d) I can do just about anything I really set my mind to; e) I often feel helpless in dealing with the problems of life; f) What happens to me in the future mostly depends on me; and g) There is little I can do to change many of the important things in my life. These items are answered on a 4-point (1-strongly agree, 2-agree, 3-disagree, 4-strongly disagree), with two items (d and f) reverse-coded so that a higher total score signifies greater personal mastery. Averaging the scores across the items created the scale. The final score was set to missing if there were more than three items with missing values. The scale showed adequate internal reliability for this sample (Cronbach’s $\alpha = .74$).

Emotional Support.

Emotional support was measured by three indicators. These indicators have been typically used in large-scale surveys studies to assess the role of received emotional support in health outcomes (e.g., Lincoln et al., 2005; Schuster, Kessler, & Aseltine, 1990). They originate in earlier measures of affective support. The indicators assessed the frequency with which respondents received emotional support from family members other than a spouse or partner. The specific items asked about the frequency with which these family members: a) make you feel loved and cared for; b) listen to you talk about your private problems and concerns; and c) express interest and concern in your well-

being. Items were scored on a scale in which 1 = very often, 2 = fairly often, 3 = not too often, and 4 = never. The items were reverse coded so that higher scores indicated that emotional support was more frequently received. The scale showed adequate internal reliability for this sample (Cronbach's $\alpha = .74$).

Instrumental Support.

Four indicators were used in the NSAL study to assess instrumental support from family members. The stem question was: "Other than your spouse or partner, how often do your family members do the following things for you?" The specific indicators were: a) How often do they provide you with transportation? b) How often do they help you with regular chores, such as shopping, cleaning, or yard work? c) How often do they help you financially? d) How often do they help you when you are sick or ill? Response categories ranged from very often (1) to never (4). The items were reverse-coded so that higher values indicated that instrumental support was more frequently received. The scale showed very good internal reliability for this sample (Cronbach's $\alpha = .81$).

Demographic and Control Variables.

Socioeconomic status.

Prior research suggests important links between socioeconomic status and reports of discrimination and distress and also in differences in reports of chronic stress (e.g., Hayward, Crimmins, Miles, & Yang, 2000). It is thus important to include this variable as a covariate. The indicator used as a proxy for socio-economic status was household income. Household income was a continuous variable that was imputed for cases with missing data.

Sex.

Sex differences that have been discussed in reactivity to interpersonal stressors versus less proximal stressors (Stroud et al., 2002) suggest that emotional support might be a greater source of vulnerability for women than for men. In addition, the theory of personal control also predicts that women have a lower sense of personal control than men (Ross & Mirowsky, 2002). Sex was thus controlled in the analyses and was coded 0=male and 1=female.

Age.

Age has been shown to be associated with discrimination perceptions and health outcomes, as well as with the association between discrimination and health outcomes (Yip, Gee, & Takeuchi, 2008). Research on adolescents suggests that intensification in affiliative need, along with negative events that have interpersonal consequences, may help explain the emergence of depression during adolescence (Cyranowski, Frank, Young, & Shear, 2000). Thus, emotional support as a source of vulnerability appears even more pertinent for younger populations and those who demonstrate this greater need for affiliation. As such, age, used as a continuous variable, was included as a control variable.

Marital status.

Marital status has been linked to differences in mental health outcomes (e.g., Barrett, 2000; Simon & Marcussen, 1999; Wade & Pevalin, 2004; Williams, Takeuchi, & Adair, 1992). It has also been linked to differences in the need for and receipt of social support (e.g., Cairney, Boyle, Offord, & Racine, 2003; Dehle, Larsen, & Landers, 2001;

Thuen & Eikeland, 1998). Marital status was thus included as a control variable. Using married or partnered as the reference group, dummy variables were created for the separated/divorced/widowed category and for the never married category.

Nativity.

A growing body of research highlights that mental health outcomes are different for those born within the United States versus those born outside the United States (e.g., Finch, Kolody, & Vega, 2000; Gee, Ryan, Laflamme, & Holt, 2006; Kuo, 1995; Leu et al., 2008). Because the majority of the sample is foreign-born (see Table 3.1), the analyses control for nativity. Nativity is coded 1 for the foreign born and 0 for those born in the United States.

Non-Hispanic Black Caribbean ethnic sub-group.

Preliminary research suggests that Haitians and West Indians report different levels of racial awareness and discrimination (Biafora, Taylor, Warheit, Zimmerman, & Vega, 1993). The two ethnic sub-groups also have different histories of migration and migration trajectories in their journey to the United States (Catanese, 1999; Fouron, 1987; Kasinitz, 2001). This may, over time, impact the formation and maintenance of family and other social support networks (Kretsedemas, 2004). The flight from persecution and economic hardship that motivates a substantial proportion of Haitians to enter the United States suggests that they, similar to other displaced ethnic groups, might report poorer mental health in the short term after their arrival in the United States (Portes & Stepick, 1985; Stepick & Portes, 1986). Ethnic sub-group is thus controlled in the following analyses, with a dummy variable created for Haitians.

Residential location of immediate family members.

The probability of receiving any help or support from family members likely increases with greater geographical proximity to those family members. Because a large proportion of the sample is foreign born, and consequently not likely to be living to be close to their immediate family members, analyses control for this variable. The majority of family members living in the same state as the respondent serves as the reference group. Two dummy variables were created to represent the group of respondents whose immediate family members mostly reside in another United States state and the group of respondents whose family members live outside the United States.

Analyses

Data preparation.

Examinations of the patterns of missing data for the indicators that comprised the key variables were conducted. For all variables, there were a maximum of two respondents missing data for all the indicators that comprised the scales. Regression analyses were conducted restricting the sample to cases that were not missing data on each of the predictors in the equation. The sample size thus varies slightly depending on the set of analyses being conducted, with the smallest sample size being 522 (for the analyses assessing social support as a moderator) and the largest sample size being 558 (for the analyses assessing mastery as a mediator).

All continuous predictor measures (subtle discrimination, severe discrimination, closeness to ethnic group and closeness to racial group) were mean-centered (that is, each continuous variable was subtracted by the overall sample mean of that variable; thus the

intercept represented the predicted psychological distress for the “average” person in the sample). This reduces multicollinearity and facilitates the interpretation of the intercept if interactions effects are detected (Aiken & West, 1991).

Analyses took sample design effects into account by using the *svy* commands of Stata SE 10.1, which allows for estimation of standard errors in the presence of stratification and clustering. Actual numbers are reported for sample sizes, while weighted data are used in the analyses. Weighted and unweighted means and proportions with accompanying estimates of standard errors are shown in Table 2.2.

Focal analyses.

Following this, multiple linear regression was used to adjust for covariates. A series of multiple linear regression analyses were conducted to evaluate a) the competing models of the impact of personal control, and b) the competing models of the impact of social support, in the association between discrimination and psychological distress. Analyses were conducted separately for the two types of discrimination because these factors are both theoretically and empirically distinct (Guyll et al., 2001; Noh, Kaspar, & Wickrama, 2007). Similarly, analyses were conducted separately for the two types of social support because prior research underscores their theoretical and empirical distinctiveness (Turner, 1983; Turner, Frankel, & Levin, 1983).

For examinations of a moderating effect of a variable to proceed, there needs to be a significant relation between the independent variable and the outcome variable. This is particularly the case in stress research. Before any analyses of the moderating impact of a variable are undertaken, a significant relation between the strains and the health

outcome must be established (Cohen & Wills, 1985). In all moderation analyses these conditions were first examined.

Stress research also suggests that tests of the main and buffering effects of social support can only be conducted if there is no overlapping of the measures that assess strains and those that assess social support. This is because confounding of these measures can lead to overestimations of the buffering role that social support plays (Thoits, 1982). In the analyses investigating social support as a moderator of the impact of discrimination on distress, this condition was also examined.

For tests of the mastery as moderator model, the impact of the interaction between mastery and subtle discrimination and of the interaction between mastery and severe discrimination on psychological distress were tested. Similarly for tests of the social support as moderator model, the impact that the interaction between emotional support and each type of discrimination, and between instrumental support and each type of discrimination, had on psychological distress were tested using the mean centered variables.

For tests of the mediator models, in addition to theoretical plausibility, four key statistical criteria must be met before testing hypotheses (Baron & Kenny, 1986; Holmbeck, 1997, 2002; Kenny, Kashy, & Bolger, 1998). First, after accounting for controls, a relationship between the predictor (discrimination) and the outcome (psychological distress) needs to be established. Second, a relationship between the predictor and each mediator needs to be established. Third, a relationship between the mediator (mastery, or emotional support, and instrumental support) and the outcome needs to be established. Fourth, after controlling for the effects of the mediator on the

outcome, the relationship between the predictor and the outcome should be significantly reduced, preferably to the point of a zero effect (Baron & Kenny, 1986; Holmbeck, 1997, 2002). A reduced, albeit non-zero, result in the fourth condition indicates partial mediation. Statisticians and quantitative research methodologists largely agree that the first condition does not necessarily have to be met for mediation analyses to proceed (Kenny et al., 1998). However, the second and third conditions must be met to investigate mediation effects (Kenny et al., 1998). Each of these criteria was examined to determine whether to proceed with mediation analyses and the results are presented in relevant sections. When mediation effects were found, tests using quadratic and cubic mediator variable terms were conducted to determine whether the function was linear or curvilinear (Eckenrode, Rowe, Laird, & Brathwaite, 1995; James & Brett, 1984).

Results

Descriptive Information

Analyses were conducted in several steps. Prior to addressing the central research questions, descriptive statistics were obtained on the sample for the study measures (see Table 3.1). The majority of the sample was female, married, West Indian, and foreign-born. The majority of the sample also reported that most of their immediate family members lived in the same state in which they lived. The weighted data suggested that the average respondent in the sample did meet criteria for being clinically distressed. The data also intimated that reports of discrimination were relatively low, reports of emotional support and mastery relatively high, and reports of instrumental support neither low nor high. Correlations among study variables and covariates are shown in Table 3.2 and are described in pertinent sections below.

Mastery as a Moderator of Discrimination and Distress

Correlation results (see Table 3.2) suggest that the two pre-conditions to assess the role of mastery as a moderator in the relationship between discrimination and psychological distress are met. First, there is a significant relationship between discrimination (the predictor) and psychological distress (the outcome). There were significant positive correlations between subtle discrimination and psychological distress ($r = .38, p < .10$), and between severe discrimination and psychological distress ($r = .39, p < .05$). Greater subtle discrimination and severe discrimination were associated with higher levels of psychological distress. These correlations indicated that the measurement and range of scores on these variables were adequate. Second, the discrimination measures and the mastery measure were not highly correlated suggesting that the variables were not confounded (subtle discrimination $r = -.25, p > .10$; severe discrimination $r = -.18, p > .10$).

According to the mastery as moderator model, discrimination strains relate to psychological distress differently depending on the level of mastery. In order to test this hypothesis, two sets of multiple regression equations were generated. The specific prediction was that high mastery would buffer an individual from the deleterious effects of discrimination, while low mastery would exacerbate these discrimination effects. In a hierarchical fashion, first the socio-demographic covariates were entered, then the discrimination and mastery main effects, and finally the interaction of discrimination and mastery.

Neither the interaction of mastery with subtle discrimination ($b = -.05, SE = .05, p > .10$), nor the interaction of mastery with severe discrimination ($b = -.06, SE = .06, p >$

.10), was significant after accounting for control variables. In both cases, however, the main effects of discrimination (subtle $b = .08$, $SE = .02$, $p < .01$; severe $b = .10$, $SE = .03$, $p < .01$) and mastery (in equation with subtle $b = -.22$, $SE = .04$, $p < .001$; in equation with severe $b = -.24$, $SE = .04$, $p < .001$) were highly significant (see Table 3.3). These results suggest that mastery produces less distress and acts as an independent distress deterrent. These positive effects of mastery were neither in response to, or specific to, the presence of the chronic strain of discrimination.

Mastery as a Mediator of Discrimination and Distress

For subtle discrimination, all the prerequisites for testing mediation were met (see Figure 3.3). Three separate regression equations were performed to determine whether the data met the criteria for a mediation effect (Baron & Kenny, 1986; Holmbeck, 1997, 2002; Kenny et al., 1998). In each of the equations, the covariates were included. In the first of the equations, mastery was regressed on subtle discrimination and the relationship was found to be significant ($b = -.15$, $SE = .05$, $p < .05$). This met one of the two essential conditions for establishing mediation (Kenny et al., 1998). In the second equation, psychological distress was regressed onto subtle discrimination and found to be significant ($b = .12$, $SE = .04$, $p < .01$). In the third equation, psychological distress was regressed onto subtle discrimination, while controlling for the effect of mastery. In this third equation, subtle discrimination was less highly associated with psychological distress than was the case in the second equation ($b = .08$, $SE = .03$, $p < .01$) (See Figure 3.3). The association between subtle discrimination and psychological distress, although significantly reduced, highlighted that the unique variance that subtle discrimination contributed to psychological distress remained significant (semi-partial $R^2 = .04$, $p <$

.001). As recommended (Baron & Kenny, 1986; Holmbeck, 1997, 2002), the Sobel test was used to determine if the reduction was statistically significant. Mastery significantly mediated the relationship between subtle discrimination and psychological distress in this sample, $z' = 2.51, p = .01$. Regression analyses with quadratic and cubic mastery terms were then estimated to determine whether the linear relationship among the variables shown in Figure 3.3 was the best representation of the data. Neither term was significant thus providing support for the depicted linear representation. In short, mastery partially mediated the impact of subtle discrimination on psychological distress.

For severe discrimination, the data did not meet one of the main prerequisites for mediation (Kenny et al., 1998). Specifically, although there was a relationship between severe discrimination and psychological distress ($b = .13, SE = .05, p < .05$) and between mastery and psychological distress ($b = -.25, SE = .05, p < .001$), there was no relationship between severe discrimination and mastery ($b = -.09, SE = .06, p > .10$). Mediator analyses were thus not performed.

Social Support Main Effects versus Moderator Effects

Correlation results (see Table 3.2) suggested that the two pre-conditions for conducting research to assess the role of social support as a moderator in the relationship between discrimination and psychological distress were met. First, there was a significant relationship between discrimination (the predictor) and psychological distress (the outcome), indicating that the measurement and range of scores on these variables were adequate. The matrix in Table 3.2 showed significant positive correlations between subtle discrimination and psychological distress ($r = .38, p < .10$), and between severe discrimination and psychological distress ($r = .39, p < .05$). Greater subtle discrimination

and severe discrimination were associated with higher levels of psychological distress. Second, the correlations between the discrimination measures and social support measures were very weak and statistically insignificant, suggesting that the variables were not confounded (subtle discrimination and emotional support $r = -.06, p > .10$; severe discrimination and emotional support $r = -.09, p > .10$; subtle discrimination and instrumental support $r = .01, p > .10$; severe discrimination and instrumental support $r = .01, p > .10$).

According to the support moderator model, discrimination strains relate to psychological distress differently depending on the level of social support. In order to test this hypothesis, four sets of multiple regression equations were generated to assess whether emotional support and instrumental support buffered or exacerbated the impact of subtle and severe discrimination. In a hierarchical fashion, first the socio-demographic covariates were entered, then the discrimination and social support main effects, and finally the interaction of discrimination and social support.

Tests of the interaction of model of emotional support with subtle discrimination provided support only for the main effects of subtle discrimination and emotional support. After the first step, which included just the covariates, a second model was examined. In addition to the covariates, this model included just the main effects of subtle discrimination and emotional support. The main effects only model explained 29.71 percent of the variance in psychological distress, and provided an excellent fit for the data as indicated by the results of multi-parameter Wald tests of significance ($F(2, 538) = 23.57, p < .001$). Both subtle discrimination and emotional support were significant in the ways anticipated. Every unit increase in the centered subtle discrimination variable

increased distress by 11.63 percent on average ($p < .01$). Every unit increase in the centered emotional support variable decreased distress by 8.61 percent on average ($p < .10$). Once the interaction term was added, the model explained 32.84 percent of the variance, 3.13 percent more than the previous model with just the main effects. Although the interaction regression coefficient was significant ($b = -.10$, $SE = .04$, $p < .05$), the unique variance contributed by the interaction was not statistically significant (semi-partial $R^2 = .00$, $p > .10$; $F(1, 537) = 1.25$, $p > .10$). This suggested that the interaction effect between emotional support and subtle discrimination was not statistically significant. In short, emotional support acted independently as a hindrance to distress. The non-significant results from tests of its interaction with discrimination strains suggest that it is likely that these positive effects occur even when there is no stress from chronic subtle discrimination.

Tests of the interaction of model of emotional support with severe discrimination similarly also provided support only for the main effects model of severe discrimination and emotional support. The model with the main effects only explained 28.03 percent of the variance in psychological distress. Multi-parameter Wald tests of significance indicated that it provided an excellent fit to the data ($F(2, 541) = 23.58$, $p < .001$). Again, both severe discrimination and emotional support were significant in the ways anticipated. Every unit increase in the centered severe discrimination variable increased distress by 13.88 percent on average ($p < .01$). Every unit increase in the centered emotional support variable decreased distress by 8.61 percent on average ($p < .10$). Once the interaction term was added, the model explained 29.92 percent of the variance, 1.89 percent more than the previous model with just the main effects. Similar to the results for

subtle discrimination described in the preceding paragraph, the regression coefficient of the interaction was significant ($b = -.09$, $SE = .05$, $p < .10$), but the unique variance contributed by the interaction was not statistically significant (semi-partial $R^2 = .00$, $p > .10$; $F(1, 540) = .43$, $p > .10$). This suggested that the interaction effect between emotional support and severe discrimination was not statistically significant. Emotional support thus appears to act as an independent distress deterring resource.

There was no support for an interaction model of discrimination (either type) and instrumental support. There was also no support for a main effects model of instrumental support. The discrimination main effects (subtle and severe) were the only effects that reached statistical significance. The regression coefficient for subtle discrimination in final of the three models testing moderator effects indicated that every unit increase in the centered subtle discrimination variable increased distress by 12.75 percent on average. Similarly, the regression coefficient for severe discrimination in its third and final model communicated that every unit increase in the centered severe discrimination variable increased distress by 13.88 percent on average. These findings suggest that instrumental support acted in neither a moderating capacity with chronic discrimination, nor as an independent distress deterrent.

In summary, the analyses testing the main and moderating effects of social support provide evidence that emotional support acts independently to reduce distress. The frequency of receiving emotional support does not appear to occur in response to chronic discrimination, nor only in the context of chronic discrimination. Instrumental support, on the other hand, does not demonstrate main effects, nor does it seem that

chronic discrimination relates to psychological distress differently depending on the level of instrumental support.

Social Support as a Mediator

The data did not meet one of the main prerequisites for mediation (Kenny et al., 1998) to assess whether any of the social support variables mediated the impact of either type of discrimination on psychological distress. In the case of emotional support and either type of discrimination, although there was a relationship between discrimination and psychological distress (subtle discrimination $b = .12$, $SE = .04$, $p < .01$; severe discrimination $b = .13$, $SE = .04$, $p < .05$) and between emotional support (the mediator) and psychological distress (the outcome) (for both subtle and severe discrimination $b = -.09$, $SE = .05$, $p < .10$), there was no relationship between discrimination and emotional support (subtle discrimination $b = -.02$, $SE = .06$, $p > .10$; severe discrimination $b = -.03$, $SE = .07$, $p > .10$). Mediator analyses were thus not performed.

In the case of instrumental support and discrimination, the data failed to meet the two critical conditions for assessing mediation. There was no relationship between instrumental support and psychological distress (subtle discrimination $b = -.03$, $SE = .03$, $p > .10$; severe discrimination $b = -.04$, $SE = .04$, $p > .10$). There was also no statistically significant relationship between discrimination and instrumental support (subtle discrimination $b = -.03$, $SE = .08$, $p > .10$; severe discrimination $b = -.03$, $SE = .07$, $p > .10$). Analyses investigating the instrumental support as mediator model were thus not performed.

Discussion

The two primary goals of this study were a) to test different models of the effects of personal control in the relationship between the chronic strain of discrimination and psychological distress, and b) to test different models of the effects of social support in the relationship between the chronic strain of discrimination and psychological distress. These goals were addressed using mediator and moderator analyses of the impact of the third variables (mastery for the first goal and emotional and instrumental support for the second goal).

Does Personal Control Impact the Association Between Discrimination and Distress Through Mediator or Moderator Mechanisms?

The present study found support for a mediation model of the impact of personal control in the relationship between chronic discrimination and psychological distress. This finding is consistent with theoretical conceptualizations that suggest that chronic strain (e.g., Lincoln, 2007), and specifically the chronic strain of discrimination (e.g., Moradi & Hasan, 2004; Moradi & Risco, 2006) exerts a negative impact on the self-concept and that this in turn depletes mental health (Branscombe & Ellemers, 1998). It is also consistent with findings in prior empirical research on other immigrant and immigrant ancestry populations in the United States such as persons of Arabic and Latino ancestry (Moradi & Hasan, 2004; Moradi & Risco, 2006). The present study's results echo those in these empirical investigations that have found that personal control, operationalized as mastery, partially mediates the impact of perceived discrimination on poor mental health outcomes such as depressive symptoms (Moradi & Hasan, 2004; Moradi & Risco, 2006).

It is worth noting that, with the present sample, mastery operated as a mediator only in the context of subtle discrimination; mastery did not serve as an intervening explanatory variable in the context of severe discrimination. This finding adds to a small body of empirical data that document that subtle and severe discrimination impact mental health through distinct mechanisms. Recent research on Korean immigrant populations suggested, for example, that subtle discrimination increased depressive symptoms via cognitive appraisal mechanisms, while severe discrimination impacted mental health directly (Noh et al., 2007). These types of results seem to suggest that subtle and more overt discrimination are quite distinct constructs, especially for immigrant populations, and that it is the chronic burden of constantly discerning the nature of ambiguous seemingly discriminatory interpersonal interactions that wears away at these persons' self-concept. This is quite understandable since the immigrant's burden is often quite complex, involving race or ancestry but also the status of being an immigrant. This status brings with it exclusion and a lack of access to services and resources that are restricted to native or naturalized citizens of United States and green-card holders. A longitudinal examination the contexts of and pathways through which these types of discrimination impacts the health of these persons should be a key mandate for future research.

Mastery also exerted strong and statistically significant direct effects on psychological distress. Specifically, higher levels of mastery were related to decreased distress. This seems to suggest that mastery serves as a generalized mental health maintenance resource. This perspective is supported by prior research that finds that the greater an individual's sense of control or mastery, the better his/her mental health (e.g., Mirowsky & Ross, 1990; Turner, Lloyd, & Roszell, 1999; Turner & Roszell, 1994). On

the other hand, when interaction models were tested, there were no differences in the relationship between discrimination and distress depending on the level of personal control. There are a few possible reasons for this null finding of moderation effects. One is that an individual's general sense of control or mastery might be a weaker moderator than might domain specific mastery. Applied to the present study, it is possible that a measure of control or mastery in the specific domain of discrimination might have yielded a significant moderating effect. Unfortunately, because of the constraints involved in large scale data collection, this type of instrument was not included in the dataset used for this study.

Does Social Support Impact the Association Between Discrimination and Distress Through Mediator or Moderator Mechanisms?

The present study did not find support for either a mediation or moderation model of the impact of social support in the relationship between perceived chronic discrimination and psychological distress. The data did not meet the statistical prerequisites for tests of mediation. Although social support has been found to mediate the impact that other types of chronic strains, such as financial strains (Chou et al., 2004; Lincoln et al., 2005), taking care of chronically ill or impaired relatives (Quittner et al., 1990), and the deterioration of competence in the elderly (Chou, 2005), have on mental health, there was no such relationship found for chronic discrimination. These results suggest that the impact of chronic discrimination on mental health is not carried through social support as it is for other chronic strains. One possible explanation for this apparent inconsistency in social support's mediator effects is that discrimination might not be as likely to increase general emotional support as it might discrimination specific support.

For an individual who experiences chronic discrimination, general support from family members and close others is likely to be neither eroded nor increased. On the other hand, emotional and instrumental support catered to the chronic nature of the discrimination strain might likely increase and in so doing be related to better mental health outcomes. Conversely, such aid might decrease among some sub-groups of persons who, for either personality or contextual reasons, do not seek out such support. Unfortunately, such measures were not available in the present dataset and so those relationships could not be examined. One possible direction for future research would thus involve examining whether more discrimination-specific forms of support act as mediators in the relationship between discrimination and distress. In short, the present study's results suggest that social support may not be a mechanism involved in the association between discrimination stressors and mental health.

When moderation was examined, there was no evidence of differences in the relationship between discrimination and distress depending upon levels of either emotional support or instrumental support. Instead, findings suggested that emotional support, similarly to mastery, directly decreased distress. The findings of the present study suggest that more attention can be focused on the main effects model discussed earlier discussed in the context of its debate with the buffering effects model. Although that debate fails to capture the complexity of how too much or too little support can also be harmful to mental health and also neglects resource mobilization models of social support's buffering effects, it highlighted the import of social support in and of itself. The main effect finding for emotional support that the present study found using hierarchical regression thus suggests that this type of support offers protection when chronic

discrimination is present over and above the protection it offers when such strains do not exist (Thoits, 1983).

Another possible explanation for the null moderation effects finding lies in the demographic composition of the present sample. The largely immigrant sample might experience discrimination impacts on mental health directly rather than through a decrease in support provided by family networks. This is because their family networks might independently serve as a resource or strain. For new immigrants with family networks in the United States already in place, such support can be a preventative force against poor mental health. On the other hand, frequency of social support can in itself be a hindrance to good mental health. In terms of emotional support regardless of the frequency with which such individuals receive messages that they are loved and cared for, and have family members express interest and concern for them and listen to them talk about their problems, such communications with family members can likely include strong, and sometimes unwelcome advice about what to do in the new context. Frequent instrumental support can also be a reminder of the individual's "unsettled" life in the United States and of obligations to repay such help by assisting family members in their country of origin. Simply put, receiving support frequently—even at what the literature suggests are optimal levels—might not solely involve positive relationship aspects.

Conclusions, Limitations, and Future Directions

The current study contributes to burgeoning research on the role that social support plays in the mental health of ethnic minorities confronted with the chronic strain of discrimination (Brondolo et al., 2009; Fischer & Shaw, 1999; Noh & Kaspar, 2003; Sanders Thompson, 2006). It also adds to another developing area of studies that assess

personal control as a mechanism via which discrimination exerts its harmful effects (Moradi & Hasan, 2004; Moradi & Risco, 2006). Nevertheless, the present study has some limitations.

First, the items in the study's measure of instrumental support may not have captured the specific ways in which instrumental support is sought and received in the context of discrimination strains. The general nature of the questions may not have matched the specificity of the type of tangible help (money, time, services) that experiences of discrimination elicit. As highlighted in prior research (Gee, Chen et al., 2006), instrumental support in the context of discrimination likely involves help with resources to advocate against discrimination and other help once discrimination related illnesses have occurred. The present study's measure of instrumental support, however, did not ask these types of instrumental support questions that are specific to the experience of discrimination. Although other studies have found significant interaction effects between discrimination and general instrumental support (versus specifically in response to discrimination), these effects were found for physical health outcomes. In addition, the measure in those studies tended to have several more items in the scale that might have created more sensitive measures of instrumental support by providing more information on the structure and meaning of instrumental support for the populations being studied. Future investigations assessing the role that instrumental support plays in the relationship between discrimination and mental health outcomes should therefore be careful to match the instrumental support scale's items with the type of instrumental support that experiences of discrimination likely elicit. They should also be careful to

ensure that the instrumental support items capture the types of help that would likely be requested among the ethnic minority or immigrant population being studied.

Second, the data are cross-sectional. The directions of the effects specified for the models assessing the role that personal control plays as a third variable in the relationship between chronic strains and mental health are supported both by theoretical conceptualizations (e.g., Branscombe & Ellemers, 1998), and by longitudinal (e.g., Pearlin et al., 1981) and experimental research (e.g., Ruggiero & Taylor, 1995). Similarly, the directions of effects specified for the models assessing the role that social support plays are also in line with theoretical conceptualizations (e.g., Berkman, 1995; Berkman & Glass, 2000), and with longitudinal (e.g., Aneshensel & Frerichs, 1982; Norris & Kaniasty, 1996; Pearlin et al., 1981) and experimental (e.g., Tardy, 1992) research. Nevertheless, the current study's data can only be interpreted in terms of its correlational nature and the results cannot be considered to reflect causal relationships among the constructs.

Third, the study did not assess the possibility of threshold effects in the tested moderators (Baron & Kenny, 1986). Perceived discrimination is sometimes conceptualized as a dichotomous variable because of the bimodal distribution of perceiving such experiences (moderate to high versus none to low levels of discrimination) (Pérez, Fortuna, & Alegría, 2008). In these cases, at some critical social support level, for example, the impact of moderate to high discrimination might be more potent than none to low experiences. Baron and Kenny (1986) suggest that the moderator be dichotomized at the point where the step is supposed to occur to test moderation effects in these cases. However, they warn that such categorization of the variable should

not be post hoc; the threshold level must be specified before hand. Unfortunately, as bountiful as stress process research is, the theories about third variables are not yet precise enough to ascertain a priori when exactly that step might occur (for examples that discuss thresholds post hoc see, Krause, 1987, 1995). Although the present study used the existing methodological frameworks to assess linear functions in tests of third variable mediation effects, this was not done for the tests of possible moderation effects. Future research should develop stronger theoretical specification about when exactly third variables such as social support and mastery might lead to differential associations between strains and mental health outcomes. This will help in the a priori formulation and testing of hypotheses of non-linear effects.

The fourth limitation relates to the third. A simplicity and parsimony of methodologies is a necessary first step for generalizing existing research to a new population. As such the present study's analytic approach was appropriate to the task. However, the analytic approach used to examine the effects of the third variables in the stress process did not capture the full complexity with which these variables might interact in the stress process. In separate analyses of third variables involved in the stress process, the present study suggested that a decreased sense of personal control worsens the mental health of Black Caribbeans, while emotional support improves it. The present study did not assess the relationships between social support and personal control in the context of the stress process. Instead, it examined these factors as third variables in additive and multiplicative relationships with a specific strain and a specific health outcome. However, studies outside of the stress process framework have highlighted the complex relationships between social support and personal control (Bisconti &

Bergeman, 1999; Fiori, McIlvane, Brown, & Antonucci, 2006). Although this study adheres to the tradition of testing different models for each of the third variables in separate analyses (e.g., Chou et al., 2004; Creed & Bartrum, 2008; Pudrovska et al., 2005; Quittner et al., 1990; Wilks & Croom, 2008; Yarcheski & Mahon, 1999), future studies examining these variables using the stress process model would do well to explore possibilities of more complex relationships among the variables, including mediated moderation or moderated mediation (Edwards & Lambert, 2007; Little, Card, Bovaird, Preacher, & Crandall, 2007; Muller, Judd, & Yzerbyt, 2005; Preacher, Rucker, & Hayes, 2007). An example of a moderated mediation hypothesis using the present study's variables is that the indirect effect of chronic discrimination on distress through personal control will be moderated by emotional support perceptions.

One of the major tenets of the stress process is that particular combinations of vulnerability and protective factors produce poor health outcomes. This type of framework assumes complex relationships among variables such as social support and personal control. Although still in the stage of early development, there are promising methodologies, such as configurational techniques (Longest & Thoits, 2008, May) that can shed some light on these more complex relationships among variables involved in the stress process. Future stress process research examining the ways in which chronic discrimination impacts the health of ethnic minority and immigrant populations can certainly benefit by applying these types of methodologies. As highlighted earlier, discrimination strains elicit a multiplicity of negative reactions and coping strategies. These often do not operate independently of one another and so, in future research, should be treated with the complexity with which they exist.

In addition, some scholars contend that the current models of the role of personal control in the stress process reflect Western bias in favor of individualistic values and a lack of consideration for the inappropriateness of individual personal control in certain cultures (O'Connor & Shimizu, 2002; Sastry & Ross, 1998; Weisz et al., 1984a, 1984b). Although the current study attempted to avoid such a bias by assessing, in conceptually distinct models, the role of social support, it did not examine the possible weight of either construct by simultaneously including them in the tested models. Future research, particularly with immigrant populations, should undertake these types of investigations to determine whether personal control is indeed a third variable that is most appropriate for examinations of the stress process with ethnic groups native to the United States.

In conclusion, this study finds that emotional support and mastery act independently and directly to reduce psychological distress, a finding echoed in many other studies. The study's use of the first-ever national sample of Black Caribbeans in the United States helps augment the findings about the mediating role that mastery plays in the relationship between perceived discrimination and poor mental health among other immigrant and immigrant ancestry groups (Moradi & Hasan, 2004; Moradi & Risco, 2006). The current study extends the literature on the effects of social support in the context of discrimination by showing that, for the present sample, emotional support acted independently of discrimination strains and also reduced distress. In so doing, it adds to the few studies that assess social support as a moderator in the relationship between discrimination and mental health among racial/ethnic minorities. These studies fail to find moderating effects, finding instead main effects for social support (Fischer & Shaw, 1999; Noh & Kaspar, 2003; Sanders Thompson, 2006). Understanding the

relationship between discrimination and mental health using the stress process framework is still in its nascent stages. The investigation of a priori specified relationships, guided by more precisely developed theoretical models and the application of statistical methodologies that match such models and their hypotheses will undoubtedly lead to a fuller understanding of these issues.

Table 3.1 Descriptive Statistics of Study Variables

Characteristic	Unweighted (SE)	Weighted (SE)	Range
Distress, mean	9.12 (.16)	9.18 (.48)	6 – 28
Discrimination			
Subtle discrimination, mean	2.45 (.04)	2.55 (.14)	1 – 5.8
Severe discrimination, mean	1.88 (.03)	2.03 (.08)	1 – 6
Social Support			
Emotional support from family, mean	3.28 (.03)	3.33 (.05)	1 – 4
Instrumental support from family, mean	2.20 (.03)	2.21 (.09)	1 – 4
Mastery, mean	3.28 (.02)	3.32 (.06)	1.7 – 4
Socio-Demographic Controls			
Household income, mean	42, 905 (1, 611)	52, 715 (4, 891)	0 – 400, 000
Age, mean	41.65 (.66)	43.48 (1.55)	18 – 88
Sex, %			N/A
Male	33.85 (.02)	45.41 (.05)	
Female	66.15 (.02)	54.59 (.05)	
Marital status			N/A
Married	41.62 (.02)	47.56 (.04)	
Separated/divorced/widowed	22.80 (.02)	21.64 (.04)	
Never married	35.58 (.02)	30.79 (.03)	
Where most of immediate family live, %			N/A
In same state	57.14 (.02)	56.44 (.03)	
In another state	16.55 (.02)	18.35 (.04)	
Out of the United States	26.31 (.01)	25.21 (.04)	
Immigration factors			
Ethnic sub-group, %			N/A
West Indian	82.04 (.02)	87.67 (.02)	
Haitian	17.96 (.02)	12.33 (.02)	
Nativity, %			N/A
Born in the United States	30.22 (.02)	31.50 (.04)	
Born outside the United States	69.78 (.02)	68.50 (.04)	

Table 3.2 Weighted Correlations Among Study Variables for Total Sample

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Psychological distress	–	–.24	–.06	–.50*	.37†	.39*	–.18*	–.18	–.19†	–.05	.03	–.03	.28*	–.04	–.09
2	Emotional support		–	.44***	.14	–.05	–.09	–.03	.24*	–.01	–.03	.06	.08	.04	–.03	.06
3	Instrumental support			–	.04	.01	.01	–.12	.11	–.00	–.15	.10	.02	.27**	.04	–.09
4	Mastery				–	–.25†	–.18	–.04	.17	.19	.01	.02	–.19	–.09	.10	.12
5	Subtle discrimination					–	.77***	–.05	–.04	.04	–.14†	–.01	.04	.11	–.03	–.11
6	Severe discrimination						–	–.12	–.17	.02	–.17*	–.08	.02	.11	.01	–.17
7	Age							–	–.01	.05	.06	–.20*	.32**	–.55***	.07	.02
8	Female								–	–.25*	.04	.10†	.27**	–.01	.04	.10
9	Household income									–	–.10	–.08	–.26***	–.12	–.08	.00
10	Foreign-born										–	–.06	–.03	–.24**	–.05	.38***
11	Haitian											–	–.04	.17†	–.06	–.07
12	Separated/divorced/widowed												–	–.36***	.12†	–.09
13	Never married													–	–.07	–.17*
14	Immediate family lives in another state														–	–.23***
15	Immediate family lives outside the United States															–

Note. † < .10. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 3.3 Regression of Psychological Distress on Controls and the Interaction of Discrimination and Mastery

	Step	R ²	F test of change in R ²	β ^a	SE
Subtle Discrimination					
1	Age			-.00	.00
	Female			-.10 [†]	.05
	Household income			-.00*	.00
	Foreign-born			-.07	.06
	Haitian			.04	.04
	Separated/divorced/Widowed			.03	.09
	Never Married			.13**	.04
	Immediate family other state			.05	.06
	Immediate family outside U.S.	.18	3.96	.04	.05
2	Subtle discrimination			.08**	.02
	Mastery	.38	18.95	-.22***	.04
3	Subtle discrimination X Mastery	.39	23.12	-.05	.05
Severe Discrimination					
1	Age			-.00	.00
	Female			-.06	.05
	Household income			-.00*	.00
	Foreign-born			-.06	.07
	Haitian			.06	.04
	Separated/divorced/Widowed			.01	.08
	Never Married			.12**	.04
	Immediate family other state			.07	.06
	Immediate family outside U.S.	.18	3.96	.06	.05
2	Severe discrimination			.10**	.03
	Mastery	.39	24.20	-.24***	.04
3	Severe discrimination X Mastery	.39	26.78	-.06	.06

Note. † < .10. * $p < .05$. ** $p < .01$. *** $p < .001$

^a Beta weights are from the final step of the regression equations and represent the unique contribution of each variable.

Table 3.4 Regression of Psychological Distress on Controls and the Interaction of Discrimination (Subtle and Severe) and Emotional Support

	Step	R ²	F test of change in R ²	β ^a	SE
Subtle Discrimination					
1	Age			-.00	.00
	Female			-.13**	.04
	Household income			-.00*	.00
	Foreign-born			-.04	.06
	Haitian			.04	.05
	Separated/divorced/Widowed			.12	.08
	Never Married			.18***	.04
	Immediate family other state			-.01	.06
	Immediate family outside U.S.	.27	6.75	.02	.05
2	Subtle discrimination			.12***	.03
	Emotional support	.30	5.45	-.06	.04
3	Subtle discrimination X Emotional support	.33	6.17	-.10*	.04
Severe Discrimination					
1	Age			-.00	.00
	Female			-.09 [†]	.05
	Household income			-.00**	.00
	Foreign-born			-.02	.07
	Haitian			.06	.05
	Separated/divorced/Widowed			.11	.07
	Never Married			.20***	.05
	Immediate family other state			-.01	.07
	Immediate family outside U.S.	.18	3.91	.01	.05
2	Severe discrimination			.13**	.04
	Emotional support	.28	4.41	-.07	.04
3	Severe discrimination X Emotional support	.30	4.56	-.09 [†]	.05

Note. [†] < .10. * $p < .05$. ** $p < .01$. *** $p < .001$

^a Beta weights are from the final step of the regression equations and represent the unique contribution of each variable.

Table 3.5 Regression of Psychological Distress on Controls and the Interaction of Discrimination (Subtle and Severe) and Instrumental Support

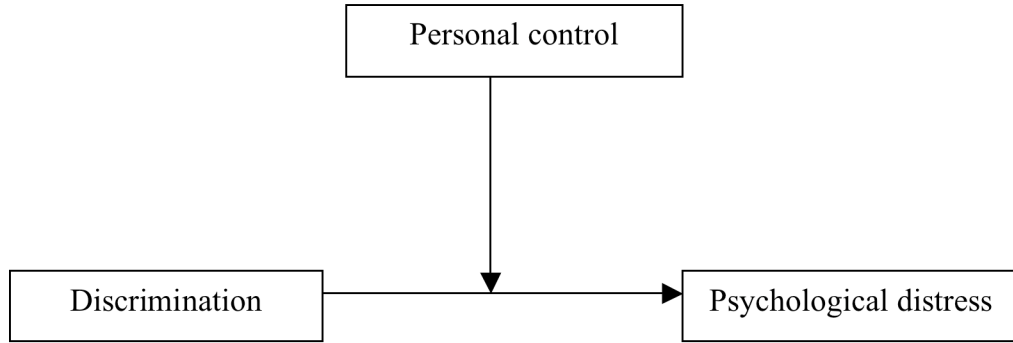
	Step	R ²	F test of change in R ²	β ^a	SE
Subtle Discrimination					
1	Age			-.00	.00
	Female			-.17**	.05
	Household income			-.00*	.00
	Foreign-born			-.06	.07
	Haitian			.02	.06
	Separated/divorced/Widowed			.10	.09
	Never Married			.17**	.05
	Immediate family other state			-.01	.07
	Immediate family outside U.S.	.17	3.75	.03	.07
2	Subtle discrimination			.12**	.03
	Instrumental support	.27	4.86	-.02	.03
3	Subtle discrimination X Instrumental support	.29	5.45	-.07 [†]	.03
Severe Discrimination					
1	Age			-.00	.00
	Female			-.13*	.05
	Household income			-.00*	.00
	Foreign-born			-.05	.08
	Haitian			.04	.06
	Separated/divorced/Widowed			.10	.09
	Never Married			.20**	.06
	Immediate family other state			-.02	.08
	Immediate family outside U.S.	.16	3.68	.04	.07
2	Severe discrimination			.13**	.04
	Instrumental support	.26	4.96	-.02	.03
3	Severe discrimination X Instrumental support	.27	5.58	-.08 [†]	.05

Note. [†] < .10. * $p < .05$. ** $p < .01$. *** $p < .001$

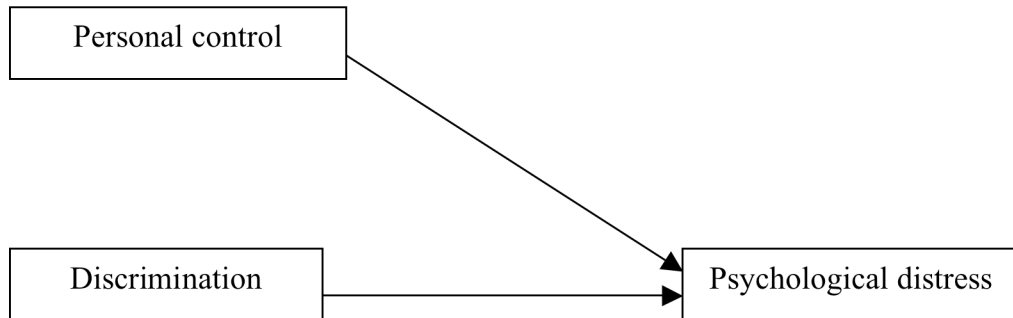
^a Beta weights are from the final step of the regression equations and represent the unique contribution of each variable.

Figure 3.1 Schematic diagram of competing models of the role of personal control in the relationship between discrimination and psychological distress: (a) the moderating model; (b) the main effect model and; (c) the mediating model.

(a)



(b)



(c)

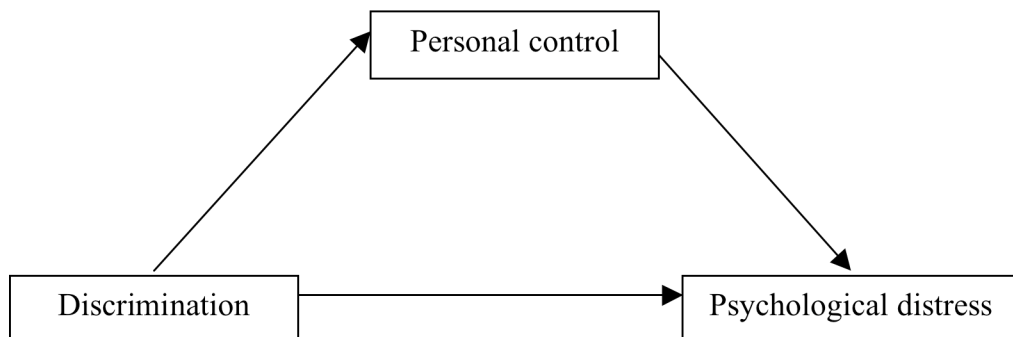


Figure 3.2 Schematic diagram of competing models on the role of social support in the relationship between discrimination and distress: (a) the moderating model; (b) the main effect model; and (c) the mediating model.

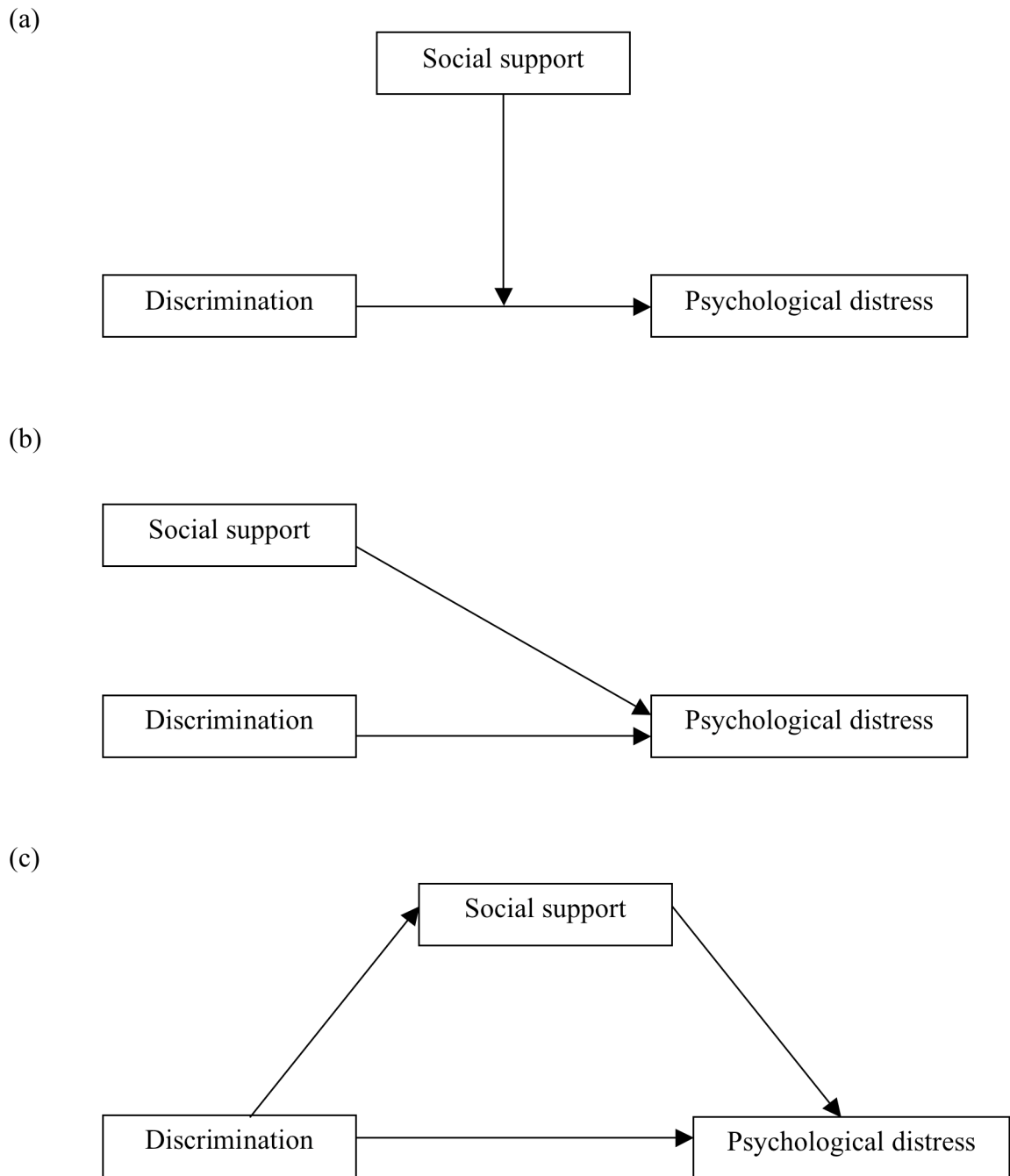
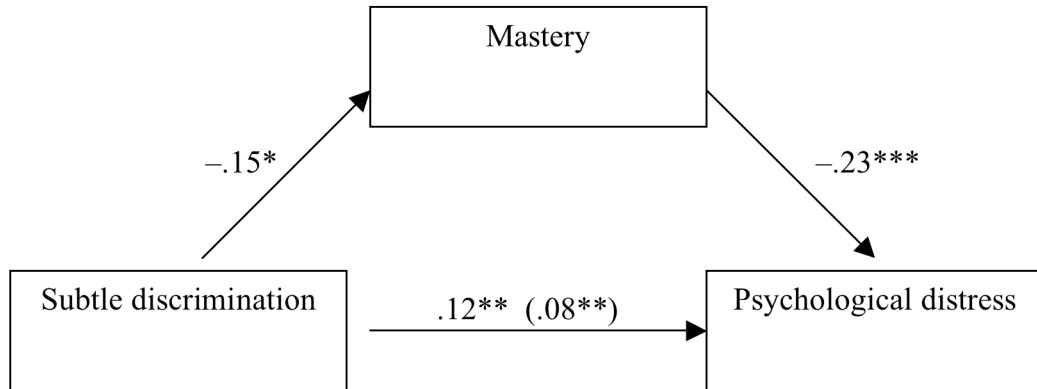


Figure 3.3 Regression coefficients for the relationship between subtle discrimination and psychological distress as mediated by mastery.



Note. Model controlled for the effects of sex, age, household income, nativity, marital status, and immediate family residence. The regression coefficient between subtle discrimination and psychological distress controlling for mastery is in parentheses.

* $p < .05$. ** $p < .01$. *** $p < .001$

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CHAPTER FOUR

FAMILY RELATIONSHIPS, SOCIAL ROLES, AND DISTRESS: AN EXAMINATION OF BLACK CARIBBEANS IN THE UNITED STATES

Abstract

A series of multiple linear regression models were used to explore the links between sex, family relationships, social roles, and distress. First, sex was investigated as a potential moderator of the association between intergenerational relationship perceptions and psychological distress. Men's relationships with an adult child, father, and mother were associated with their reports of psychological distress. However, these relationships were not associated with women's distress levels. Second, the study examined how multiple social roles (parent, son/daughter, worker, and spouse) moderated the associations between intergenerational family relationships and psychological distress and explored sex differences in these associations. Both a greater number of roles and a lesser number of roles were associated with distress levels, functioning as both vulnerability and protective factors for distress. However whether one or both of these were more predictive of distress depended on the relationship assessed. Third, additional analyses were conducted to determine whether sex moderated these associations. These analyses revealed similar variations. The findings suggest that sex differences in the associations between the family relationships and psychological distress reflect characteristics of the specific relationship assessed. They also nuance the

study of multiple social roles by focusing on a largely immigrant population—a population for which social roles are quite likely malleable.

Literature Review

Very little research examines the similarities and differences between women and men in the mental health ramifications of family relationships other than those with a spouse. In research on ethnic minority and immigrant populations, although these other family relationships are explored to a greater extent, studies tend to focus on relationships between adolescents or younger children and their parents (e.g., Fuligni, Yip, & Tseng, 2002). The present addresses these two gaps in the literature by using a sample of non-Hispanic Black Caribbean adults in the United States to analyze the associations between intergenerational family relationships and psychological distress. This is achieved by exploring three research questions. First, is the association between intergenerational family relationships and psychological distress different for women and men? Second, do social roles act as a moderator of the association between intergenerational family relationships and psychological distress? Third, is the effect of social roles as a moderator different for women and men?

Women's and Men's Family Relationships and Their Mental Health

Although social relationships, especially close relationships are strongly associated with mental health in general, they appear to affect women and men differently (Kawachi & Berkman, 2001; Sarason, Sarason, & Gurung, 2001). Marriage, for example, serves more of a protective function in men's mental health than it does in women's (McGrath, Keita, Strickland, & Russo, 1990). There is also evidence that specific close relationships have distinct effects depending on the individual's sex. For

example, when cohabitation and marriage are compared, cohabitation seems to benefit men's health more than women's, while marriage enhances women's well-being more than men's (Willitts, Benzeval, & Stansfeld, 2004).

Social role theory (Eagly, 1987; Eagly & Mitchell, 2004) provides a possible explanation of why relationships with specific others affect the mental health and psychological well being of men and women in dissimilar ways. Although it has not been formally applied to the study of sex differences in the associations between social relationships and mental health, the main tenets of the theory have much to offer this area of inquiry. Social role theory suggests that a complex interaction of physical sex characteristics, and cultural, socioeconomic, and ecological factors produce a largely sex-based division of labor. This differential placement of the sexes in social roles encourages sex-typed expectancies and self-regulation and, in this way, influences behavior (Eagly, 2000; Eagly & Mitchell, 2004). One examples of such sex-typed behavior is women's cross-relational adoption of helping in terms of nurturing and caring behaviors (Eagly, 2000; Eagly & Crowley, 1986). Another is their greater social network participation (Kawachi & Berkman, 2001).

Application of social role theory can facilitate understanding how other family relationships affect women and men's mental health differentially. Many studies show that women show stronger associations between non-spousal family relationships and mental health than men do. These associations are likely rooted in the division of labor that gives women primary responsibility for household and family related tasks and concerns, and suggests that men's main responsibilities lie in the employment and financial realms. It is possible that the increased likelihood to be involved in the day to

day details of relationships with children and parents, the more frequent contact with these members, and women's tendency to be more embedded in these relationships, gives them a greater sense of security and companionship while simultaneously acting as source of stress (Fuhrer, Stansfeld, Chemali, & Shipley, 1999; Gore & Mangione, 1983). In short, these relationships might be more pertinent predictors of women's mental health, while they might not affect men's health to the same extent. These expectations suggest that even though family relationships likely affect both men and women, the intensity with which they affect women's mental health is likely to be such that they experience more significant associations between these family relationships and mental health.

The Health Implications of Changing Social Roles

This sex specific interpretation of how social roles affect the association between relationships and mental health, however, communicates a static and, at best, incomplete, portrayal of how social roles operate in the lives of women and men. Instead, social role theory suggests that sex differences are malleable when confronted with changing social roles (Eagly & Diekmann, 2003). Empirical studies also suggest as much. For example, studies have shown that parenthood, a role that could be expected to be mainly within the woman's realm of responsibility, confers largely beneficial mental health effects to both women and men (Helbig, Lampert, Klose, & Jacobi, 2006). Even when differences between men and women have been found in associations between parenthood and health outcomes, it is often not parenthood per se that is related to decreased well being; it is the lack of financial or social resources to deal with the responsibility of children that increases vulnerability, as in the case of single parents (Aneshensel, Frerichs, & Clark,

1981; Cairney, Boyle, Offord, & Racine, 2003; George et al., 2005). Often, this responsibility falls to women in families.

The malleability of social roles and how they affect potential sex differences in health outcomes is also apparent in the documented importance of family relationships in men's health. A growing body of research details that men's non-spousal relationships within the family matter a great deal to their health as much as—and sometimes more than—women's relationships with the same family members do (Aneshensel et al., 1981; Barnett & Marshall, 1993; Barnett, Marshall, & Pleck, 1992; Helbig et al., 2006; Muhajarine & Janzen, 2006; Walters et al., 1997; Wickrama, Rand, Lorenz, & Matthews, 1995; Windle & Dumenci, 1997). The transition to parenthood and caring for sick or ailing children are two instances of men's adaptation to nurturing roles that can potentially affect health (Bartlett, 2004).

Changing Social Roles in The Immigration Context

The responsibilities and tasks that men and women in immigrant populations provide a lucid example of how malleable social roles are. They also speak to the potential health implications of such malleability. Increasing research from immigration and feminist scholars underscores the ways in which sex roles change in migration contexts (Kawamoto & Anguiano, 2006). This is particularly true for those who migrate from developing countries. In many of these countries, roles and responsibilities are to some degree divided for women and men, with accompanying stereotypes regarding which responsibilities are taboo for women or men (Roopnarine, Brown, Snell-White, & Riegraf, 1995). In the case of the large majority of immigrants to the United States who come to work or to be reunited with their family members, some of the external trappings

of roles might not appear to change a great deal. Often, women and men in these groups were in their countries' labor force. Often, women continue to have the main responsibility for the household chores. However, the movement from one location to another also requires a re-negotiation of sex roles and responsibilities (Gneu-Sotelo, 1992; Hondagneu-Sotelo, 1999; Pessar, 1999; Spitzer, Neufeld, Harrison, Hughes, & Stewart, 2003).

One of the main reasons for the re-negotiation of social roles is the sequence in which family members migrate. In many cases, one family member immigrates first and attempts to prepare the way for others. Whoever migrates first is thus very likely to occupy multiple roles, some of which s/he would not have occupied before. Tasks and responsibilities that were likely considered to be within one or the other sex's domain within the country of origin become less clearly demarcated. Both male and female family members must deal with the responsibility of household chores, maintenance of family networks, and childcare in these cases. In addition, both women and men often have to deal with the loss or transformation of personal, familial, and professional statuses they held in their countries of origin (Aycan & Berry, 1996). In these cases, establishing ties within the new community, staying in touch with family abroad, and entering a new job market likely require similar skill sets and responsibilities from both women and men. Related to this both women and men in these cases have to come to terms with transformations in how their primary roles (spouse, parent, son/daughter, worker) will be enacted, particularly if other family members do not accompany them immediately and/or if they have to re-enter the job market at a level below their qualifications.

In a similar vein, another reason for the re-negotiation of social roles in immigrant and immigrant ancestry populations revolves around the job market. In some immigrant groups, women often experience greater employability compared to their male counterparts (Espiritu, 1999). In others, the opposite is true (Anonymous, 2007). Either of these scenarios requires that the individual wait until employment is secured. Often, this translates into more time in the household. The lack of employment opportunities, whether temporary or longer term, leads the individual to adopt social roles that might increase distress.

Family Relationships and Mental Health in the Immigration Context

The sense of family is often heightened among immigrants. For these individuals, the family generally provides the main source of support and a sense of belonging in a different context. Ironically though, for these individuals, being embedded in the family can also function as a vulnerability factor for mental health. When close kinship relations translate into isolation from other groups, as occurs for example when immigrants do not speak the majority culture language, family members experience an increased sensitivity to family related stressors. They also tend to hold elevated expectations of other family members. This is often a consequence of relying on them as a coping resource to a greater extent than they might have before migration.

Several studies have examined these family dynamics and their mental health implications among immigrant family members in the United States. However, the vast majority of these studies have focused on relationships between children or adolescents and their parents, with the perceptions mostly being those of the child or adolescent (e.g., Birman & Taylor-Ritzler, 2007; Boyce & Fuligni, 2007; Fuligni, Tseng, & Lam, 1999;

Fuligni et al., 2002; Harker, 2001; Phinney & Vedder, 2006). These studies also tend to be based on samples of first generation adult immigrants and their second-generation adolescent children. The intergenerational relationship perceptions that are reported upon thus tend to focus on differences in ideas about parenting, child-discipline, and what the adolescent child owes the parent because of sacrifices to get the child to the United States (Baptiste, Hardy, & Lewis, 1997b; Baptiste, Hardy, Lewis, Roopnarine, & Brown, 1997; Carten, Rock, & Best-Cummings, 2002; Crawford-Brown, Rattray, & Webb, 2001; Lashley, 2000). However, very little is known about intergenerational family relationships in immigrant and immigrant ancestry adults. Research has called attention to the significant role that these parent-child relationships have on mental health (Bengtson & Robertson, 1985; Roberts, Richards, & Bengtson, 1991). This is likely to be even more the case in immigrants for whom family relationships are also part of the often transnational system of aid and obligation into which they are embedded.

In families in which the main purpose of the migration is for family reunification (Kent, 2007; Logan, 2007), one family member tends to be in the United States before the others preparing the way for the rest of the family (Bashi, 2007). Often entry into these pre-established family networks is beneficial to health (Buckley, Angel, & Donahue, 2000), because it helps to ease the transition from the country of origin into the new context. Migration for Black Caribbeans fits into this category. Black Caribbean immigrant families tend to live in multi-generational households with multiple family members, including adult children, aging parents, and extended family members (Crawford-Brown et al., 2001; Fiori, Consedine, & Magai, 2008; Gibson, 1997; Gopaul-McNicol, 1998). The arrival of family members into these households is often staggered,

with parents arriving at later stages to join their adult children. Although this type of living arrangement can be conducive to the pooling of resources, it is also sometimes related to great expenditure. This occurs in cases of international remittances, for example. Living in a multi-generational household and having low household income has been linked to poorer mental health for both immigrant men and women (Jeon, Jang, Rhee, Kawachi, & Cho, 2007). When parents do arrive into the households, the likelihood of having to live with the adult children and to be receiving money from them can be a source of distress (Angel, Angel, Lee, & Markides, 1999).

These types of intergenerational family dynamics among immigrants help illustrate why it is not necessarily the adoption of formerly unheld social roles per se that affects how family relations influence health. Instead, it is the execution of new roles that dictates how immigrant family relations affect mental health. These new roles are performed within the context of challenges based on immigrant status (Park, 2008). In one study of Latin American immigrants to the Canary Islands, for example, living with children and grandchildren was associated with increased distress among men but not among women (Aroian, Norris, Fernandez, & Averasturi, 2008). Instead, not being employed full time and attachment to peoples, places, and things in the homeland were the significant predictors of distress for women. In another study, immigrant men's depression was manifested by marked interpersonal problems and affective distress (Lackey, 2008). In short, although immigrant women and men might manifest differences in associations between family relationships and mental health, it is not a static division of sex roles that affects these associations; it is a complex constellation of immigration-related factors that influences them.

Competing Models of the Effects of Multiple Roles on Mental Health

Two models with competing predictions guide discussions on the ways in which multiple roles affect mental health. These two models and their accompanying hypotheses have been used to explore multiple roles in normative young to middle-adulthood populations that are mostly female, non-Hispanic White, and middle-class (Johnson & Staples, 2005). In the parlance of sex role research, these can be thought of as normative populations. In addition, they have focused on these issues with populations that are native to the country in which they are being studied. However, these models and hypotheses may have different implications for non-normative populations of immigrants and those of immigrant ancestry. These issues are discussed below after a review of the literature on the different perspectives on the health implications of multiple roles.

Normative Cases

The first model of the implications of multiple roles is rooted in the expectation that occupying many roles is deleterious for health (Goode, 1960; Slater, 1963). The role strain hypothesis (e.g., Adelman, 1994b; Reid & Hardy, 1999), also referred to as the scarcity hypothesis (Barnett & Baruch, 1987; Goode, 1960), proceeds from this model. The model proposes that multiple roles are associated with poorer health outcomes through conflicts of demands that are often incompatible, the strain associated with the responsibilities of each role, and the cumulative responsibilities of the roles.

There are two basic assumptions of this model (Barnett & Baruch, 1987). One is that each individual possesses a limited amount of energy (Goode, 1960). The other is that the social groups and organizations to which the individual belongs are greedy and require continuous, demonstrated commitment and fidelity (Cosser, 1974). Adapting to

multiple roles is seen to require a deliberate parsing of the individual's limited time and energy (Brody, 2004; Goode, 1960) and to be disadvantageous to emotional resources and interpersonal relationships (Stoller & Pugliesi, 1989). Multiple roles are perceived as even more distress inducing when the relationships in which these roles find their meaning are tense, necessitate an assumption of or reduction in responsibilities (Pearlin, 1983, 1989).

The role strain or scarcity hypothesis tradition was originally based on traditional sex role theory. This theory developed during a period when men's roles were squarely outside the home and when women tended to be engaged in unpaid labor inside the home, caring for children and attending to household needs. Hence, men's roles outside the labor force are hypothesized to tax their health resources, with similar expectations for women's roles outside the family.

There have been mixed results in tests of the scarcity hypothesis. Some studies have found support for the hypothesis. They have shown, for example, that White, middle-aged caregiving children experienced emotional strain (Mui, 1992) and that caregiving spouses reported decreased well-being when compared to non-caregiving spouses (N. F. Marks, 1998). On the other hand, studies have also failed to find this effect. In some cases, they actually find that it is the lack of social roles—not the multiplicity of them—that is associated with poorer mental health (e.g., Dautzenberg, Diederiks, Philipsen, & Tan, 1999). Such findings argue in favor of the second model of the implications of multiple social roles: the role enhancement or role expansion model.

The role enhancement, role expansion, or role accumulation model of the implications of multiple roles is founded on the assumption that multiple roles promote

enhanced health (S. R. Marks, 1977; Sieber, 1974). This model proposes that multiple roles allow the individual to apply resources across role domains, facilitate better integration in society, increase self-esteem, enhance status, provide security—including financial security, and accumulate privileges (Sieber, 1974). In addition, multiple roles have been hypothesized to increase well-being by providing purpose and direction to the individual's life (Thoits, 1983). Contrary to the scarcity model, the expansion model rests on the assumption that human beings are able to divest appropriate amounts of energy to their different commitments at different times. Even when the division of time and energy is not ideal, the model proposes that the mere availability of such roles enhances health.

This has been found in several studies, ranging from those focused on employed women in a mid-Western state (Pietromonaco, Manis, & Frohardt-Lane, 1986), a cross-sectional national probability sample of Black and White women who were middle aged and older (Cochran, Brown, & McGregor, 1999), another cross-sectional national probability survey that included Black and White men in addition to women (Adelmann, 1994b), and a longitudinal study of middle-to-upper class women (Helson, Elliot, & Leigh, 1990). As hinted at earlier, a corollary of the role enhancement model is the view that too few roles are harmful to mental health and psychological well-being. The lack of social roles in these cases is understood to increase distress and stress by building tension, increasing isolation, and augmenting a general sense of dissatisfaction with life (Oakley, 1974).

This model, similar to the scarcity model, developed during a period in which traditional sex roles were adhered to in the United States. It is based on studies that attempted to explain men's better mental health outcomes compared to women's poorer

ones by focusing on men's greater tendency to be engaged in both work and family roles (Gove, 1972; Gove & Tudor, 1973). As a counter to the scarcity model, the expansion model has been used in attempts to redeem and revive research based on social role theory. On the other hand, because of its reliance on static sexed division of responsibilities, it is not clear when and how the model might not be applicable.

Studies that test these different models tend to adopt an either/or approach to understanding when multiple roles affect health. Unfortunately, such approaches preclude examinations of the ways in which roles in one domain might affect another. Although largely unheeded, researchers have suggested that neither of these perspectives should be uniformly dismissed in favor of the other because the applicability of either of these perspectives depends on a multiplicity of factors (Moen, Robison, & Dempster-McClain, 1995; Reid & Hardy, 1999). One such factor is "spillover effects" (Parris Stephens, Franks, & Townsend, 1994). These effects occur when the positive effects of one role buffer the otherwise negative effects of another. The opposite could also be the case: negative effects of one role might trump the positive effects of another.

It is an unfortunate reality that the decreasing likelihood of finding empirical support for the scarcity model partnered with the overwhelming support for the expansion model have led to calls to abandon research on multiple roles. Researchers instead promote scholarship on the effect of role types, role combinations or repertoires (Menaghan, 1989), role balance, and role identity (Thoits, 1992). These perspectives could be criticized as all or nothing approaches to the scarcity hypothesis and the enhancement hypotheses. Such perspectives fail to consider the possibility that for some populations, both of these perspectives might in fact be relevant. In addition, the

resources that certain populations have, or conversely do not have at their disposal, might increase the likelihood of both possibilities being relevant for them (N. F. Marks, Lambert, Jun, & Song, 2008). This possibility is discussed in greater detail in the following section.

Immigrant Family Members as Non-Normative Cases

Research on social roles and health has been criticized for its lack of focus on ethnic minority populations. For these populations social roles are often different in quality, content, and number than for mainstream non-Hispanic White populations. The few existing studies on these populations suggest that multiple roles have different implications for these populations when compared to non-Hispanic White populations (Adelmann, 1994a; P. B. Jackson, 1997). These differences have been hypothesized to exist because of the historical and contextual factors involved in the creation and maintenance of these social roles for these groups. Although the sex role theory research on such populations has been increasing (e.g., Adelmann, 1994a; Cochran et al., 1999; P. B. Jackson, 1997), it is still very much in its infancy.

One of the populations that has been scarcely studied in examinations of roles is immigrant and immigrant ancestry populations. How might multiple roles be related to the health of members of this group? Social roles enacted by women and men within immigrant populations are likely to be different from that of the general native population. This is because of the preponderance of reasons for migration revolving around employment, study, and reunification with the family. In addition, family separation tends to be a precursor of family reunification and such separation likely

heightens feelings and thoughts about the family regardless of gender. However, there is a lack of research on sex, social roles and mental health among immigrant populations.

It is possible that fewer roles can intensify the associations between family relationship perceptions and mental health. This is because those with fewer roles are often embedded within the family. In these cases, these relationships would have stronger effects on mental health. There is also the possibility that either extreme of role occupancy can lead to greater distress among this population. Few roles could be associated with greater distress for the reasons mentioned. However, high role accumulation could also be associated with intensified associations between relationship perceptions and distress for either sex because of the added stressor that it provides in the immigration context. The lack of studies that bring together the social roles, family relations, and mental health literatures, and the even smaller body of work that examines these relationships among immigrants leaves this question open to speculation.

The Current Study

There is very little research on similarities and differences between women and men in the psychological distress ramifications of family relationships other than those with a spouse. In research on ethnic minority and immigrant populations, although these other family relationships are explored to a greater extent, studies tend to focus on relationships between adolescents or younger children and their parents. The conflicting results in the few studies to date points to the necessity of examining these issues with non-normative populations. The present addresses thus has three main goals—two of which are related to tests examining the moderating role that sex plays in the associations between non-spousal family relationships and mental health.

The first goal is to test whether sex is a moderator of the associations between non-spousal family relationship perceptions among largely immigrant ethnic minorities, specifically, non-Hispanic Black Caribbean adults in the United States. The moderator model predicts that intergenerational family relationship perceptions relate to psychological distress differently depending on whether the respondent is female or male. Traditional sex role theories predict that women will show stronger associations between these relationships and their mental health. On the other hand, increasing studies that can be considered to use feminist and intersectionality perspectives on sex and social roles suggest that these relationships are also crucially important in men's mental health, and sometimes even more than for women's health. These different possibilities are explored.

The second goal is test competing hypotheses regarding how multiple roles might be associated with family relationship perceptions and mental health in a yet studied population: non-Hispanic Black Caribbeans. The expansion or enhancement hypothesis of sex roles and psychological distress predicts that increased social roles would accentuate the distress-detering function of family relationships. It predicts that increased role occupancy will be a protective factor in the associations between family relationships and mental health—or the corollary that too few roles increase the vulnerability to distress. The scarcity hypothesis, on the other hand, predicts that increased social roles will exacerbate these associations. It suggests that increased primary social role occupancy functions as a vulnerability factor in the associations between family relationships and mental health.

The third goal is to test how sex affects the moderating role of social roles on the association between family relationships and psychological distress. Is the way in which

multiple roles a moderator of the association between family relationships and psychological distress different for women versus men? Because role occupancy has been theorized to affect women and men differently, sex differences in these predictions should be evident. However, given the absence of prior work on these questions, the possibility that there are sex differences in the interactions between adult intergenerational family relationships and multiple roles is an open question. Analyses will thus be exploratory.

Methods

Sample

The data come from the Black Caribbean respondents in the National Survey of American Life (hereafter referred to as the NSAL), a household survey conducted between 2001 and 2003, the largest study of the mental health of Blacks in the United States completed to date (J. S. Jackson et al., 2004). The NSAL is the first national sample of individuals from different race and ethnic groups who live in the same geographical areas as African Americans. The total NSAL sample included 1, 621 Black Caribbeans, 3, 570 African Americans, and 891 non-Hispanic Whites. The main sampling frame selected African American and White samples in proportion to the African American population. This is referred to as the Core Sample Frame. The African American sample is a national representative sample of households located in the 48 coterminous states with at least one Black adult age 18 or older who did not identify ancestral ties to the Caribbean (Heeringa, Torres, Sweetman, & Baser, 2006; Sweetman, Baser, Faison, Rafferty, & Torres, 2006). The NSAL White sample is a stratified, disproportionate (as the density of African Americans in a block group increased, the rate

of selection of Whites in that group also increased) sample of adults living in United States tracts and blocks that have at least a 10 percent African American population. The NSAL White sample represents 14 percent of the total United States White population (Heeringa et al., 2006; Sweetman et al., 2006).

Respondents were considered Black Caribbean if they self-identified as Black and answered affirmatively to any of the following three questions: (1) Are you of West Indian or Caribbean descent? (2) Are you from a Caribbean-area country? or (3) Do you have parents or grandparents who were born in a Caribbean-area country? The NSAL is unlike other samples of Black Caribbeans that have focused either exclusively on New York or Florida because of its maximization of the number of Black Caribbeans across the country. The sampling procedure for the Black Caribbeans consisted of two distinct components: (1) respondents from the core sampling frame, in which respondents were recruited with a multi-stage stratified area probability design ($n = 265$); and (2) respondents from high-density sampling, in which United States census block groups were oversampled where Blacks of Caribbean descent represented at least 10 percent of households ($n = 1356$). The NSAL Black Caribbean sample is a national representative sample of that population (Heeringa et al., 2006; Sweetman et al., 2006).

This study uses the non-Hispanic Black Caribbean subgroup ($n = 1,396$) from the Black Caribbean sample. Within that pool, analyses are further restricted to those respondents who completed a mail-in follow-up to the main interview, referred to as the self-administered questionnaire (SAQ) (see description in the following section). This is done because questions on positive and negative relations with adult children and parents

were presented only in the SAQ. Of the 695 Black Caribbeans who completed the SAQ, 591 were non-Hispanic Black Caribbeans (Haitians and West Indians).

Procedure

The main interviews were conducted using computer assisted software and administered by trained interviewers with racial backgrounds similar to those of the respondents. Interviews were conducted in English. The average length of the Black Caribbean interview was 2 hours 43 minutes, 23 minutes longer than the average interview length for African Americans, and one hour longer than the average interview length for the non-Hispanic Whites (J. S. Jackson et al., 2004). Although there was a high refusal rate among the Black Caribbeans, their response rate was 77.7 percent, 5.4 percent more than the overall response rate (J. S. Jackson et al., 2004). The SAQ was a 40-page questionnaire that comprised questions that were not presented in the main instrument because of cost limitations. Black Caribbeans had a response rate of 42.9 percent for this mail survey. Although this is a relatively low response rate, preliminary analyses conducted by the study's key researchers show that the demographic distributions of the SAQ respondents did not differ greatly from those of the main interview respondents (Sweetman et al., 2006), suggesting that the SAQ respondents are demographically representative of the larger sample.

Measures

Psychological Distress

The Kessler Psychological Distress Scale (K6) (Furukawa, Kessler, Slade, & Andrews, 2003; Kessler et al., 2002; Veldhuizen, Cairney, Kurdyak, & Streiner, 2007)

measured distress. The K6 has been successfully used as a screening instrument for the diagnosis for more serious mental illnesses (Furukawa et al., 2003; Kessler et al., 2002; Veldhuizen et al., 2007). This 6-item inventory assesses the prevalence of negative feelings in the past 30 days (e.g., “how often did you feel...so sad nothing could cheer you up?, ...nervous?, ...restless or fidgety?, ...hopeless?, ...that everything was an effort?, ...worthless?”). Respondents reported frequency on a 5-point scale (5 = *none of the time*, 4 = *a little of the time*, 3 = *some of the time*, 2 = *most of the time*, and 1 = *all of the time*). Responses were reverse coded so that higher scores indicated more frequent symptoms of psychological distress. As in other studies that have used the items (e.g., Kessler, Mickelson, & Williams, 1999), exploratory principal components factor analyses found only one meaningful dimension among the items, with factor loadings ranging between .55 and .80 and an eigenvalue of 3.09. To score the K6, the points were added together yielding a possible total of 0 to 30 points (range = 6 to 28; Cronbach’s $\alpha = .80$). A threshold of 13 or more is used to define serious mental illness. Because this variable was positively skewed, (skewness = 2.27 (.00), kurtosis = 9.19 (.00), it was log transformed (range = 1.79 to 3.33, $M = 2.14$, $SD = .38$). Results are, however, interpreted using the exponent of the log expressed as a percent.

Relationships with Non-spousal Family Members

Relationships with family members elicit both positive and negative perceptions (Rook & Pietromonaco, 1987). However, neither type of perception is bi-dimensional; greater positive perceptions do not equate to fewer negative perceptions and vice-versa. Consequently, there are different mental health implications for positive and negative aspects of relationships (e.g., Vinokur & Van Ryn, 1993). The negative features of

relationships have been shown to be burdensome to health (Akiyama, Antonucci, Takahashi, & Langfahl, 2003; J. F. Finch, Okun, Barrera, & Zautra, 1989; J. F. Finch, Okun, Pool, & Ruehlman, 1999; Rook, 1984, 1990, 1992, 2003). However, a certain level of conflict in a relationship helps maintain relational equilibrium and is beneficial to health (Gottman, 1993; Gottman, Markman, & Notarius, 1977; Rook, Mavandadi, Sorkin, & Zettel, 2007). In a similar fashion, positive relational qualities tend to be beneficial to health (Cohen, 2004; Cohen & Wills, 1985; Thoits, 1982; Turner, 1983; Wheaton, 1985). However, at certain levels, particularly in the context of stressors, they can be damaging to health. Research has shown, for example, that relationships that are “too positive” can foster feelings of incompetence, dependence, or over-reliance on others (Antonucci, 1991; Antonucci, Akiyama, & Lansford, 1998; Antonucci et al., 2002). Because of the orthogonal nature of these relationship facets and their differing mental health implications, it is important to use a measurement tool that captures both dimensions. The Intergenerational Solidarity Scale (Bengtson & Schrader, 1982; Daatland & Herlofson, 2001; McChesney & Bengtson, 1988) is such a measure.

Positive relations with adult child, father, and mother.

The Affectual Solidarity scales for child, father, and mother from the Intergenerational Solidarity Scale (Bengtson & Schrader, 1982; Daatland & Herlofson, 2001; McChesney & Bengtson, 1988) were used to assess, where applicable, positive relations with an adult child, living father, and living mother. The 5-item Affectual Solidarity Scales (one for each family member mentioned above) have been successfully used to assess the type and degree of positive sentiments held about different family

members, with separate versions of the scale for each specific family member (Bengtson & Mangen, 1988; Daatland & Herlofson, 2001).

The NSAL used a reduced 3-item scale, per family member, with the items that prior research have shown to have the strongest reliability. The indicators focus on ratings of affection and closeness between the family members (Overall, how well do you and your (child/father/mother) get along together? ... How well do you and your (child/father/mother) communicate about things that really concern you at this point in your life? ... How close do you feel to your (child/father/mother)?). Respondents reported about how close and well they felt on a 6-point scale (1 = *not at all*, 2 = *not too*, 3 = *somewhat*, 4 = *pretty*, 5 = *very*, and 6 = *extremely*). As in other studies that have used the items, exploratory principal components factor analyses found only one meaningful dimension for each relationship. Factor loadings for the child scale ranged between .88 and .91 and had an eigenvalue of 2.41. For the father scale, factor loadings ranged between .92 and .96 and had an eigenvalue of 2.65. Factor loadings for the mother scale ranged between .89 and .95 and had an eigenvalue of 2.55. The scale is scored by summing the items (e.g., Parrott & Bengtson, 1999). Responses on the low end (3) indicate low affection and those on the higher end (18) indicate high affection (child Cronbach's $\alpha = .88$; father Cronbach's $\alpha = .93$; mother Cronbach's $\alpha = .91$).

Negative relations with adult child, father, and mother.

The Conflictual Solidarity scale was a supplemental scale added to the original Intergenerational Solidarity Scale (Bengtson & Schrader, 1982; Daatland & Herlofson, 2001; McChesney & Bengtson, 1988). The subscales for child, father, and mother were used to assess, where applicable, negative relations with an adult child, living father, and

living mother. The 3-item Conflictual Solidarity Scales have been successfully used to assess the degree of conflict over communication and interaction style with different intergenerational family members, with separate versions of the scale for each specific family member (Parrott & Bengtson, 1999). The indicators focus on the amount of perceived verbal conflict in the respondent's relationship with an adult child, father, and mother (How much do you feel (this child/your father/your mother) is critical of you or what you do? ... How much does (this child/your father/your mother) argue with you? ... In general, how much conflict or tension do you feel there is between you and (this child/your father/your mother)?). Respondents reported on a 6-point scale, in which responses ranged from *not at all* (1) to *a great deal* (6). As in other studies that have used the items, exploratory principal components factor analyses found only one meaningful dimension for each relationship. Factor loadings for the child scale ranged between .88 and .91 and had an eigenvalue of 2.41. For the father scale, factor loadings ranged between .92 and .96 and had an eigenvalue of 2.65. Factor loadings for the mother scale ranged between .89 and .95 and had an eigenvalue of 2.55. Items were summed to score the Conflictual Solidarity Scales (e.g., Parrott & Bengtson, 1999), with responses on the low end indicating low conflict and those on the higher end indicating high conflict (child Cronbach's $\alpha = .58$; father Cronbach's $\alpha = .68$; mother Cronbach's $\alpha = .77$).

Sex

Sex was coded 0 = male and 1 = female.

Social Roles

A series of dummy variables were created and totaled for the measurement of multiple primary social roles (maximum = 4). Codes of “1” indicated the possession of the role and “0” indicated its absence. Respondents were considered to have the role of “spouse” if they reported being married. They were considered a “worker” if they reported that they were currently working or working part-time at the time of the data collection. Respondents were considered a “son/daughter” if they reported at least one parent alive. They were considered “parent” if they reported having any living children.

Although past studies have used separate categories for parents of children under 18 and those who are 18 and older, the present study did not follow this convention for both pragmatic and substantive reasons. Pragmatically, the present study did not distinguish between parental categories because the dataset did not contain variables that could have been used to assess this breakdown of the parenting category.

In prior research, the distinction between parents of children under 18 and those older than 18 has been done for two main reasons. First, there are different parental responsibilities associated with these age groups. Second, there is an assumption that children who are older than 18 live outside the parental home. Immigrant populations, however, and Black Caribbean immigrant populations in particular, demonstrate different familial residential structures. For these groups, adult children, grandchildren, and other extended family members often live in the same residence (Baptiste, Hardy, & Lewis, 1997a; Baptiste, Hardy et al., 1997b; Fiori et al., 2008). In the case of Black Caribbeans, this is linked to the family reunification motivations that underlie immigration to the United States (Kent, 2007; Logan, 2007). Households with multiple family members

often provide financial and emotional security and help to ease the transition into the United States.

Demographic and Control Variables.

Sociodemographic and migration history variables are included to control for population heterogeneity because these variables are correlated with social relations, social roles, and psychological distress. Although the associations among sociodemographic and migration characteristics and social relations, social roles, and psychological distress are of some substantive interest and will be pursued in future research, they are not the focus of the present study. A caveat: Breakdowns for a four-category marital status variable are provided solely for the descriptive statistics; the dummy variable spouse derived from this four-category variable is the one used in the focal analyses.

Socioeconomic status.

Prior research suggests important links between socioeconomic status, sex, social roles, and distress (Cooper, 2002; Matthews & Power, 2002; Matthews, Power, & Stansfeld, 2001; Spitzer et al., 2003). It is thus important to include this variable as a covariate. The indicator used as a proxy for socio-economic status was household income. Household income was a continuous variable that was imputed for cases with missing data.

Age.

The mental health of aging populations is susceptible to both positive and negative social relations (e.g., J. F. Finch et al., 1989; Okun & Keith, 1998; Okun,

Melichar, & Hill, 1990). Similarly, research on immigrant adolescents and younger adults suggests that both types of relationships are significant predictors of mental health (e.g., Fuligni et al., 1999; Fuligni et al., 2002). As such, age, used as a continuous variable, was included as a control variable.

Nativity.

A growing body of research highlights that mental health outcomes are different for those born within the United States versus those born outside the United States (e.g., B. K. Finch, Kolody, & Vega, 2000; Gee, Ryan, Laflamme, & Holt, 2006; Kuo, 1995; Leu et al., 2008). It was not possible to examine models separately for the foreign-born and those born in the United States. Although there was a large enough sample size for the foreign-born (see Table 4.1), the sample size of the native United States born was insufficient for the subgroup analyses. The analyses thus controlled for nativity. Nativity was coded 1 for the foreign born and 0 for those born in the United States.

Non-Hispanic Black Caribbean ethnic sub-group.

Evidence suggests that Haitians, similar to other displaced ethnic groups, might report poorer mental health in the short term after their arrival in the United States (Portes & Stepick, 1985; Stepick & Portes, 1986). This is connected to the flight from persecution and economic hardship that motivates a substantial proportion of Haitians to enter the United States (Catanese, 1999; Fouron, 1987; Kretsedemas, 2004). Ethnic subgroup was thus controlled in the following analyses, with a dummy variable created for Haitians.

Residential location of immediate family members.

Residential closeness sometimes increases the probability of both positive and negative family relations. In addition, residential proximity to family members is likely quite different for immigrant family members who tend to cluster together, especially at the early stages of the immigration experience (Logan, Zhang, & Alba, 2002), than for native populations. Because a large proportion of the sample was foreign born, and consequently not likely to be living close to their immediate family members, analyses controlled for this variable. The majority of family members living in the same state as the respondent served as the reference group. Two dummy variables were created to represent the group of respondents whose immediate family members mostly resided in another United States state and the group of respondents whose family members lived outside the United States.

Analyses

Data preparation.

All continuous predictor measures (affectual solidarity (with child/father/mother), conflictual solidarity (with child/father/mother), and number of roles) were mean-centered (that is, each continuous variable was subtracted by the overall sample mean of that variable; thus the intercept represented the predicted log psychological distress for the “average” person in the sample). This reduces multicollinearity and facilitates the interpretation of the intercept if interactions effects are detected (Aiken & West, 1991).

All analyses used a significance level set at $p = .10$ to accommodate the small sub-groups of those with adult children 18 and older, with a mother, and with a father, for whom the analyses are pertinent. This is similar to strategies used in other large survey sample studies that have small sub-population sample sizes with which to examine the

associations among social relations, social roles, and mental health (P. B. Jackson, 1997; Thoits, 1983).

Analyses took sample design effects into account by using the *svy* commands of Stata SE 10.1, which allows for estimation of standard errors in the presence of stratification and clustering. Actual numbers are reported for sample sizes, while weighted data are used in the analyses. The weight variable for the SAQ was used for all analyses. However, the design variables were only used for analyses related to the first research question and for the model with men and women collapsed together in the second research question (see below).

Design variables were not used for the second research question's separate model estimations for women and men. This is because the majority of these subpopulation analyses had sample sizes of 200 or fewer, and in such cases, the sample more closely resembles a simple random sample (Heeringa & West, 2005). For these separate models for women and men relevant to the second research question, five of the six subpopulations had sample sizes below 200. Specifically, men reporting on relationship with an adult child ($n = 90$), men reporting on relationship with father ($n = 99$), men reporting on relationship with mother ($n = 125$), women reporting on relationship with child ($n = 165$), and women reporting on relationship with father ($n = 193$).

Sample sizes varied according to the research question examined. For the analyses related to the first research question and for the analyses of the full sample for the second research question, models that examined relationship with an adult child used 238 cases, those focused on the relationship with the father had 274 cases, and those that concerned the relationship with the mother had 368 cases.

Focal analyses.

Multiple linear regression was used to adjust for covariates. Because models for both research questions involved the examination of interaction effects, hierarchical models were estimated. Analyses were first conducted for the total sample with just the covariates. The second step included the main effects for affectual and conflictual solidarity and sex (research question one) and number of roles (research question two) on psychological distress. The third step introduced the interaction effects of affectual solidarity and sex and conflictual solidarity and sex (research question one) and each solidarity variable and number of roles (research question two). This was repeated for each intergenerational relationship assessed (with adult child, with father, and with mother). Post hoc probing of all significant two-way interactions were conducted using established techniques of computing simple slopes and corresponding significance tests (Aiken & West, 1991; Holmbeck, 2002).

For analyses for the second research question on whether social roles moderated the association between intergenerational solidarity and distress, the model was estimated with women and men collapsed as one group. This helped provide a baseline for the comparative examinations of the model separately for women and men that would follow for the third research question. For these models, Chow tests were computed to examine whether there were statistically significant differences between the models for women and men. Significant differences would imply that the effects of the independent variables differed between the groups—a different type of group difference than mean level differences in the independent variables between the groups (Hardy & Reynolds, 2004). If significant, these tests point to directions for future research. There are,

however, two key disadvantages of such incremental F tests. First, they are unable to specify which coefficients differ across populations (one of the independent variables effects or just the intercept term). Second, they are not able to test whether subsets of variables have different effects across groups.

Results

Descriptive Information

Weighted and unweighted means and proportions with accompanying estimates of standard errors for the full sample and separately for women and men are shown in Table 4.1. The majority of the sample was female, married, West Indian, and foreign-born. The majority of the sample also reported that most of their immediate family members lived in the same state in which they lived. The patterns of the socio-demographic variables were generally consistent across sex, with the exception of the weighted proportion for marital status and the weighted mean for household income. A sex breakdown showed that a higher proportion of men than women were married, whereas a higher proportion of women than men were separated, divorced, or widowed. Women's household income was significantly lower than men's household income.

Several of the sex patterns of the key study variables, although not reaching statistical significance, are mentionable because of the present study's small sample size and the possibility of finding significant differences with larger sample sizes. Neither men nor women in the sample met criteria for being clinically distressed. Contrary to the trend in research on non-Hispanic White and other ethnic minority populations, the distress level of the non-Hispanic Black Caribbean men in this sample was higher than their female counterparts. Men's reported levels of both affectual solidarity and

conflictual solidarity with parents were higher than women's. Women's reported level of affectual solidarity with an adult child were higher than men's and their reports of conflictual solidarity with this child were lower than men's. In general, across sex, reports of affectual solidarity with the adult child were high, and reports of affectual solidarity with mother and father were moderately high. Reports of conflictual solidarity were low for each relationship assessed.

Sex as Moderator of the Association Between Intergenerational Relations and Distress

According to the sex as moderator model, intergenerational family relationship perceptions should have related to psychological distress differently depending on whether the respondent was female or male. Results are presented first for the relationship with adult child, second for relationship with father, and third for relationship with mother.

Relationship with Adult Child

The conflictual solidarity main effect and its interaction effect were not significant in any of the models. The main effect of sex was not significant in this model. However, tests of the interaction of model of sex and affectual solidarity with a child eighteen or older found that both the main effects of affectual solidarity and its interaction with sex were statistically significant (see Table 4.2).

The main effects only model (affectual solidarity, conflictual solidarity, and sex) explained 23.01 percent of the variance in psychological distress, and provided an excellent fit for the data as indicated by the results of multi-parameter Wald tests of significance ($F(6, 231) = 3.41, p < .01$). Affectual solidarity was significant in the way

anticipated. Every unit increase in the centered affectual solidarity variable decreased distress by 1.98 percent on average ($p < .05$).

Once the interaction term was added, the model explained 25.73 percent of the variance, 2.72 percent more than the previous model with just the main effects. The regression coefficient for the interaction between affectual solidarity with child and sex was significant ($b = -.04$, $SE = .02$, $p < .10$). In addition, the two percent contribution to the explained variance that the interaction term contributed was statistically significant, semi-partial $R^2 = .02$, $p < .05$; $F(2, 226) = 4.45$, $p < .05$. Post hoc probing revealed that distress tended to be lower for men with higher levels of affectual solidarity with a child 18 or older ($b = -.04$, $SE = .02$, $p < .05$). The slope for women was not significant ($b = -.01$, $SE = .01$, $p > .10$). This suggested that only the men in the present sample demonstrated a strong association between relationship with an adult child and psychological distress.

Relationship with Father

Table 4.3 shows that, similar to the findings for the relationship with an adult child, neither the conflictual solidarity with father main effect nor its interaction with sex was significant. On the other hand, the main effects of sex and of affectual solidarity as well as their interaction were statistically significant.

The main effects only model explained 20.47 percent of the variance in psychological distress, and provided an excellent fit for the data as indicated by the results of multi-parameter Wald tests of significance ($F(3, 264) = 4.89$, $p < .01$). The significant main effect for sex suggested that women reported 12.19 percent less distress than men. Affectual solidarity was significant in the way anticipated. Every unit increase

in the centered affectual solidarity variable decreased distress by 1.98 percent on average ($p < .05$).

Once the interaction term was added, the model explained 23.29 percent of the variance, 2.82 percent more than the previous model with just the main effects. The regression coefficient for the interaction between affectual solidarity and sex was significant ($b = -.03$, $SE = .01$, $p < .05$). In addition, the two percent contribution to the explained variance that the interaction term contributed was statistically significant, semi-partial $R^2 = .02$, $p < .05$; $F(2, 262) = 3.51$, $p < .05$. Post hoc probing revealed that distress tended to be lower for men with higher levels of affectual solidarity with their father ($b = -.03$, $SE = .01$, $p < .01$). The slope for women was not significant ($b = -.01$, $SE = .01$, $p > .10$). Similar to the finding for the relationship with an adult child, this suggested that for the men, but not the women, in the present sample there was a strong association between relationship with father and psychological distress.

Relationship with Mother

Unlike the previous two relationships assessed, for relationship with mother, affectual solidarity demonstrated neither a main effect nor an interaction with sex. Instead, the main effect for conflictual solidarity with mother, as well as its interaction with sex, was statistically significant (see Table 4.4). The sex main effect for relationship with mother was also significant.

The main effects only model explained 24.09 percent of the variance in psychological distress, and provided an excellent fit for the data as indicated by the results of multi-parameter Wald tests of significance ($F(3, 358) = 6.61$, $p < .001$). Conflictual solidarity was significant in the way anticipated. Every unit increase in the

centered conflictual solidarity variable increased distress by 1.98 percent on average ($p < .10$). Sex was also significant, indicating that women reported 16.47 percent less distress than men.

The model explained 27.91 percent of the variance, 3.82 percent more than the previous model with just the main effect after the interaction term was added. The regression coefficient for the interaction between conflictual solidarity and sex was significant ($b = -.04$, $SE = .01$, $p < .01$). In addition, the two percent contribution to the explained variance indicated that the interaction term was statistically significant, semi-partial $R^2 = .02$, $p < .01$; $F(2, 356) = 4.06$, $p < .05$. Post hoc probing revealed that distress tended to be higher for men with higher levels of conflictual solidarity with their mother ($b = .05$, $SE = .01$, $p < .001$). The slope for women was not significant ($b = .01$, $SE = .01$, $p > .10$). This suggested that, in this sample, this third family relationship also affected men's psychological distress levels more than women's.

The Scarcity Hypothesis Versus the Expansion Hypothesis of the Effect of Multiple Primary Social Roles

The second research question focused on extending the scarcity and expansion hypotheses of the effects of multiple roles on mental health to the study of how social roles affects the associations between family relationships and distress. The scarcity hypothesis predicts that increased primary social role occupancy is a vulnerability factor in the associations between family relationships and mental health. The expansion hypothesis predicts that increased role occupancy is a protective factor in the associations between family relationships and mental health—or the corollary that too few roles is a vulnerability factor.

Relationship with Adult Child

For the total sample there was no main effect for number of roles, nor for conflictual solidarity. There was, however, a main effect for affectual solidarity. Every unit increase in the centered affectual solidarity variable increased distress by 7.25 percent on average ($p < .10$).

There was a significant interaction effect between number of roles and affectual solidarity with an adult child for the total sample. The regression coefficient for the interaction term was significant ($b = -.03$, $SE = .01$, $p < .05$). Post hoc probing revealed that distress tended to be higher at higher levels of affectual solidarity with adult child both when number of roles was high ($b = .04$, $SE = .02$, $p < .10$) and when number of roles was low ($b = .11$, $SE = .04$, $p < .05$). This finding implies that the effect of relations with a child significantly increases psychological distress both when the individual must enact several primary roles and when s/he holds responsibility for fewer primary roles.

The interaction between number of roles and conflictual solidarity with child was also significant for the total sample. Post hoc probing of the significant regression coefficient ($b = .02$, $SE = .01$, $p < .10$) revealed that distress tended to be higher at higher levels of conflictual solidarity when number of roles was low. The slope for a greater number of roles was not significant.

Relationship with Father

There were no significant main effects or interaction effects for the models for the full sample. This suggested that neither positive nor negative relations with a father reduced or aggravated distress alone or in combination with role occupancy.

Relationship with Mother

There were no significant main effects for either of the solidarity variables, or for the number of roles for the total sample or for women and men separately.

In the total sample, the only significant interaction effect for the relationship with mother found was with conflictual solidarity. Number of roles significantly moderated the association between conflictual solidarity with mother and psychological distress ($b = .02, SE = .01, p < .01$). Post hoc probing revealed that distress tended to be lower at higher levels of conflictual solidarity with mother only when number of roles was low ($b = -.05, SE = .02, p < .05$). The slope for a greater number of roles was insignificant.

Social Roles, Intergenerational Family Relations, and Distress: Sex as a Moderator

According to model that hypothesized that sex serves as a moderator of the associations among social roles, intergenerational family relationships, and psychological distress, there should be different patterns of support for the scarcity and/or expansion hypotheses between women and men. Results are described first for the relationship with adult child, then for father, and finally for the mother.

Relationship with Adult Child

In the models looking at the interaction of number of roles and intergenerational solidarity with an adult child, the Chow test was insignificant, suggesting that the coefficients in the models were comparable across the sex groups.

Women.

For women, similar to the pattern noted for the full sample, there was a main effect for affectual solidarity such that every unit increase in the centered affectual

solidarity variable increased distress by 6.18 percent on average ($p < .05$) (see Table 4.5). Again similar to the results when the sexes were collapsed, there was no main effect for conflictual solidarity, nor for number of roles.

Number of roles significantly moderated the association between affectual solidarity with an adult child and psychological distress for women, as it did for the total sample. Post hoc probing revealed a pattern similar to that detected for the full sample. Specifically, tests of simple slopes showed that the significant regression coefficient for the interaction ($b = -.02$, $SE = .01$, $p < .05$) suggested that distress tended to be higher at higher levels of affectual solidarity both when number of roles was high ($b = .05$, $SE = .02$, $p < .05$) and when number of roles was low ($b = .10$, $SE = .04$, $p < .05$).

Men.

The insignificant main effect for number of roles that was found for both the total sample and for women only was also found for men. However, the pattern of significant main effects for men differed from that for women. Specifically, the affectual solidarity main effect was not significant, but the conflictual solidarity main effect was significant ($b = -.08$, $SE = .04$, $p < .05$), suggesting that increased levels of conflictual solidarity were related to decreased levels of distress.

For men, number of roles significantly moderated the association between affectual solidarity with an adult child and psychological distress as it did for the total sample and for women. Unlike for the total sample and for women though, only the slope for fewer roles was significant. The direction of the coefficient indicated that distress tended to be higher at higher levels of affectual solidarity with adult child when number of roles was low ($b = .15$, $SE = .08$, $p < .10$).

Relationship with Father

The Chow tests for the models exploring intergenerational solidarity with father and suggested that the coefficients in the models were not the same when the models were tested separately for each sex. This implied that one or more of the coefficients differed across the groups.

Women.

The models for women only also failed to demonstrate significant main or interaction effects. This suggested that neither positive nor negative relations with a father reduced or aggravated distress alone or in combination with role occupancy.

Men.

For men, there were neither significant main effects nor interaction effects, similar to the results for the total sample and for women only.

Relationship with Mother

Similar to the results obtained for the Chow tests for the models looking at the relationship with father, the Chow tests for the models exploring intergenerational solidarity with mother suggested that the coefficients in the models were not the same when the models were tested separately for each sex. One or more of the coefficients differed across the groups.

Women.

There were no significant main effects or interaction effects for women. This suggested that for women, neither positive nor negative relations with a mother reduced or aggravated distress alone or in combination with role occupancy.

Men.

The pattern of results for men was similar to those for the total sample. Specifically, there was no significant main effect for affectual solidarity, nor did it interact with number of roles. There was also no significant main effect for number of roles. Number of roles significantly moderated the association between the men's conflictual solidarity with mother and their psychological distress ($b = .01, SE = .01, p < .10$). Post hoc probing suggested a similar pattern of results to those found for the full sample. Specifically, distress tended to be lower at higher levels of conflictual solidarity only when number of roles was low ($b = -.05, SE = .02, p < .10$). The slope for a greater number of roles was insignificant. This finding implies that the effect of negative relations with a mother significantly decreased psychological distress when the man held fewer primary roles.

Discussion

The present study had three primary goals: 1) to test whether sex was a moderator of the associations between non-spousal family relationship perceptions and psychological distress of non-Hispanic Black Caribbeans; 2) to test the relevance of the scarcity and expansion hypotheses in the associations between their relationship perceptions and psychological distress; and 3) to test whether the moderating effect of social roles on the association between family relationships and psychological distress

was different for women versus men. These goals were addressed using hierarchical regression models and, for the third goal, by stratifying the sample by sex.

Does Sex Moderate the Association Between Intergenerational Family Relationships and Psychological Distress?

The present study found support for a moderation model of the role of sex in the association between intergenerational family relationships and psychological distress. Specifically, men's family relationships were more strongly associated with their reports of distress than were women's. Although the association was specific to the type of relationship assessed (with adult child, with father, with mother), in each significant interaction detected, it was the slope for the men, not for the women, that was significant. Distress was lower for men with higher levels of affectual solidarity with the child, lower for men with higher levels of affectual solidarity with their father, and higher for men with higher levels of conflictual solidarity with their mother. The slopes for women in these cases did not approach statistical significance, suggesting that the associations between these family relationships and the psychological distress of women in the present sample were not significant.

Although they contrast with research showing few sex differences in the ways in which social relationships affect health (e.g., Umberson, Chen, House, Hopkins, & Slaten, 1996), these results are consistent with a growing body of research that documents the importance of men's familial relationships to their health (Antonucci, Ajrouch, & Janevic, 2003; Barnett & Marshall, 1993; Fukumaru, 2003; Muhajarine & Janzen, 2006; Walters et al., 1997; Wickrama et al., 1995; Windle & Dumenci, 1997). Such findings also challenge views of women and men's core family roles that suggest

rigid sex demarcations of core roles. These views of roles as static would have predicted that women's family relationships would weigh more heavily in their mental health than they would in men's mental health. Instead, the findings in the present study support a more dynamic interpretation of women's and men's roles. This type of interpretation is aligned with research that suggests that the division of labor and responsibilities in non-normative cases (Hong & Seltzer, 1995) often fails to take on traditionally prescribed sex roles. Immigrant populations, such as the one on which the present study focused, can be considered a group that is non-normative in their sex division of social roles. For these individuals, the demands of surviving and thriving in the context to which they have immigrated often translate into women's and men's engagement in multiple social roles. For many immigrants, many of the roles that must initially be assumed might not be considered traditional sex-typed roles (Gneu-Sotelo, 1992; Hagan, 1998; Hondagneu-Sotelo, 1999; Kawamoto & Anguiano, 2006). This sometimes happens even when the division of labor evolves into a more traditionally sex-based one over time.

The findings relevant to the first research question also point to the importance of considering the interdependent nature of family relationships (Cook, 2001; Cook & Douglas, 1998; Cook & Kenny, 2004, 2006; Kashy & Kenny, 1990a, 1990b) in understanding the associations between these relationships and individual health. They show, for example, that to understand how family relations are differently associated with the individual's health, the specific dyadic partner ought be acknowledged. For both the relationship with the child and with the father, positive relationship perceptions reduced distress. For the relationship with the mother, negative relationship perceptions increased distress. These main effect findings suggest that these different family members may

possess characteristics that are associated with the individual's health. This type of effect is referred to as partner effects (Kenny, Kashy, & Cook, 2006). However it is quite likely that actor effects (Kenny et al., 2006), or effects related to the individual respondent, are also operative in determining links between these family relationships and the health of the individual (Ross, Stein, Trabasso, Woody, & Ross, 2005). Unfortunately, the small sample sizes in the present study precluded explicit exploration of these possibilities.

What the findings show is that the specific valence of family relationship perceptions and their associations with health outcomes are unique to different partners. Future studies, which have larger sample sizes with which to model the interdependence of family relationships (e.g., Ross et al., 2005), can explore whether the pattern of relationship perceptions is a characteristic of the individual, of the dyadic relationship partner, or of the relationship. This would help disentangle whether relationship perceptions are endemic to the relationship being studied and the extent to which they are individual level differences. In addition, future studies can assess the associations between these interdependent family relationships and health outcomes with different family network structures, for example those with only one parent versus those with both.

Is the Scarcity or the Expansion Hypothesis most Applicable to non-Hispanic Black Caribbeans?

The findings from the present study suggest that both the scarcity and the expansion hypotheses are pertinent to the associations between the family relationships and psychological distress of non-Hispanic Black Caribbeans in the United States. The scarcity hypothesis predicted that increased primary social role occupancy would have functioned as a vulnerability factor in these associations. The expansion hypothesis

predicted that increased role occupancy would have been protective, or that too few roles would have been a vulnerability factor. The relevance of either of these again seems to depend on the relationship being assessed.

For the relationship with father none of these factors were relevant. For the relationship with the child the expansion hypothesis was supported in the findings of too few roles functioning as a vulnerability factor. This occurred when reported conflict was high and also when reported positive relations were high. The findings suggest that not having multiple primary roles aggravates the association between relationships and distress both in situations of great tension with a child and when the parent has strong positive perceptions of his/her relationship with the child. This finding is in keeping with the earlier reviewed literature on the vulnerability that immigrant populations face when the main reason for migration is family reunification. Especially at the beginning of this transition, in these cases, the individual's lack of immersion in employment and his/her excessive presence in the household can foster tensions. On the other hand, for those parents who leave children behind in the home country and/or whose work responsibilities are consuming, a close relationship with a child is often ironically a source of sadness and nostalgia. These theorized possibilities should be explicitly investigated in future empirical research. Unfortunately because of the lack of pertinent data, the present study could not empirically disentangle the effects of when specific family members in the household arrived relative to one another, which family members were left behind, or how role responsibilities were distributed among family members in the household.

For the relationship with the child, the finding that many roles functioned as a vulnerability factor for distress when positive relations were high supported the scarcity hypothesis. This suggests that possessing several primary roles is a vulnerability factor when a parent feels strong positive sentiments toward a child. One reason why this might occur is because the parent feels unable to attend to the relationship with as much focus as s/he would like to. Another reason is because the parent's resources might be taxed by feeling the need to provide for the child, or to be supportive to the child in any other way, while having to take care of their other responsibilities. In both these cases, it is likely that the centrality of the role exacerbates the tension they experience in that role. Although not explicitly examined in the present study, this possibility is supported by research that shows that feelings of obligations and responsibilities that intimate relationships foster sometimes function as a vulnerability factor when an individual's resources are widely dispersed (e.g., Martire, Stephens, & Townsend, 2000; Rook & Pietromonaco, 1987). The scarcity hypothesis was also affirmed in the one instance in which the findings departed from the previous ones. Specifically, few roles appeared to protect against distress when reported conflict with mother was high. Using the logic behind the scarcity hypothesis, this finding could be explained in terms of the limited resources that immigrants have at their disposal (Barnett & Baruch, 1987). In these situations, conflictual relations are less distress incurring when the individual does not have to attend to multiple other responsibilities.

Is the Moderating Effect of Social Roles in the Association Between Intergenerational Family Relations and Distress Different for Black Caribbean Men versus Women?

The findings from the present study also suggest that there are differences between non-Hispanic Black Caribbean women and men in the ways in which multiple roles affect the associations between perceptions of family relationships and psychological distress. When findings were assessed for women and men separately, both few roles (expansion hypothesis) and many roles (scarcity hypothesis) acted as vulnerability factors for women in predicting distress in the context of positive relations with an adult child. However, only few roles functioned as a vulnerability factor for men (scarcity hypothesis). Similarly, in terms of the relationship with a mother, few roles were associated with decreased distress (scarcity hypothesis) for men only and not for women. These findings suggest that although the specific relationship provides a different context, multiple roles function as both vulnerability and protective factors in the mental health of both sexes. For men, not having multiple roles was a vulnerability factor with their relationship with an adult child, while having few roles was a protective factor with their relationship with a mother. For women, having multiple roles was both a vulnerability factor and a protective factor in their relationship with an adult child.

Conclusions, Limitations, and Future Directions

The current study adds to the literature examining sex differences in the associations between social relations and mental health. Through addressing the interactions of different intergenerational relations and sex, the study points out the complexity of understanding how family relationships are differently associated with distress for women and men. With the investigations multiple roles, family relationships

and distress, the study contributes to scholarship on how social roles function and affect health in non-normative cases such as disproportionately immigrant populations.

Although there is evidence that in the home countries from which they migrated, tasks and responsibilities might be gendered (Roopnarine et al., 1995), the present study highlights the possibility that relocation might shift responsibilities and transform familial relationships. These changes undoubtedly have mental health implications. These contributions notwithstanding, the present study also has certain limitations.

First, the findings from the present study are unable to speak to the inherent longitudinal nature of research questions involving social relationships and mental health. The direction of the effects specified for the models of relationships with an adult child, with a mother, or with a father on psychological distress has been supported by a large body of theoretical (Antonucci, Langfahl, & Akiyama, 2004; Kawachi & Berkman, 2001) and empirical work. However, the correlational nature of the data in the present study precludes making any causal statements of the effect of family relationships on mental health.

Second, family relationships are interdependent phenomenon and the data in the present study were not able to model these interdependent dynamics. Only a few studies to date have modeled the non-independence of family dynamics in general (e.g., Cook, 2001; Cook & Kenny, 2004; Kashy, Jellison, & Kenny, 2004; Kashy & Kenny, 1990b), and in the context of intergenerational familial relationships (e.g., Delsing, Oud, De Bruyn, & van Aken, 2003; Ross et al., 2005). This body of work has, however, explored mainly relationship outcomes; it has not attended to the health outcomes of non-independence. Unfortunately, the application of such modeling was beyond sample size

limitations of the data. However, this modeling should be a priority for future research to ensure accurate and thorough examinations of the associations between family relationships and health.

Third, although the statistical approach used for the third research question was able to detect the lack of equivalence between women and men of the models for the relationships with a father and mother, it was unable to specify which effects differed. This type of question, while beyond the scope of the present study, merits further investigation. The significant results for the incremental F tests suggests that future research could examine why some of the estimated effects would differ across women and men while others would not. Merely examining the coefficients in the set of models that explored intergenerational solidarity with mother, for example, suggests that affectual solidarity, conflictual solidarity, and number of roles have larger effects on men than on women. Furthermore, those effects exceed those of the sample when men and women are not disaggregated. The descriptive statistics revealed that men report higher (though not statistically significant) levels of affectual solidarity with mother than women and a higher average number of roles. Although the latter is quite likely because of the large proportion of men that are married, the descriptive data suggest that differences in the key variable effects (intergenerational solidarity and number of roles) might contribute to distress differences between men and women. Nevertheless, these findings must be interpreted with caution because it is not clear which effects significantly differ across the groups. Future studies should thus present and test explicit and theoretically guided hypotheses of which effects of which combinations of family relationships and social roles effects predict differences in distress levels between women and men.

While the mean level differences in distress between women and men were not statistically significant, men reported higher distress levels than women. Similarly, the multivariate modeling relevant to the first research question suggested that women reported significantly less psychological distress than did the men in this sample. This occurred in models assessing relationship perceptions with father and those with mother. This finding merits further attention. It is a marked contrast to the general trend in the body of research on sex differences in mental health that shows that women are at a disadvantage (Kessler, McGonagle, Nelson, & Hughes, 1994; McDonough & Stroschein, 2003; McDonough & Walters, 2001; McGrath et al., 1990; Nolen-Hoeksema, Larson, & Grayson, 1999). Because research has shown that sex differences in mental health are highly associated with the roles that women and men occupy (e.g., Aneshensel et al., 1981; Cleary & Mechanic, 1983; Gore & Mangione, 1983), and because the otherwise sexed social roles of immigrant populations undergo extensive reorganization with relocation, future research on the sex differences in the mental health of the Black Caribbeans in the NSAL should include assessments of social roles.

In conclusion, this study finds that sex is a moderator of the associations between non-spousal family relationships and psychological distress, a finding echoed in many other studies. It also finds that multiple roles functions as both a vulnerability and protective factor of psychological distress for both women and men, albeit in different ways and with different relationship partners. These findings extend both the social relations and mental health literature and the social roles and mental health literature by examining hypothesized relationships with a sample of immigrants and persons of immigrant ancestry in the United States. The understanding of the ways in which both

social relations and social roles affect the mental health of immigrant and ethnic minority populations is still in its nascent stages. Progress in these topic areas is largely reliant on statistical modeling of close interpersonal relationships that take the interdependent nature of these relationships into account.

Table 4.1 Descriptive Statistics of Study Variables for Total and by Sex

Characteristic	Unweighted Total (SE)	Weighted Total (SE)	Weighted Women	Weighted Men
Distress, mean	9.11 (.16)	9.13 (.40)	8.64 (.26)	9.69 (.84)
Affectual solidarity				
With child 18 or older, mean	13.93 (.22)	14.70 (.31)	15.00 (.25)	14.39 (.65)
With father, mean	11.01 (.28)	11.40 (.76)	11.04 (1.12)	11.88 (.77)
With mother, mean	13.38 (.20)	13.18 (.65)	12.74 (.90)	13.66 (.54)
Conflictual solidarity				
With child 18 or older, mean	6.05 (.18)	6.02 (.34)	5.40 [†] (.42)	6.63 (.47)
With father, mean	6.48 (.21)	6.91 (.48)	6.60 (.85)	7.37 (.32)
With mother, mean	7.05 (.19)	6.69 (.37)	6.32 (.41)	7.12 (.55)
Social roles				
Number of roles, mean	2.53 (.04)	2.76 (.11)	2.66 (.12)	2.86 (.16)
Spouse role, %	34.57 (.02)	48.91 (.04)	37.32* (.06)	61.54 (.07)
Parent role, %	71.69 (.02)	75.93 (.03)	77.58 (.02)	74.13 (.05)
Son/daughter role, %	74.41 (.02)	75.33 (.04)	75.95 (.04)	74.66 (.07)
Worker role, %	72.03 (.02)	76.26 (.03)	77.26 (.04)	75.16 (.05)
Socio-Demographic Controls				
Household income, mean	42, 850 (1, 585)	51, 499 (4, 332)	42, 756** (5, 318)	61, 038 (5, 437)
Age, mean	41.64 (.65)	43.11 (1.26)	42.15 (1.14)	44.15 (2.08)
Sex, %				
Male	34.07 (.02)	47.82 (.05)	N/A	N/A
Female	65.93 (.02)	52.18 (.05)	N/A	N/A
Marital status				
Married	34.57 (.02)	48.91 (.05)	37.32** (.06)	61.54 (.07)
Partner	7.29 (.01)	5.87 (.01)	5.35 (.01)	6.44 (.02)
Separated/divorced/widowed	22.54 (.02)	18.73 (.03)	29.46** (.06)	7.02 (.03)
Never married	35.59 (.02)	26.49 (.03)	27.86 (.03)	25 (.05)
Where most of immed family live, %				
In same state	56.75 (.02)	50.49 (.03)	49.10 (.05)	52.01 (.05)
In another state	16.41 (.02)	16.52 (.03)	17.07 (.04)	15.92 (.05)
Out of the United States	26.84 (.02)	32.99 (.04)	33.83 (.07)	32.07 (.05)
Immigration factors				
Ethnic sub-group, %				
West Indian	82.37 (.02)	87.51 (.03)	83.46** (.04)	91.93 (.02)
Haitian	17.63 (.02)	12.49 (.03)	16.54 (.04)	8.07 (.02)
Nativity, %				
Born in the United States	29.49 (.02)	23.70 (.03)	26.07 (.03)	21.10 (.06)
Born outside the United States	70.51 (.02)	76.30 (.03)	73.93 (.03)	78.90 (.06)

Note. † < .10. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 4.2 Hierarchical Regression Analyses for Variables Predicting Distress for Respondents with a Child 18 or Older ($n = 238$)

Variable	Model I		Model II		Model III	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Age	-.00	.00	-.00	.00	-.00	.00
Household income	-.00*	.00	-.00*	.00	-.00*	.00
Foreign-born	-.13	.10	-.10	.08	-.11	.07
Haitian	.15	.11	.14	.13	.16	.13
Immediate family other state	-.09	.07	-.06	.09	-.07	.09
Immediate family outside U.S.	.11	.14	.12	.13	.12	.13
Affectual solidarity			-.02*	.01	-.04*	.01
Conflictual solidarity			.02	.01	.00	.02
Female			-.10	.12	-.13	.11
Affectual solidarity x Female					.04 [†]	.02
Conflictual solidarity x Female					.03	.02
R^2	.15		.23		.26	
F for change in R^2	3.41**		4.48**		4.45*	

Note. Affectual and conflictual solidarity were centered at their means.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 4.3 Hierarchical Regression Analyses for Variables Predicting Distress for Respondents with Father ($n = 274$)

Variable	Model I		Model II		Model III	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Age	-.01*	.00	-.01*	.00	-.01*	.00
Household income	-.00	.00	-.00	.00	-.00	.00
Foreign-born	-.04	.11	-.05	.10	-.06	.10
Haitian	-.01	.09	-.02	.10	-.03	.09
Immediate family other state	-.05	.11	-.07	.10	-.07	.10
Immediate family outside U.S.	-.02	.10	-.02	.08	-.02	.08
Affectual solidarity			-.02 [†]	.01	-.03**	.01
Conflictual solidarity			-.00	.01	-.01	.01
Female			-.13 [†]	.07	-.15*	.07
Affectual solidarity x Female					.03*	.01
Conflictual solidarity x Female					.03	.02
R^2	.14		.20		.23	
F for change in R^2	2.96**		4.89**		3.51*	

Note. Affectual and conflictual solidarity were centered at their means.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 4.4 Hierarchical Regression Analyses for Variables Predicting Distress for Respondents with Mother ($n = 368$)

Variable	Model I		Model II		Model III	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Age	-.00 [†]	.00	-.00	.00	-.00	.00
Household income	-.00**	.00	-.00**	.00	-.00**	.00
Foreign-born	.00	.07	.04	.06	.04	.06
Haitian	-.08	.11	-.05	.11	-.04	.10
Immediate family other state	-.11	.09	-.11	.08	-.11	.07
Immediate family outside U.S.	-.06	.11	-.02	.09	-.04	.08
Affectual solidarity			-.01	.01	-.01	.02
Conflictual solidarity			.02 [†]	.01	.04*	.01
Female			-.18*	.08	-.19**	.08
Affectual solidarity x Female					.00	.02
Conflictual solidarity x Female					-.04**	.01
R^2	.13		.24		.28	
F for change in R^2	4.84***		6.61***		4.06*	

Note. Affectual and conflictual solidarity were centered at their means.

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 4.5 Regression Analyses for Solidarity and Number of Roles Variables Predicting Distress for Respondents with a Child 18 or Older by Sex

Variable	Total (<i>n</i> = 238)		Women (<i>n</i> = 153)		Men (<i>n</i> = 85)	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Age	-.00	.00	-.00	.00	-.00	.00
Household income	-.00*	.00	-.00*	.00	-.00*	.00
Foreign-born	-.08	.08	-.07	.11	-.29**	.10
Haitian	.15	.10	.22	.14	.15	.20
Immediate family other state	-.04	.06	.08	.07	-.21**	.06
Immediate family outside U.S.	.14	.12	.05	.07	.22	.15
Affectual solidarity	.07†	.03	.06*	.03	.10	.06
Conflictual solidarity	-.03	.03	.00	.04	-.08*	.04
Number of roles	.01	.03	.03	.05	.03	.04
Affectual solidarity x Roles	-.03*	.01	-.02*	.01	-.04*	.02
Conflictual solidarity x Roles	.02†	.01	.01	.02	.02†	.01
<i>R</i> ²	.29		.27		.50	

Note. Affectual and conflictual solidarity and number of roles were centered at their means. Beta weights for each group are from the final step of the regression equations and represent the unique contribution of each variable.

An insignificant Chow test ($F = 1.55, p = .23$) revealed that the main effect parameters for affectual solidarity, conflictual solidarity, number of roles and the parameters for the interaction effects between each of the solidarity variables and number of roles were similar across the groups. This suggested that the coefficients were statistically similar.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 4.6 Regression Analyses for Solidarity and Number of Roles Variables Predicting Distress for Respondents with Father by Sex

Variable	Total (<i>n</i> = 274)		Women (<i>n</i> = 179)		Men (<i>n</i> = 95)	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Age	-.01*	.00	-.01	.00	-.01	.01
Household income	-.00	.00	-.00**	.00	-.00	.00
Foreign-born	-.02	.10	-.04	.09	-.12	.20
Haitian	-.03	.09	.05	.14	-.03	.13
Immediate family other state	-.07	.10	.07	.10	-.27†	.13
Immediate family outside U.S.	-.02	.09	.00	.09	-.03	.16
Affectual solidarity	-.03	.02	-.01	.02	-.03	.03
Conflictual solidarity	-.00	.02	.03	.03	-.03	.03
Number of roles	-.04	.04	.02	.04	-.05	.09
Affectual solidarity x Roles	.01	.01	.00	.01	.00	.01
Conflictual solidarity x Roles	.00	.01	-.00	.01	.01	.01
<i>R</i> ²	.19		.20		.29	

Note. Affectual and conflictual solidarity and number of roles were centered at their means. Beta weights for each group are from the final step of the regression equations and represent the unique contribution of each variable.

An significant Chow test ($F = 4.52, p = .04$) revealed that the main effect parameters for affectual solidarity, conflictual solidarity, number of roles and the parameters for the interaction effects between each of the solidarity variables and number of roles were different across the groups. This suggested that the coefficients were statistically different.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$

Table 4.7 Regression Analyses for Solidarity and Number of Roles Variables Predicting Distress for Respondents with Mother by Sex

Variable	Total (<i>n</i> = 368)		Women (<i>n</i> = 248)		Men (<i>n</i> = 120)	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Age	-.01	.00	-.01*	.00	.00	.00
Household income	-.00*	.00	-.00*	.00	-.00	.00
Foreign-born	.09	.06	.04	.06	.11	.12
Haitian	-.05	.10	.08	.10	-.14	.12
Immediate family other state	-.09	.06	.13 [†]	.07	-.26*	.11
Immediate family outside U.S.	-.02	.09	.04	.06	-.06	.16
Affectual solidarity	.02	.02	.01	.02	.04	.04
Conflictual solidarity	-.02	.02	-.03	.02	-.00	.02
Number of roles	-.02	.03	.01	.03	-.08	.05
Affectual solidarity x Roles	-.01	.01	-.01	.01	-.02	.01
Conflictual solidarity x Roles	.02**	.01	.01	.01	.01 [†]	.01
<i>R</i> ²	.24		.17		.43	

Note. Affectual and conflictual solidarity and number of roles were centered at their means. Beta weights for each group are from the final step of the regression equations and represent the unique contribution of each variable.

An significant Chow test ($F = 9.23, p = .00$) revealed that the main effect parameters for affectual solidarity, conflictual solidarity, number of roles and the parameters for the interaction effects between each of the solidarity variables and number of roles were different across the groups. This suggested that the coefficients were statistically different.

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$

Figure 4.1 The moderating effect of sex on the association between affectual solidarity with a child and distress

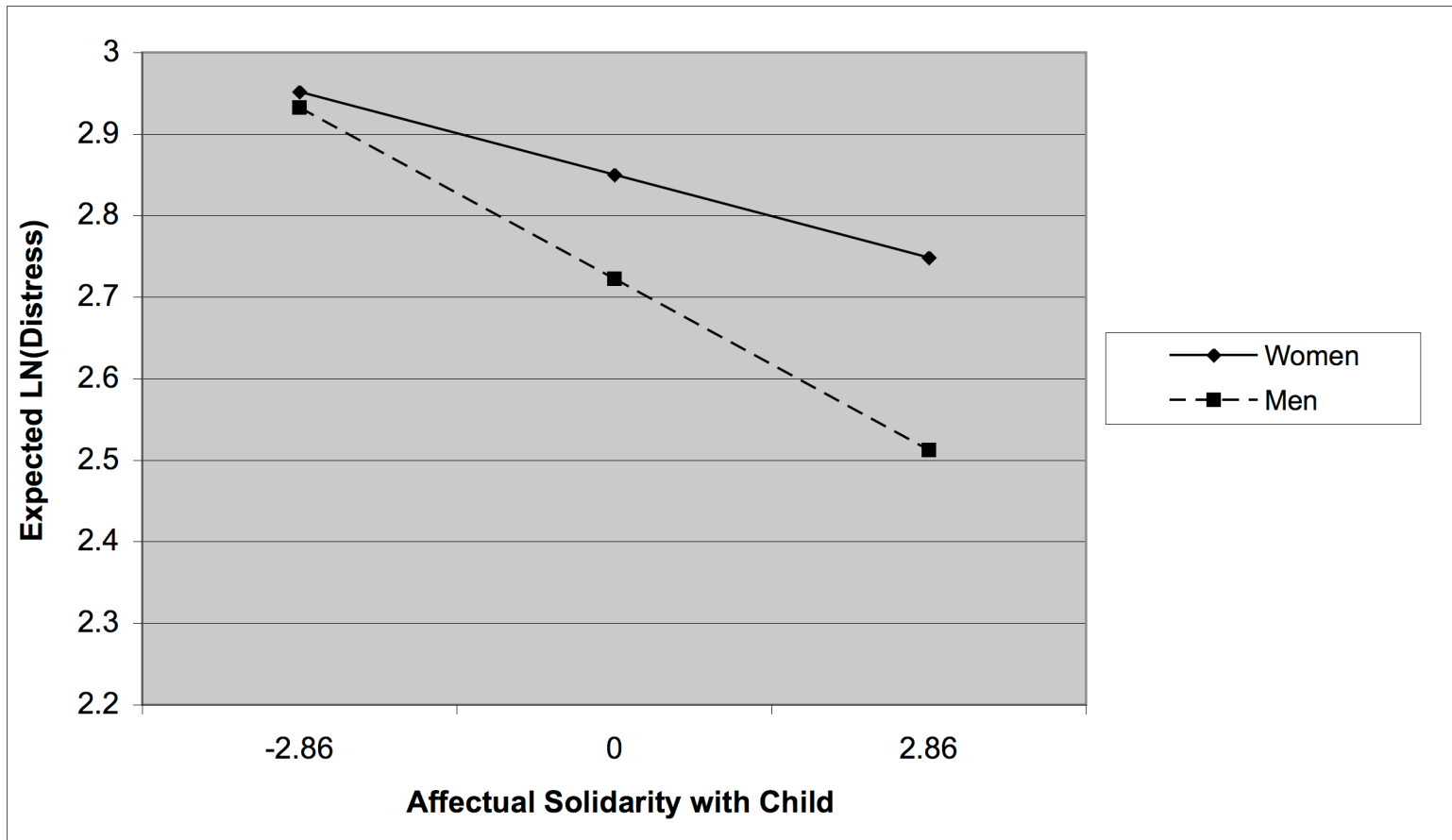


Figure 4.2 The moderating effect of sex on the association between affectual solidarity with father and distress

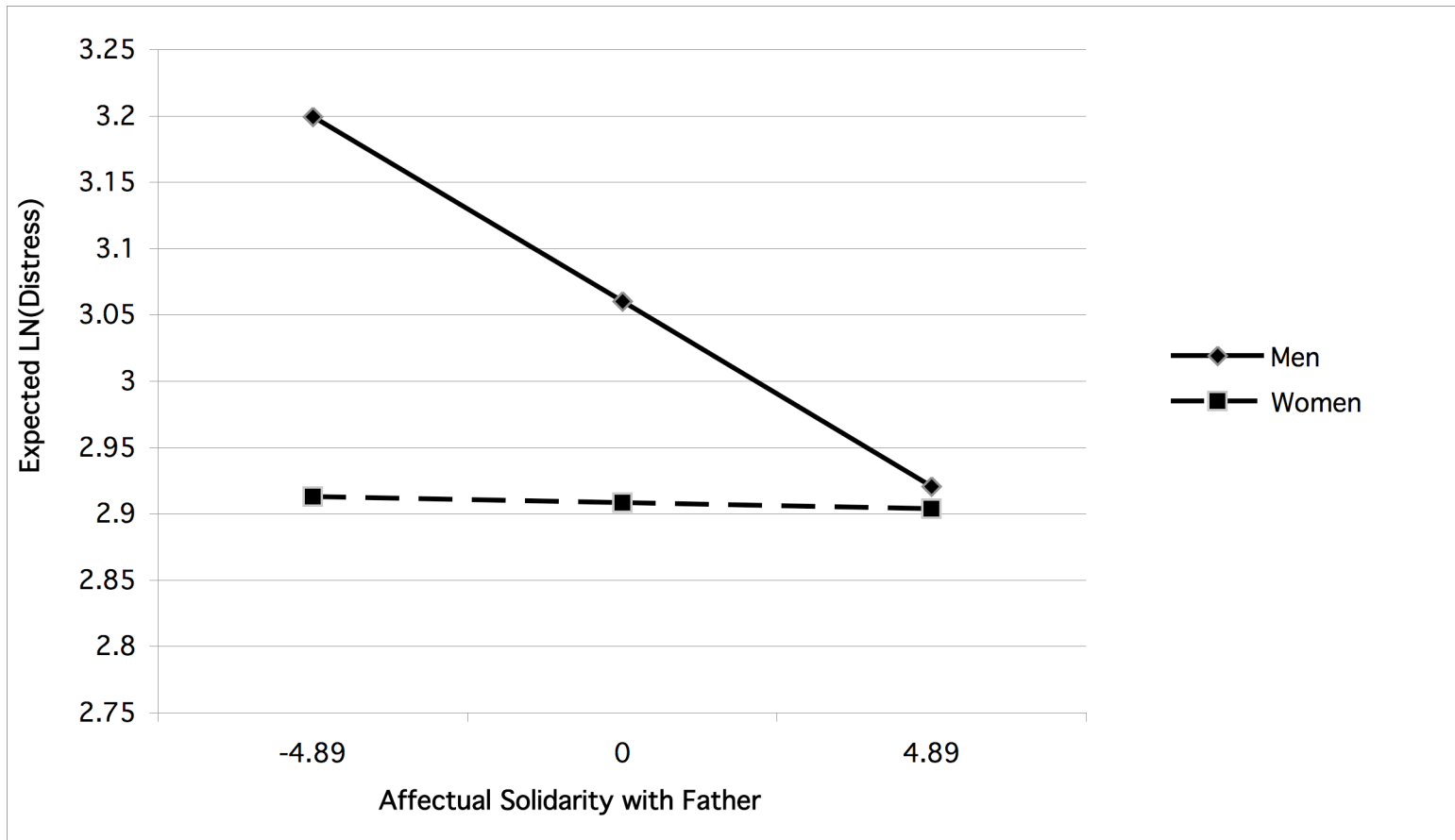


Figure 4.3 The moderating effect of sex on the association between conflictual solidarity with mother and distress

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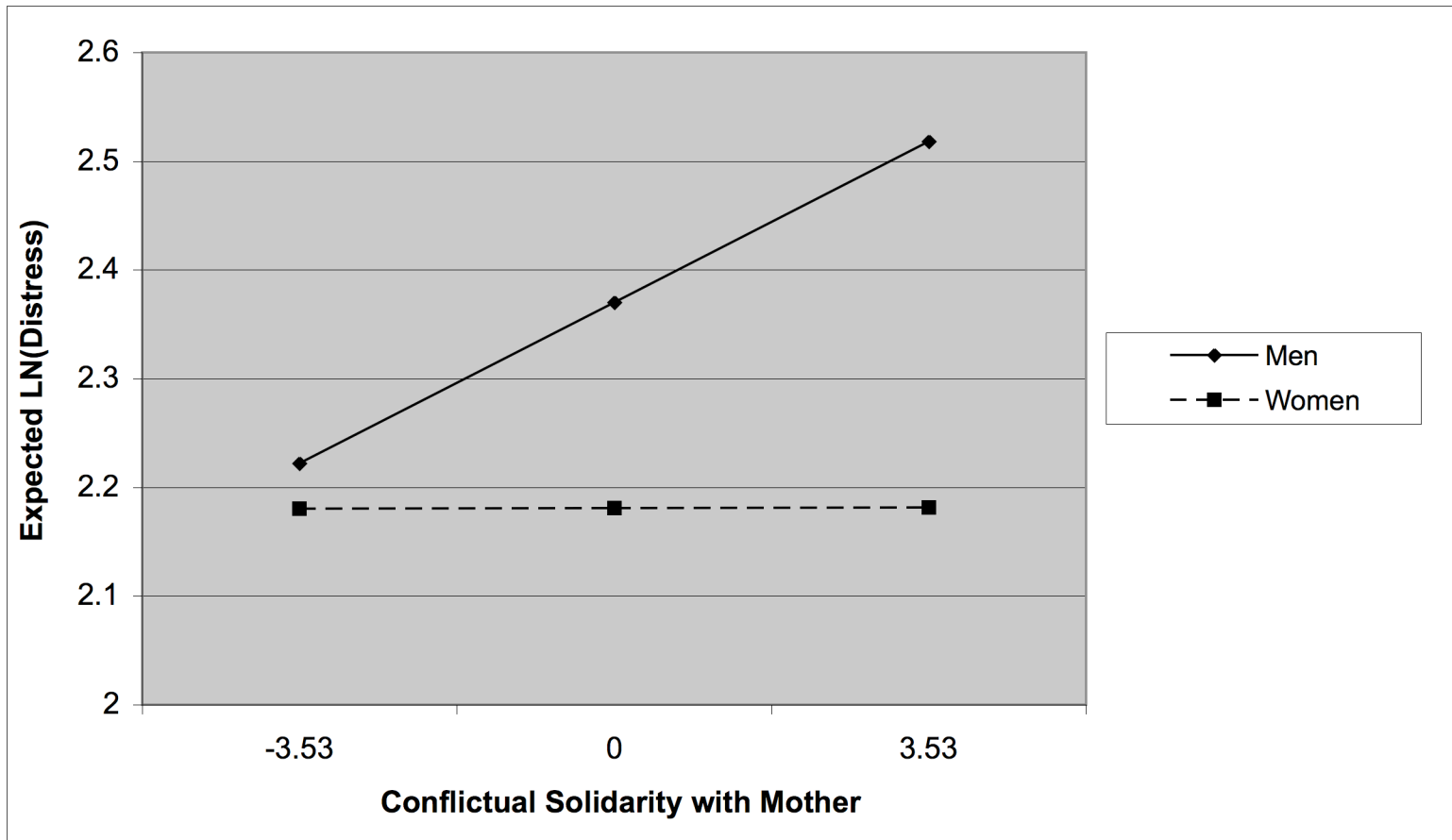


Figure 4.4 The moderating effect of number of roles on the association between affectual solidarity with child and distress for the total sample

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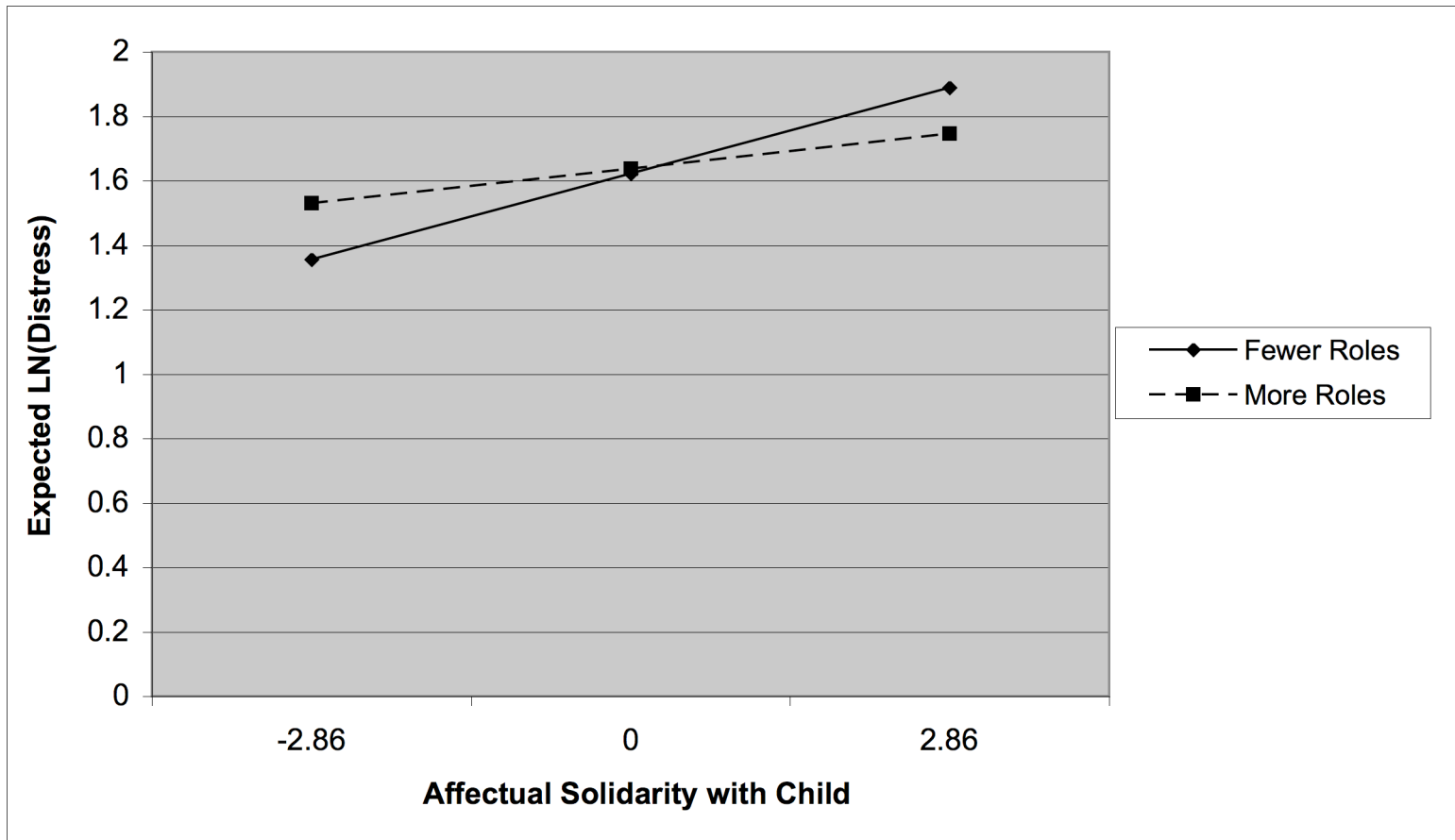


Figure 4.5 The moderating effect of number of roles on the association between affectual solidarity with child and distress for the total sample

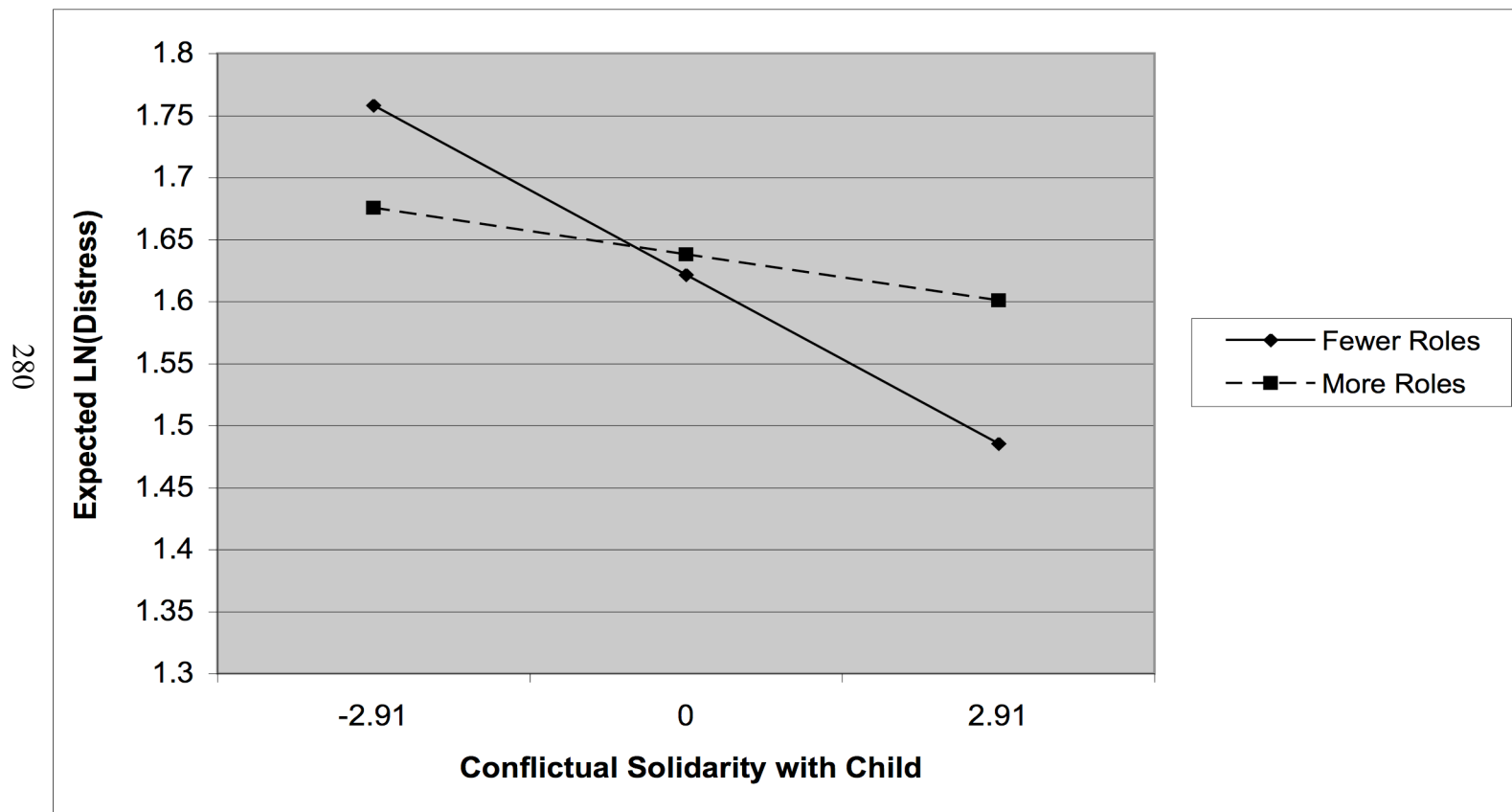


Figure 4.6 The moderating effect of number of roles on the association between affectual solidarity with child and distress for women

281

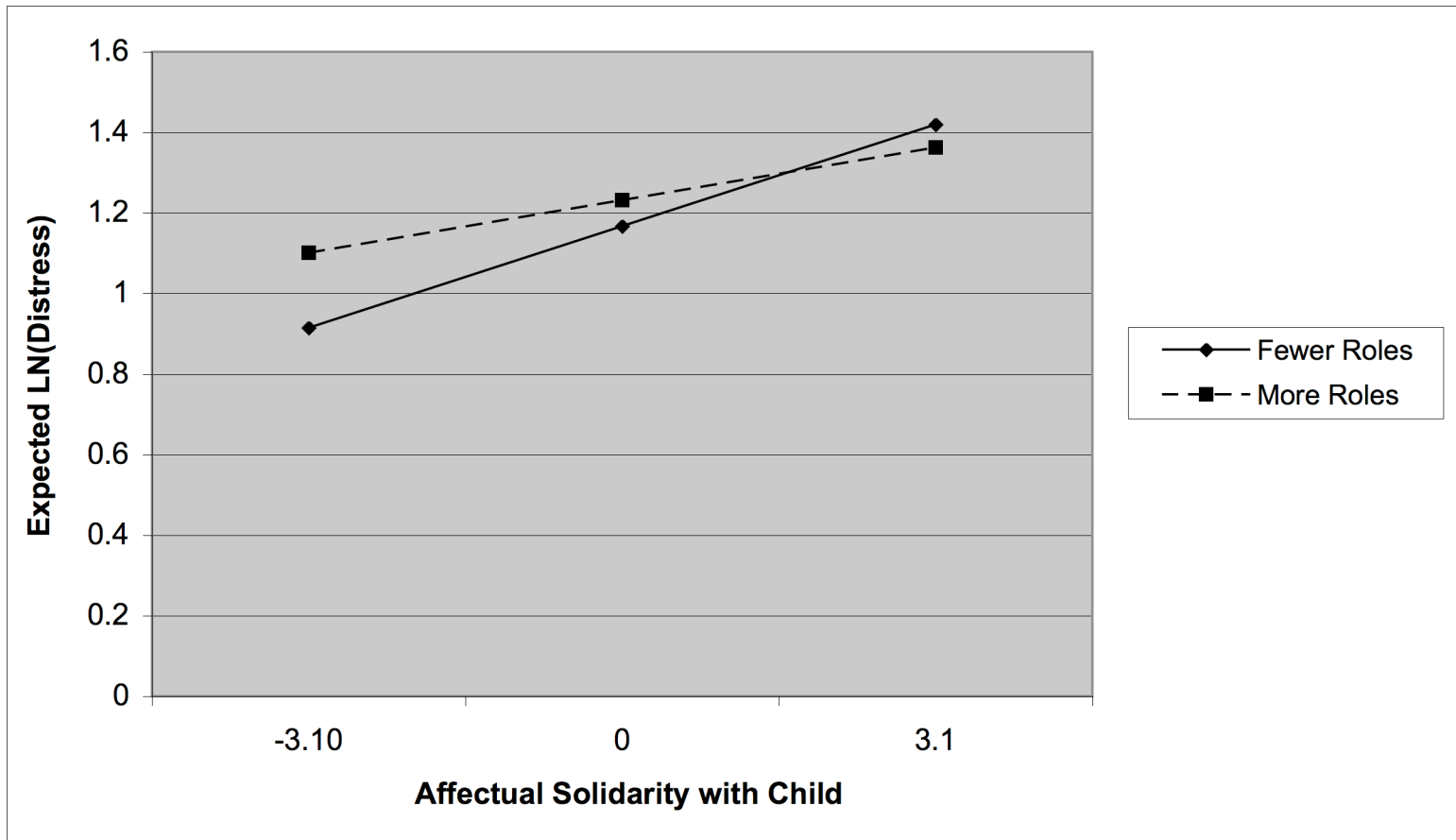


Figure 4.7 The moderating effect off number of roles on the association between affectual solidarity with child and distress for men

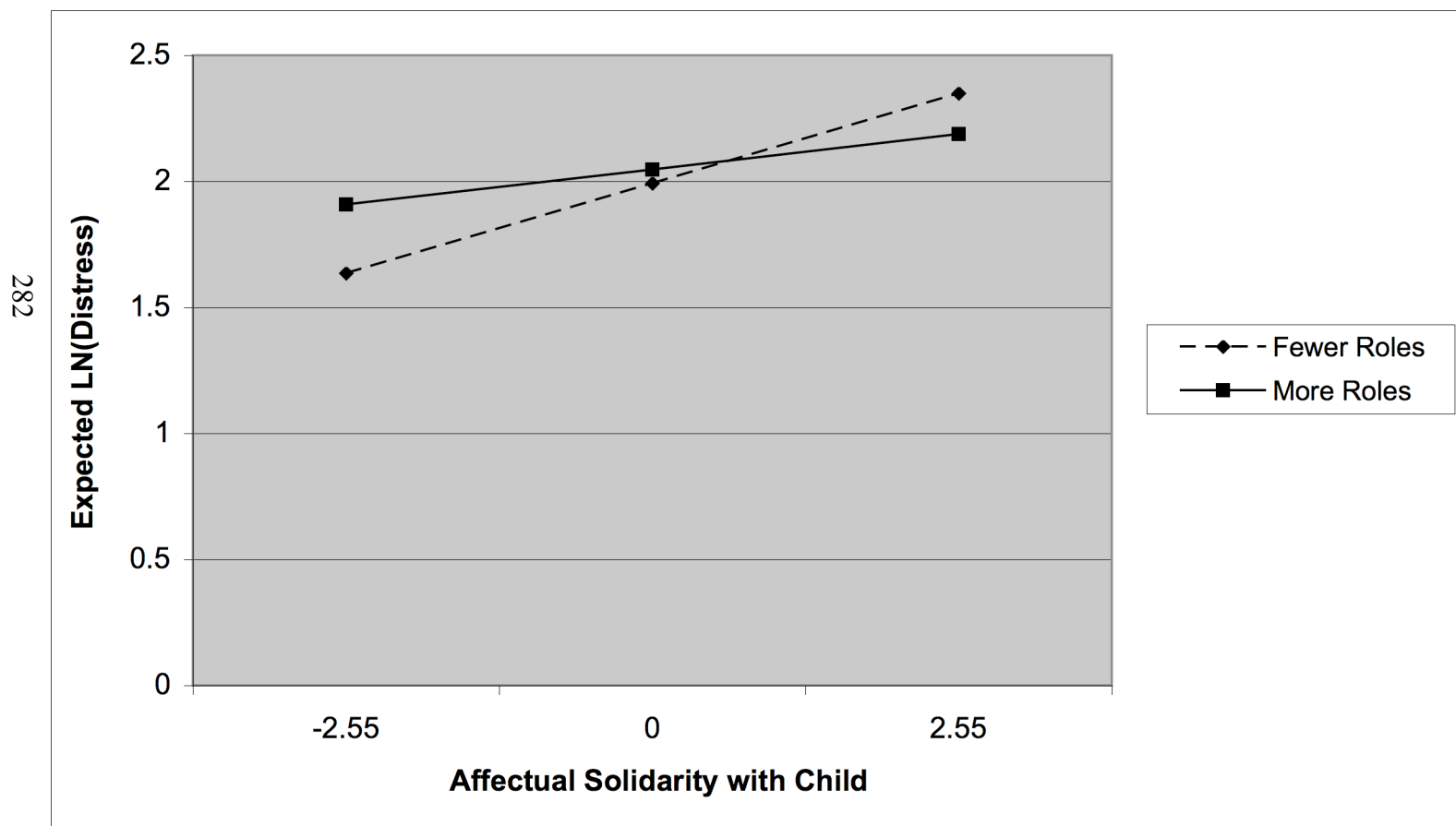


Figure 4.8 The moderating effect of number of roles on the association between conflictual solidarity with child and distress for men

283

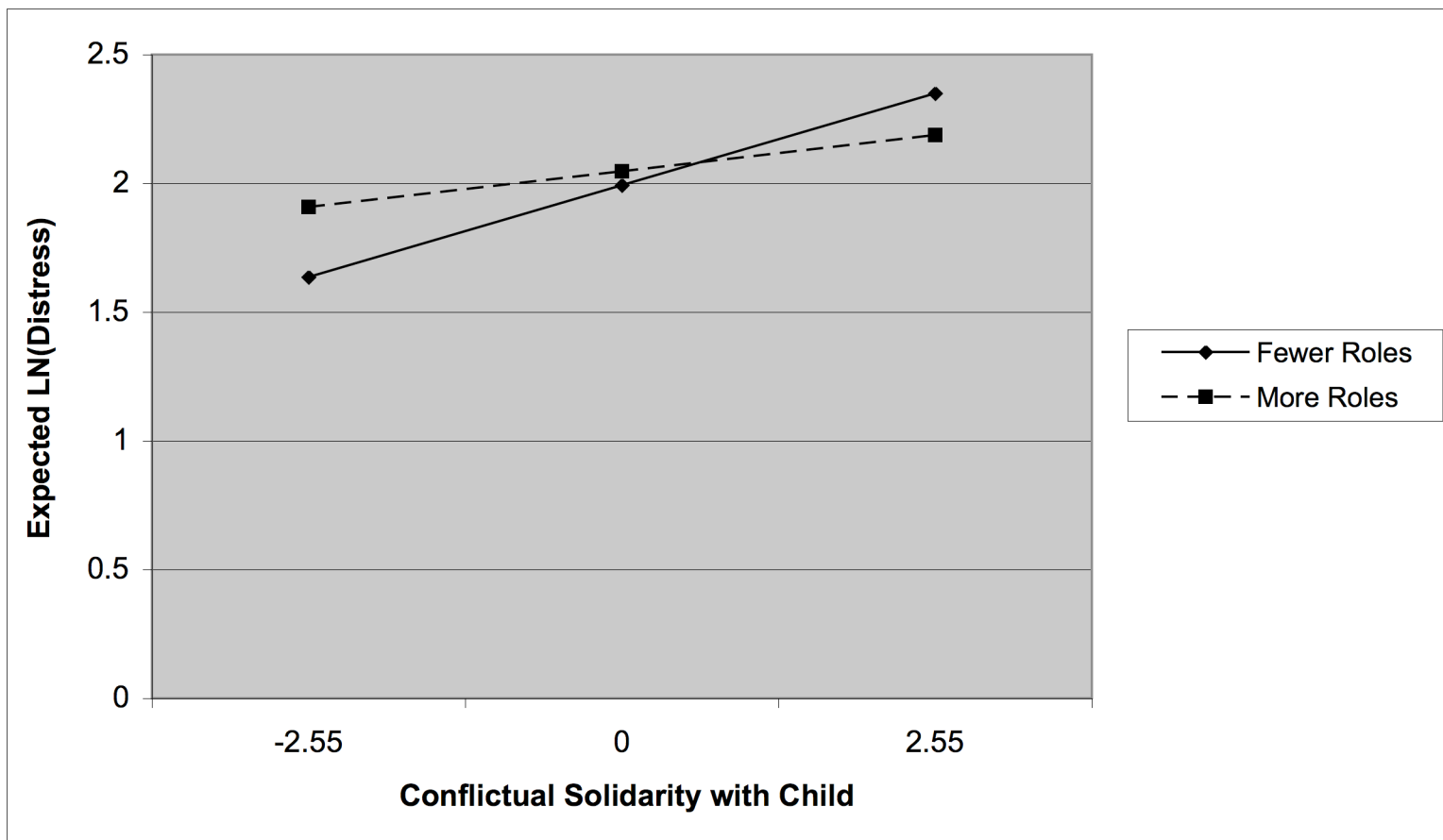


Figure 4.9 The moderating effect of number of roles on the association between conflictual solidarity with mother and distress for the total sample

284

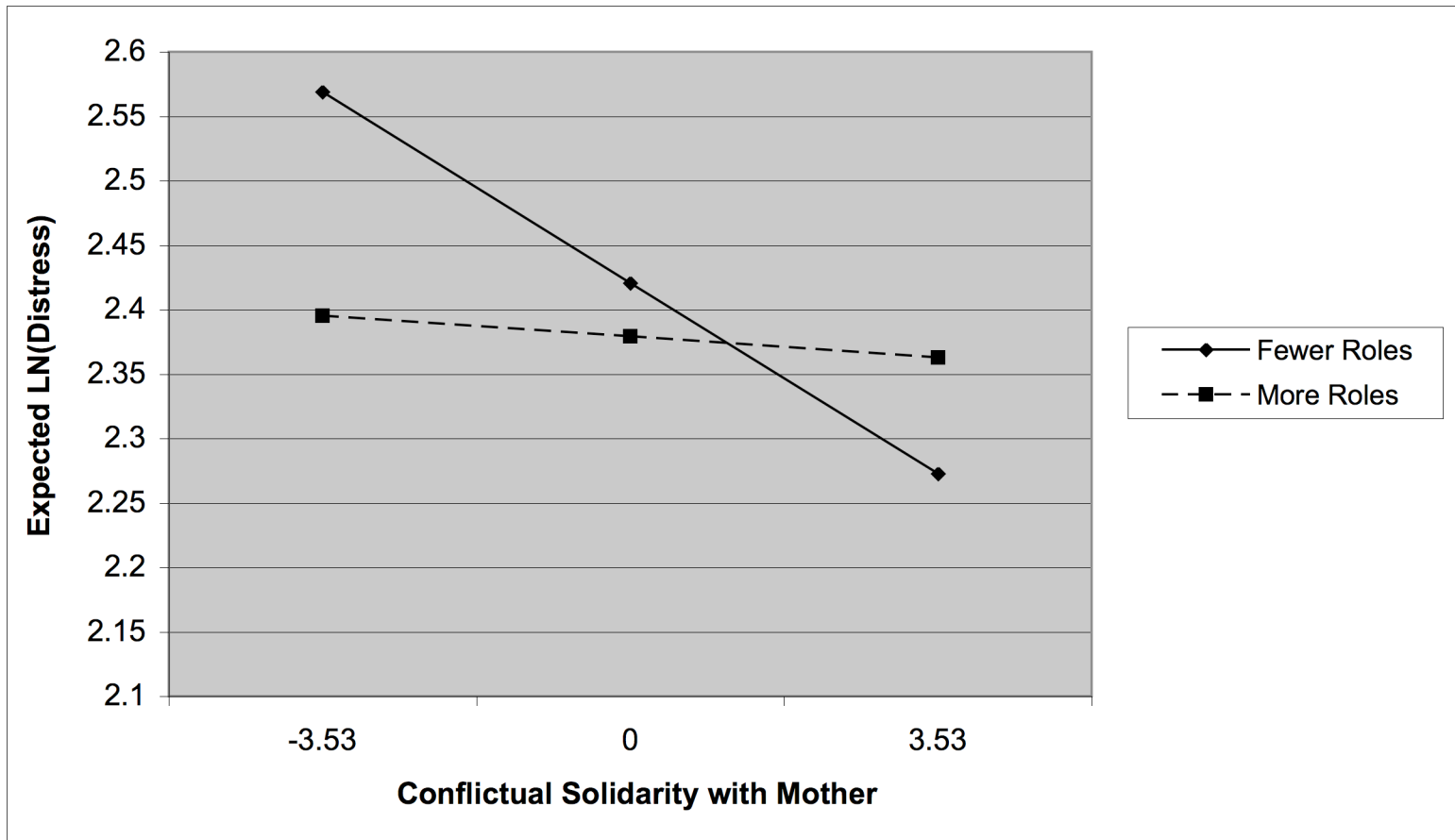
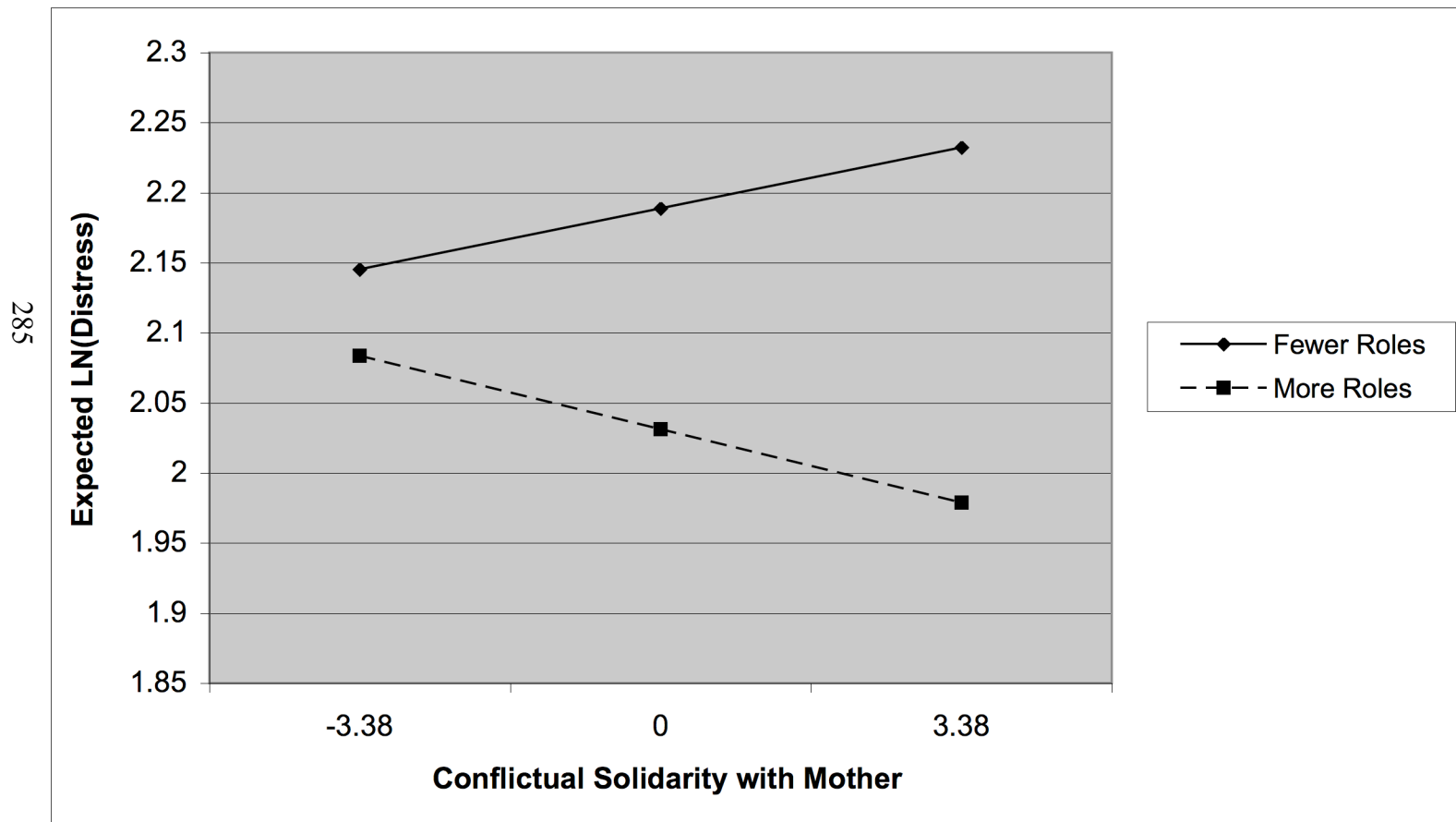


Figure 4.10 The moderating effect of number of roles on the association between conflictual solidarity with mother and distress for men



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CHAPTER FIVE

CONCLUSION

The increasing number of racial and ethnic minorities in the United States suggests an urgency with which their health issues must be attended to. Such attention must move beyond simple health profiles to explorations of population specific mechanisms that address health outcomes. Combined the three studies in this dissertation provided information about how discrimination, social support, personal control, family relationships and social roles were associated with the mental health of one of these racial and ethnic groups in the United States. Considered jointly, the studies offered insight into the contextual and individual-level differences that affect the mental health of non-Hispanic Black Caribbeans. The first two studies suggested that both types of factors operate in tandem. The third study suggested that individual-level factors operate at a high level of complexity in their associations with mental health. Collectively, these three studies pointed to the necessity of contextually sensitive research on the mental health of racial and ethnic minorities.

Integrating the Three Studies

Findings from all three studies emphasized the importance of varying aspects of social relations as both vulnerability and protective factors in the lives of ethnic minorities and immigrants. The dissertation moved from a wide lens examination of social relations (interpersonal discrimination and group closeness) in Study 1, to an

intermediate focus in Study 2 (interpersonal discrimination and social support in the extended family network). With Study 3, it ended by zooming in on social relations, examining the role of relationships with immediate family members.

Similarly, all three studies investigated individual level factors that predicted distress. In their focus on Black Caribbeans, they examined how the real world context of migration nuanced psychological processes that have often been studied in laboratories (e.g., Branscombe & Ellemers, 1998; Branscombe, Schmitt, & Harvey, 1999) or with university aged populations (e.g., Deaux, 2006; Deaux et al., 2007; Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003; Sellers & Shelton, 2003). By using a national probability survey, they provided findings that were generalizable to other immigrants with similar characteristics.

Study 1 documented the multiple ways in which closeness to the ethnic group and closeness to racial group—two distinct constructs in the lives of Black immigrants and those of immigrant ancestry—affected the relationship between discrimination and distress. It also examined whether and how those associations varied depending on immigration factors. The study found that the distinct role that closeness to group played varied according to the type of discrimination that was reported.

Specifically, closeness to ethnic group functioned as a buffer in the association between subtle discrimination and distress, while closeness to racial group operated in the same capacity in relation to severe discrimination. On the other hand, closeness to ethnic group exacerbated the correlation between severe discrimination and distress, while closeness to racial group served the same function with respect to subtle discrimination.

In looking at immigration factors, ethnic and racial group closeness operated as buffering and exacerbating forces only among those born in the United States. Closeness to ethnic group attenuated subtle discrimination's effect on distress but worsened severe discrimination's effects. Similarly, closeness to racial group cushioned severe discrimination's effects on distress but intensified subtle discrimination's effects.

Having examined the ways in which closeness to ethnic and racial group buffered or exacerbated the relationship between discrimination and distress among non-Hispanic Black Caribbeans and the variations in these associations according to selected immigration factors, the second study investigated possible mediator and moderator mechanisms via which discrimination predicted distress. Study 2 found confirmation of a mediation model for personal control and a main effect model for social support. Analyses showed that subtle discrimination was associated with increased distress via a decrease in personal control. They also revealed that emotional support functioned as an independent impediment to distress.

Studies 1 and 2 explored contextual and individual level factors without attending to gender. The final study of this dissertation, Study 3, directly investigated the ways in which the effect of social relations on distress was different or similar for women and men. The findings suggested that men's relationships with an adult son/daughter, and with either parent influenced their levels of psychological distress. It also found that multiple social roles affected men and women similarly, acting as both vulnerability and protective factors. However, the study demonstrated that the vulnerability of protective effects of social roles depended on the relationship that was assessed.

Findings from Studies 1 and 2 focused on the distress-increasing role that chronic discrimination played in the lives of non-Hispanic Black Caribbeans. Both studies suggested that subtle discrimination and severe discrimination had different relationships with psychological distress and other predictor variables. This could be understood in the context of the particular stressors that immigrants confront.

One main stressor, for example, is whether they are in the country legally and how long they are able to be in the country legally (Finch & Vega, 2003). These types of issues are also intricately tied to access to opportunities that can facilitate a better quality of life; opportunities which natives and legal permanent residents often take for granted. This increases sensitivity to and awareness of blocked pathways and is thus highly related to perceptions of discrimination.

However, immigrants also experience other types of discriminatory treatment because of their differences from native populations. These include but are not limited to their styles of dressing, their physical appearance, their primary language, their accent, the type of visa on which they entered the country to which they immigrated, and their skin color. The illegality of discrimination on account of many of these conditions, in tandem with the legality of restricting opportunities to natives and legal permanent residents, are recipes for heightened sensitivity and confusion when making sense of discriminatory interpersonal actions. It is quite possible that discrimination against immigrants that is not legally sanctioned increases the exposure to instances of subtle discrimination. On the other hand, legally based discrimination against immigrants likely increases susceptibility to overt discrimination.

Figuring out the exact grounds for discrimination that is leveled against them is sometimes a complex task because of the ambiguity of the situations. This type of ambiguity has been linked to a wear on emotional and cognitive resources in studies of discrimination in other populations (e.g., Brondolo et al., 2008; Harrell, Hall, & Taliaferro, 2003; Krieger, 2000; Meyer, 2003; Oyserman, Uskul, Yoder, Nesse, & Williams, 2007; Pavalko, Mossakowski, & Hamilton, 2003; Ruggiero & Taylor, 1995). Because this ambiguity interfaces with different types of discrimination, the findings from Study 1 suggest that the divergent effects of subtle and severe discrimination ought to be examined more explicitly among immigrant populations, as it has among others (e.g., Deitch et al., 2003; Gyll, Matthews, & Bromberger, 2001).

Similarly, the findings from Study 1 nuanced the discussion on identity issues among ethnic minorities. The study added complexity to discussions about when and how group identity functions as a buffer and when it magnifies discrimination's effects on health. It showed that a sense of closeness to their ethnic group had implications for the mental health of Black Caribbeans that were distinct from the effects of a sense of closeness to the racial group with which they were identified in the United States.

Many studies conflate these two identifications among ethnic minorities, using the default of speaking about race when discussing Black minorities and ethnicity when focused on immigrant and immigrant ancestry populations (Quintana, 2007). However, this type of approach leads to a limited appreciation of what group identification means to individuals. At best, it is inadequate, as it fails to appreciate the heterogeneity that lies within various groups. It is also an important oversight because race is significant in the lives of immigrants and those of immigrant ancestry and ethnicity is a crucial driving

force in the lives of Blacks, including native Black populations. Research disentangling the discrete links between these types of identification and various outcomes, including health and well-being is still in its early stages (e.g., Hall & Carter, 2006). However, such research is imperative to a more accurate understanding of the role that group identification plays in the lives of ethnic minorities, especially in relation to their mental health in the context of discrimination.

The findings from Studies 2 and 3 revealed the crucial role that family relations play in the lives of Black Caribbeans. Study 2 showed that social support had direct distress reducing effects. Study 3 elucidated how relations with different intergenerational family members were related to distress. These findings can be understood using a perspective that appreciates the importance of family relations among immigrant and ethnic minority populations.

For immigrants to the United States whose main category of entry is reunion with family members (Kent, 2007; Logan, 2007), the relatives who precede their arrival in the United States serve multiple functions. Earlier arrivants assist their migrating kin by preparing the way for their immigration, facilitating the transition to the post-migration context, providing the physical space and resources needed for resettlement, offering comfort and assurance when the inevitable struggles that accompany migration appear, and ensuring that someone else is there when the inevitable rewards or joys of migration are experienced. In the case of those without family members to share the experience, the positive and negative aspects of migration intensify. It is no wonder then that social support from the family had a direct distress-reducing effect in Study 2, nor that, in Study 3, family relationships aggravated or reduced the distress.

Vulnerability and Protective versus Risk and Resource Factors in the Mental Health of Black Caribbeans

Combined the three studies painted a more detailed picture of the circumstances under which certain factors functioned as vulnerability factors while others acted as protective factors. Both vulnerability and protective factors operate via moderation effects (Holmbeck, 1997; Holmbeck, Friedman, Abad, & Jandasek, 2008; Rose, Holmbeck, Coakley, & Franks, 2004). This contrasts with risk and resource/promotive factors that function in additive capacities (Holmbeck et al., 2008; Rose et al., 2004).

With respect to the mental health of Black Caribbeans, vulnerability factors are moderators that increase the likelihood of distress in the presence of adversity. Protective factors are moderators that reduce the likelihood of distress in similar conditions. What have the studies shown to be the vulnerability and protective factors in the mental health of Black Caribbeans in the United States? Closeness to ethnic and racial group functioned both as vulnerability and protective factors. As discussed earlier, these effects were dependent on the type of discrimination stressor with which they interacted. Fewer social roles functioned as a protective factor in the presence of high conflict with mothers.

The dissertation studies also shed light on risk and promotive factors. These are factors that have effects on distress regardless of the presence or absence of a stressor (Holmbeck et al., 2008). Personal control and emotional support operated as promotive factors in the mental health of Black Caribbeans, while chronic discrimination and conflict with family members were risk factors.

Implications for the Study of Ethnic Minority and Immigrant Health

Immigrant populations must be studied within the context of their migratory experience. Research suggests that when migration is staggered, as it is among Black Caribbean immigrant family members, selectivity effects vary depending upon the order in which the individual migrates. Those who migrate first tend to be the most selected (Bashi, 2007; Jasso, Massey, Rosenzweig, & Smith, 2004; Model, 2008). This nuance of differences among immigrants has yet to be examined within the context of immigrant health.

Although much has been conjectured about why immigrants have such different, and in many cases better, mental health outcomes than native populations, studies generally fail to explicitly model the differences in the lives and circumstances of immigrants compared to the second generation and beyond. There is even less examination of the heterogeneity of experiences based on gradations of generation status (e.g. 1.5 generation, 1.25 generation). This neglect in the literature as well as the tendency to use immigrant status as a proxy for acculturation to the United States, has led to a general confusion about why the differences in health outcomes occur. The studies in this dissertation suggested that the incredible heterogeneity within immigrant populations must be considered in attempting to move beyond the confusion.

For example, Studies 1 and 2 showed that the two factors of the Chronic Discrimination Scale: subtle discrimination and severe discrimination had distinct effects on psychological distress. One of the main mechanisms via which those born in the United States experience worse health outcomes is through greater sensitivity to

discrimination (e.g., Lee, 2003; Viruell-Fuentes, 2007). Such exposure is a natural consequence of increased time in the United States.

Yet, such exposure is also dependent on the specific immigrant context in which the individual lives. For those who live within ethnic enclaves, there may be some protection against these effects (Logan, Zhang, & Alba, 2002; Perez, 1986). These are the types of nuances that the dissertation studies suggested. These nuances must be examined in greater detail in studies of immigrant and ethnic minority health. However, because the literature on these patterns tends to be located within the sociology and anthropology disciplines, they are often not taken into consideration in public health and psychological studies.

Limitations and Future Directions

The findings from the three studies in this dissertation pointed to the importance of contextual and individual level factors in the mental health of racial and ethnic minorities in the United States. In this way, it makes a substantial contribution to understanding the mechanisms involved in mental health disparities in one of these groups. However, the project also has certain limitations.

The first limitation concerns the cross-sectional nature of the data. In each study, the relationships investigated were substantiated by longitudinal studies that supported the directions specified in the connections between variables. Nevertheless, the findings from each study have to be interpreted in light of the correlational nature of the cross-sectional NSAL data.

Study 3's findings suggest that the associations between relationships with family members and mental health revolve around the ways in which different family members

interact with the respondent. These findings are highly suggestive of the non-independent nature of family dynamics. Unfortunately the present study was unable to examine these dynamics because of sample size limitations.

Future studies, particularly on ethnic minority groups, would do well to incorporate this non-independence in assessing the links between social relations and mental health. Dyadic relationships (e.g. between a parent and child), triadic relationships (e.g. between both parents and a child), and more complex social relations modeling (e.g. between three intergenerational family members, or between two parents and two or more children) can be assessed in future studies. Triadic and more complex family relationships can be assessed with the Social Relations Model (Bond, Horn, & Kenny, 1997; Kashy, Jellison, & Kenny, 2004; Kashy & Kenny, 1990; Kenny, Kashy, & Cook, 2006; Ross, Stein, Trabasso, Woody, & Ross, 2005). Using this technique discussed in Study 3's conclusion, it is possible to learn more about family dynamics, including, for example, reciprocity, and how these family dynamics affect health.

In Studies 1 and 2 factor analyses of the Chronic Discrimination Scale suggested two distinct factors: subtle discrimination and severe discrimination. Although it was not within the scope of the dissertation as originally conceptualized, the ways in which these two different types of discrimination operate in the lives of immigrants and those of immigrant ancestry merits further study.

Similarly, another unintentional finding merits additional attention. While not explicitly included in the scope of the original research, Study 1 showed that there were differences in how the two discrimination factors interacted with different types of group

identity. Future studies should, with the help of sound theory, explicitly model these associations and how they predict mental health.

Another key limitation of the dissertation is its focus on one mental health outcome across the three studies. As discussed in the introduction, the examination of one outcome across three distinct empirical studies is invaluable. When investigating one ethnic group, it presents a lucid depiction of the heterogeneity of mechanisms that affect the same outcome. It also presents an in-depth portrait of the mechanisms that relate to the outcome of interest—psychological distress—among the diverse Black Caribbean population in the United States. In spite of its many advantages, focusing on one outcome also has important limitations.

One key limitation of focusing on one mental health outcome is that predicted associations between different independent variables and mental health—even those with a strong theoretical grounding—may not appear significant. Theoretical and empirical research suggests that the predictor variables in the dissertation (discrimination, identity, social support, personal control, family relationships, and social roles) have strong effects on health outcomes. However, it also suggests that effects vary according to the outcome that is assessed. It is quite possible null findings in the associations between these predictor variables and the one indicator of mental health used in the project, might turn out to be significant findings when an alternative mental health outcome is used. This is also likely when, instead of just one, multiple mental health outcomes are used.

The intricate ties between hypothesized relationships and specific health outcomes suggest that detected—or undetected—group differences must be interpreted with caution. Significant findings for un-hypothesized relationships do not imply that the

predictors are related to mental health. Conversely, null findings for hypothesized associations between predictors and mental health do not necessarily suggest that the predictors are not associated with mental health. Instead, they suggest that the predictors are associated—or not—with the specific mental health outcome assessed in the three studies.

Study 3 provides a strong example of this need to consider the possibility of divergent results when different outcomes are used. That study failed to find associations between either family relationships or social roles and women's mental health. These null findings are contrary to the large body of research showing that women's health is intricately bound up with their social relations, especially their family roles and responsibilities (e.g., Aneshensel, Frerichs, & Clark, 1981; Barnett & Baruch, 1985, 1987; Barnett, Marshall, & Singer, 1992; Brody, Kleban, Hoffman, & Schoonover, 1988; Doress-Worters, 1994; Froberg, Gjerdingen, & Preston, 1986). The null findings in tandem with large body of theoretical and empirical work that suggests strong associations between the predictors and mental health, thus suggest that future research should explore how the inclusion of other health outcomes might inform Study 3's findings.

In addition, several studies have suggested that women and men manifest positive and negative mental health in different ways. Sex differences in mental health have been linked to women's comparatively greater likelihood to engage in ruminative responses to events and strains (e.g., Lyubomirsky & Nolen-Hoeksema, 1993; Morrow & Nolen-Hoeksema, 1990; Nolen-Hoeksema & Davis, 1999; Nolen-Hoeksema, Larson, & Grayson, 1999). Sex differences in mental health have also been associated with men's

comparatively greater tendency to resort to externalizing behaviors and to substance abuse (e.g., Kilmartin, 2005; Winkler, Pjrek, & Kasper, 2006). The different ways in which poor mental health might manifest for women and men encourages the use of measures that would assess such manifestations. One possibility, for example, is to examine sex differences in somatic complaints. Another is to include measures of lowered impulse control and increased risk taking. These alternative manifestations of depression have clear implications for sex differences.

They also have implications for understanding immigrant and ethnic minority mental health. For these populations, unfamiliarity with survey-question wording, discomfort or unfamiliarity with expressions used to connote mental health, and cultural norms about how poor mental should be manifested affect group differences in the mental health outcome used. For example, women and men—but especially men—from many Caribbean societies often do not admit to poor mental health. This is related to pressures to fulfill multiple responsibilities, a lack of sensitivity to mental health concerns, and cultural norms that implicitly or explicitly prohibit admitting to such challenges,, among other factors. The use of multiple measures of mental health and of measures that capture other ways in which poor mental health might be manifested can circumvent some of these impediments to assessing mental health in these populations.

Future research can be enriched by an exploration of mental health in its multidimensional capacity: sub-clinical levels of poor mental health, severe poor mental health, and/or positive mental health outcomes. Studies are also needed that investigate how extreme levels of poor mental health (e.g. major depressive disorder or mania) complicate the relationship between the predictors examined in the dissertation and sub-

clinical levels of poor mental health. These can provide a more nuanced context for understanding why certain individuals or members of immigrant and ethnic minority groups have stronger relationships than others. Similarly, studies are also needed that explore outcomes that have been typically examined in research on discrimination, or family relationships, in tandem with the typically used mental health measures. These outcomes can be conceptualized as indicators of health more broadly conceptualized. This more nuanced understanding of health outcomes can help paint a clearer portrait of the mechanisms involved in the health of immigrant and ethnic minority populations.

Conclusion

Combined, the three empirical studies offered important information about the ways in which contextual and individual level factors interacted to affect the mental health of racial and ethnic minorities in the United States. In doing so, they provided clarity regarding the mechanisms by which chronic discrimination, personal control, social relations and social roles related to psychological distress. Results suggested a model of vulnerability and protective factors, as well as risk and resource factors, in psychological distress. These models attended both to the characteristics endemic to the context in which the ethnic minorities were studied and to their individual level perceptions.

The findings of the studies also called attention to the need for better integrations of various disciplinary traditions such as sociology, public health, and social psychology. These disciplines often study ethnic minority health in isolation from one another. However, an awareness and application of key findings from each of the disciplines is crucial to a more accurate assessment of, and attention to, the mental health needs within

immigrant and ethnic minority communities. The findings from the three studies suggested that this type of integration is essential to developing evidence-based programming to reduce vulnerability factors and to increase protective factors within ethnic minority and immigrant populations.

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