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PERCEIVED SOCIAL ENVIRONMENT AND SELF-REPORTED HEALTH STATUS
AMONG AFRICAN AMERICAN AND AFRICAN CARIBBEAN IMMIGRANTS IN
THE U.S.

by

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ABSTRACT OF THE DISSERTATION

Perceived social environment and self-reported health status among African American
and African Caribbean immigrants in the U.S.

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Immigrants of African descent experience better health outcomes than African Americans but this health advantage dissipates over time and in succeeding generations. Few studies have investigated the influence of environmental factors on their declining health. This study examined the relationship between individual characteristics, neighborhood features and exposure to the U.S. social contexts on self-reported physical and mental health status among African American and African Caribbean adults who reside in “predominantly” African American and African Caribbean neighborhoods in the U.S. The conceptual framework was drawn from several models, race and health model, eco-social theory, and environmental stress exposure – disease framework, as well as theories specific to immigrant populations. Secondary data analysis using bivariate and logistic regression analysis of the 2001-2003 National Survey of American Life dataset was conducted with the sample comprised of African Americans (2,140) and African Caribbeans (687). Features of the neighborhood environment (higher social cohesion, neighborhood satisfaction, and frequent drug activity), immigrant status (age at migration and years lived in the U.S.) were associated with increased odds of fair or poor mental health. Nativity and number of years lived in the neighborhood were associated with

increased odds of fair/poor mental health. Poorer perceptions of physical health were associated with increased exposure to the U.S. social context, based on number of years lived in the U.S. and by generation. Second and higher generation immigrants had increased odds of fair or poor physical health than first generation when controlling for age, gender, and SES, but not when physical and mental co-morbidities were added to control variables. African Caribbean immigrants and African Americans reported no significant differences in their overall self-rated mental and physical health status suggesting convergence of their health status mediated by exposure to similarly racially constituted neighborhoods and the U.S. social contexts.

I dedicate this work to my parents who instilled within me the value of education and the fortitude to keep pursuing my dream

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TABLE OF CONTENTS

ABSTRACT OF DISSERTATION	ii
ACKNOWLEDGMENT	v
TABLE OF CONTENTS	vii
LIST OF TABLES	xi
LIST OF FIGURES	xiv
CHAPTER 1: INTRODUCTION	1
Health Disparities among People of African Descent	1
Race, Ethnicity, and SEP as Variables in Health Outcomes	5
Nativity as a Variable in Health Research	9
Immigration to U.S. by Populations of African Descent	9
Role of Neighborhood and Place Stratification	12
Where You Are and Who You Are Matters	13
Statement of the Problem	15
Significance of the Problem	16
Purpose of the Study	18
Research Objectives and Questions	20
CHAPTER 2: HISTORICAL & SOCIAL PERSPECTIVES OF THE CARIBBEAN EXPERIENCE IN THE U.S.	21
African Presence in the Caribbean and Social Inequality	21
The Caribbean and U.S. Connection	24
Migration to the U.S.	25

Marginalization of African Caribbean Immigrants	28
African Caribbean Identities	29
Racial and Ethnic Stereotypes	32
Immigrant Identities	33
African Caribbean Social Environments	34
Politics within the Ethnic Enclave	35
Religious Adaptation to Migration	36
Immigrant Health: Cultural Versus Structural Explanations	39
Residential Settlement Patterns and Perceived Neighborhood Environment	41
Neighborhood Preference	44
Disillusionment with Immigrant and Neighborhood Experiences	47
Health Outcomes	50
CHAPTER 3: LITERATURE REVIEW	53
Social Contexts of Health Disparities	54
Racial Residential Segregation	54
Empirical Findings on Health Disparities	58
Immigrant Health: Conceptual and Theoretical Perspectives	61
Overview of Ethnicity, Nativity, Neighborhoods and Health	61
Immigrant Health Paradox and Selectivity	62
Assimilation and Acculturation	63
The Ethnic Enclave	65
Individual-Level Markers for Health Status	65
Immigrant Generation and Health	67

Neighborhood-Level Markers for Health Status	69
Neighborhood Classification	69
Neighborhood Ethnic Composition and Health Status	74
Neighborhood Quality and Resources	77
Social Capital and Health Status	79
Summary of Literature Review	82
CHAPTER 4: CONCEPTUAL FRAMEWORK	85
CHAPTER 5: METHOD	93
Rationale for Study	94
Review of Objectives and Research Questions	95
Data Source	96
Analytic Sample	100
Operational Definitions and Variables	102
Dependent Variables	103
Independent Variables	104
Analytic Approach	118
Human Subjects Protection	122
CHAPTER 6: RESULTS	123
Sample Descriptive Statistics	123
Ethnicity and Health Status	125
Descriptive Statistics for Perceived Neighborhood Environment	129
Exposure to Neighborhood Context and Health Status	134
Perceived Neighborhood Environment and Health Status	134

Length of Neighborhood Exposure	139
Experience with Neighborhood Related Discrimination and Health	143
Nativity and Health Status	148
Interaction of Nativity and Neighborhood Exposure	151
Interaction of Nativity and Social Cohesion	156
Exposure to U.S. Context and Health Status	160
Age at Migration	160
Immigrant Generation	162
Years in the U.S.	169
CHAPTER 7: DISCUSSION	173
Ethnicity and Health Status	173
Neighborhood Environment and Health Status	174
Nativity, Immigration Related Variables and Health Status	176
CHAPTER 8: CONCLUSION	181
Study Limitations	185
Contribution to Research	186
Future Research	187
Policy Implications	189
REFERENCES	190
APPENDIX A: Cronbach's Alpha for Neighborhood Constructs	212
APPENDIX B: Lifetime Mental Health Co-Morbidities	213
APPENDIX C: Research Questions and Statistical Tests by Objective	214
CURRICULUM VITAE	215

LIST OF TABLES

Table 1 Descriptive statistics for NSAL	99
Table 2 Description of dependent and independent variables	114
Table 3 Characteristics of the study sample by ethnicity	125
Table 4 Odds ratios from logistic regression for fair or poor physical health and ethnicity	127
Table 5 Odds ratios from logistic regression for fair or poor mental health and ethnicity	128
Table 6 Distribution of perceived neighborhood environment characteristics by ethnicity	130
Table 7 Distribution of perceived neighborhood social cohesion by ethnicity	131
Table 8 Distribution of perceived neighborhood resources by ethnicity	132
Table 9 Means for neighborhood social cohesion and number of neighborhood resources	132
Table 10 Bivariate analysis of study variables	133
Table 11 Odds ratios from logistic regression for fair or poor physical health and perceived neighborhood environment	137
Table 12 Odds ratios from logistic regression for fair or poor mental health and perceived neighborhood environment	138
Table 13 Odds ratios from logistic regression for fair or poor physical health and number of years lived in the current neighborhood	141
Table 14 Odds ratios from logistic regression for fair or poor mental health and number of years lived in the current neighborhood	142

Table 15 Distribution of experience with neighborhood related discrimination by ethnicity	144
Table 16 Odds ratios from logistic regression for fair or poor physical health and experience with discrimination	146
Table 17 Odds ratios from logistic regression for fair or poor mental health and experience with discrimination	147
Table 18 Odds ratios from logistic regression for fair or poor physical health and nativity	149
Table 19 Odds ratios from logistic regression for fair or poor mental health and nativity	150
Table 20 Odds ratios from logistic regression for fair or poor physical health and the interaction nativity and length of residence in the current neighborhood	154
Table 21 Odds ratios from logistic regression for fair or poor mental health and the interaction nativity and length of residence in the current neighborhood	155
Table 22 Odds ratios from logistic regression for fair or poor mental health and the interaction nativity and neighborhood social cohesion	158
Table 23 Odds ratios from logistic regression for fair or poor mental health and the interaction nativity and neighborhood social cohesion	159
Table 24 Bivariate analysis of perceived neighborhood environment and immigrant status variables	163
Table 25 Means for neighborhood social cohesion score and number of neighborhood resources	164
Table 26 Odds ratios from logistic regression for fair or poor physical health	

and age at migration	165
Table 27 Odds ratios from logistic regression for fair or poor mental health	
and the age at migration	166
Table 28 Odds ratios from logistic regression for fair or poor physical health	
and immigrant generation	167
Table 29 Odds ratios from logistic regression for fair or poor mental health	
and immigrant generation	168
Table 30 Odds ratios from logistic regression for fair or poor physical health	
and number of years lived in the U.S. among 1 st generation African Caribbean	
immigrants	171
Table 31 Odds ratios from logistic regression for fair or poor mental health	
and number of years lived in the U.S. among 1 st generation African Caribbean	
immigrants	172

LIST OF FIGURES

Figure 1 Framework for the study of the relationship between individual characteristics, perceived neighborhood environment and self-reported health status	92
Figure 2a Framework for understanding convergence of health status among populations of African descent	184
Figure 2b Multi-level exposure to social inequality: A framework for the convergence of health among populations of African descent	185

Chapter 1

Introduction

Since 2000, the United States Department of Health and Human Services (USDHHS) has identified national goals to reduce health disparities among the most socially disadvantaged groups. The groups of greatest concern that are most affected by disparities are those of African descent and other underrepresented racial and ethnic groups. A number of major cities have a racial composition where at least 22% of the population is Black and 26% is non-Hispanic White (Frey, 2011). Thus, the focus of this study centers on the experiences and health related outcomes of African American and African Caribbean populations in the U.S. “Healthy People 2020,” the national agenda promulgated by the USDHHS, defines health disparity as a particular type of health difference that adversely affects groups of people who have systematically experienced greater obstacles because of social, economic, and/or environmental disadvantages including discrimination and exclusion (National Cancer Institute, 2010; USDHHS, 2010). This definition alludes to the broader social problem of health inequality. Health equity implies fair distribution of risks so no one group experiences a disproportionate burden of illness. Over the last 30 years, the expectations set by “Healthy People”, to achieve health equity, eliminate disparities, and improve the health of all groups has not been met.

The challenge associated with efforts to eliminate health disparities is further compounded by a lack of public awareness. In 2010, a survey of adult Americans found that only 59% were aware of the existence of health disparities, indicating a small increase from 55% in 1999 (Benz, Espinosa, Welsh & Fontes, 2011). The degree of

awareness varied across racial and ethnic groups, and by health indicators. Berger & Luckmann (1966) puts forth the idea that the distribution of knowledge is based on social contexts that include economic, social, and educational conditions. This lack of awareness of health disparities may be a sign of indifference or lack of concerted effort at multiple levels. More importantly, this lack of awareness among those most severely affected by disparities is problematic for their own survival and motivation to advocate for improved health. The lack of awareness among those in decision making capacities would help to perpetuate the structural barriers to better health, including neighborhood level structures. Finally, the lack of research as it relates to disparities that exist among African American and African Caribbean populations could be a result of this overall lack of understanding and awareness of the scope and magnitude of health disparities in general. The present study attempts to make a novel contribution toward increasing awareness of health disparities and the influence of socio-environmental factors that may be associated with physical and mental health status.

The degree of disparity that exists among populations of African descent is illustrated by the fact that racial and ethnic minorities have markedly worse health outcomes and lower life expectancy than White Americans (USDHSS- Office of Minority Health [OMH], 2011; World Health Organization [WHO], 2011). Compared to non-Hispanic Whites, African Americans are 20% more likely to experience serious psychological distress and have two-times higher infant mortality rates and prevalence of diabetes. They are 1.4 times more likely to have high blood pressure and 30% more likely to die from heart disease than whites. Compared to other women, African American women are 30%

more likely to die from breast cancer and African American men are two-times more likely to die from prostate cancer than other men (USDHSS-OMH, 2011).

A growing proportion of immigrants and succeeding generations of immigrants have been shown to be at an increased risk for deteriorating health. The projected health status of immigrants parallels that of their U.S. born counterparts as they are exposed longer to the social and ecological setting in the US (Acevedo-Garcia, Soobador, Berkman, 2005; Acevedo-Garcia, Bates, Osypuk, & McCardle, 2010; Kent, 2007; Frank, Cerda, & Rendon, 2007). For example, studies on immigrant self-rated health found differences among first generation immigrants on various social characteristics, including SES, race and ethnicity, country of origin and sub-ethnic group (Acevedo-Garcia, et al., 2010; Portes, Kyle & Eaton, 1992; Read, Emerson, & Tarlov, 2005). Immigrant generational status in addition to length of residence appear to have importance in explaining health disparities and substantiating the importance of cumulative effects of neighborhood or environmental exposures (Antecol & Bedard, 2006; Cho, Frisbie & Rogers, 2004; Elo, Mehta & Huang, 2008; Frank, Cerda, & Rendon, 2007; Uretsky & Mathiesen, 2007).

Acevedo-Garcia and colleagues (2010) noted that studies have not confirmed consistent patterns in health by immigrant generation across different health measures. The authors' multi-ethnic, multi-generational study of immigrant self rated health revealed that health status of Blacks consistently worsened with each succeeding generation. Length of residence in the U.S. did not appear to have a significant effect on the health of immigrants of African descent as compared to Hispanic and Asian populations (Acevedo-Garcia, et al., 2010). The authors suggested that length of residence may not be a strong predictor of the decline in health for people of African

descent but other social factors may be influencing their health within a shorter period of time.

Findings from studies on the relationship between SES and health status have been inconsistent. The positive relationship between higher SES and health that is noted in the extant literature (Braveman, et al., 2010; Gazmararian, Adams, & Pamuk, 1996; Krieger, Williams & Moss, 1997; Marmot, et al., 1997; Williams & Collins, 1995) is not consistently observed across racial and ethnic groups. Compared to Whites who have similar or fewer years of education and lower incomes, African Americans remain at higher risk for adverse health outcomes (Rowley, 2001; Thorpe, Brandon & LaVeist, 2008; Schoendorf, Hogue, Kleinman & Rowley, 1992).

The role of nativity and immigration experience adds a complex, yet important dimension to the examination of exposures to different social contexts. Although other U.S. born racial and ethnic groups reveal positive correlations between SES and health status, a paradoxical relationship has been observed among recent Latino immigrants purporting the existence of a health advantage despite lower SES (Abraido-Lanza, Dohrenwend, Ng-Mak & Turner, 1999; Markides & Coreil, 1986; Viruell-Fuentes, 2007). However, this paradox has not been observed among immigrants of African descent. Examining the intersection of nativity and SES by generational status, Acevedo-Garcia and colleagues (2010) found that SES gradients had more impact on third generation than first generation immigrants who have lived longer in the U.S. When considering racial and ethnic factors, third generation immigrants of African descent were found to have lower SES than all other immigrant groups. Furthermore, SES had no significant effect

on health indicators such as self-rated health, although SES had a significant effect among Hispanic and Asian populations.

Race, Ethnicity and SEP as Variables in Health Outcomes

Previous research on race, ethnicity, and health has quantified variations in health status and behaviors across groups (Cabral, et al., 1990; Gould, Madin, Qin, & Chavez, 2003; Kramer, et al., 2004; Liu & Laraque, 2006; Miranda, Siddique, Belin, & Kohn-Wood, 2005; Singh & Siahpush, 2002). More recently, race and ethnicity have gained prominence in the literature as critical to the measurement of the social context of environments. Social contexts have proximal or distal relationships along the pathways that lead to the formation of health inequities (Acevedo-Garcia, Lochner, Osypuk, & Subramanian, 2003; Alwin & Wray, 2005; Butterfield, 2004; Massey, 2004; Williams, 1997). Although race and ethnicity are key constructs of social determinants of health, their role in explaining health disparities has not been fully appreciated conceptually and methodologically. Methodological approaches have so far established associational relationship rather than causality. Using race as a prominent variable in health research has been criticized because of the tendency to link race with biological rather than a sociologically constructed phenomenon replete with social expectations of differential rights, opportunities and privileges afforded to various groups. Race is also laden with numerous connotations variably conceptualized as indicators of culture, social position, or social systems all at the same time, thus, making it difficult to isolate the meaning of race in an empirical analysis (King & Williams, 1995). It is imperative to clearly operationalize the definition of race and explain the contexts of interest associated with

race. For the purposes of this study, race is specifically defined in a manner that indicates social position based on racialized hierarchies, whereas ethnicity is operationalized in a manner that is useful for examining shared history, culture, and experiences.

Social status in the U.S. has two distinct and interrelated components: achieved status based on income, education and occupation, and ascribed status based on race and ethnicity (Alwin & Wray, 2005). SES is distinctly different from SEP (socioeconomic position) and both are found to have independent influence on health outcomes (Babones, 2010). SES reflects objective and easily quantified measures such as number of years of education, personal net income, and employment status. SEP reflects a level of power or influence that is not necessarily synonymous with the amount of money one makes or the level of education one has achieved. Employment type, titles, or familial background are less easily measured in a standardized way (Fuhrer, et al., 2002; Marmot, et al., 1997). However, these indicators may not account fully for the influence of SES in absolute terms (Babones, 2010).

Marmot et al. (1997) found that as SEP decreases, so does the health gradient. Health is more prominently dependent on relative social position rather than occupation or level of education. Social gradients related to health are observed among those of higher SES. Additional mechanisms of SES such as the distribution of income that speaks to inequalities at the societal level may be one way that socioeconomic position is affected through disinvestment in human capital (Kawachi & Kennedy, 1999). Income inequality is also posited to be a reflection of low social capital (Wilkinson, 1996). Therefore, SEP shares responsibility in affecting health outcomes. The explanation of disease patterns being closely associated with social status is described by the

phenomenon of “status syndrome” (Marmot, 2006) where social position is connected to the accumulation of stressors that initiate biological processes that do harm to the body (Babones, 2010, Marmot, 2006). The research on health disparities in the U.S. has clearly avoided the “status syndrome” (Marmot, 2006) in favor of more objective indices of social status (income, occupation and education).

The American Anthropological Association (AAA, 1997) has argued that race is a sociopolitical construct that conditions life chances of groups in a particular society that is not linked with genetic but rather on phenotypical markers of differences. Nationally reported data and studies that compare groups by race and ethnicity, use the broad racial category *Black/African American* to describe persons of African descent or individuals who phenotypically appear to be of African ancestry. AAA objected to the United States Office of Management and Budget (OMB) directive of using race as a categorization of groups as it perpetuates the historical idea that non-whites are inferior. The OMB is the federal entity that establishes racial and ethnic coding standards for the purposes of national reporting and statistical analysis (AAA, 1997; OMB, 1997, 2012). The positions of the AAA and OMB indicate that race is deeply embedded in American cosmology. Whether or not the OMB racial and ethnic categories are discarded, social status and position ascribed in hierarchical systems will perpetuate disparities.

Several authors have argued that race should be studied because it has remained a pathway to cumulative risks including poor health outcomes (Gee, 2002; Krieger, 2012; Williams, Neighbors & Jackson, 2003). Studies that examine the relationship between racial discrimination and a variety of physical and mental health measures find that self reports of perceived discrimination at the institutional and individual level have a positive

association with poor physical and mental health. The combined effect of race and neighborhood context is a stronger predictor of poor health outcomes above other individual characteristics; the threshold of social strain may differ for physical and mental health and by racial and ethnic group (Gee, 2002). The adoption of health risk behaviors such as smoking and alcohol use is believed to be a pathway of how discrimination affects health status (Williams, Neighbors & Jackson, 2003). Race and ethnicity remain significant predictors of differences in health status when other sociodemographic and socioeconomic characteristics are held constant (Gee, 2002).

Race and ethnicity are indices of social positions in the U.S., thus a major factor to be studied that may explain how pathways to cumulative social risks and poor health develop. Therefore, race and ethnicity should be considered as indicators of differential experiences of groups in a given social context that operate at both the individual and macro-social level. Disentangling the social constructs attached to race and ethnicity is difficult and complex because of the multidimensionality of social identities and health phenomena. Guruge & Khanlov (2004) theorize that simultaneous adoption of multiple social identities has a particular influence on immigrant mental health. Mental health status is especially sensitive to the effects of social status and position (Gee, 2002; Williams, Neighbors, & Jackson, 2003). Social identities include race, class, education, gender, citizenship, and geographic location. These social identities independently and in combination are equivalent to status markers (Babones, 2010) that are patterned specifically to the individual. Health manifests in a manner that is determined by the way social identities are merged (Guruge & Khanlou, 2004). Guruge and Khanlou further explain that identities are formed at multiple levels in which a person interacts. The

meso-level includes neighborhoods and social interactions. The process of adopting social identities also means that individuals develop a worldview based upon their social experiences and statuses and including their perception of their environment. Therefore, the proposed study is guided by the core concept that perceived neighborhood environment is connected to individual characteristics and the relationship is reciprocal.

Nativity as a Variable in Health Research

Immigration to U.S. by populations of African descent

Immigrants of African descent have an extended history in the U.S., spanning from the pre-Columbus era of 1492 when Africans engaged in exploration and trade of their own free will to the era of forced enslavement by Europeans of the 17th to 19th century. The highest peaks of legal immigration in the U.S. that occurred in 1882 to 1914, spurred the perceived threat that the White Anglo-Saxon American dominant culture and power structure were endangered by the massive spike of immigrants (James, 2012). Race became a prevailing factor that curtailed migration patterns of Black Caribbeans. African Caribbean immigrants, including Hubert Harrison, Marcus Garvey, and Claude McKay, who were some of the most prominent figures in the Black Nationalist and Pan – Africanist movements that promoted African pride and African centered worldview, empowerment, and self-reliance, had a significant impact on the political and social landscape (King, 2000; Richardson, 1989). The oppressive nature of U.S. political and social policy toward African Americans was threatened by social movements that encouraged solidarity, self-actualization, and the promotion of people of African descent (King, 2000).

Flanked by periods of restricted immigration, two large waves of voluntary immigration from the Caribbean occurred between 1930 and 1965 and from the 1990s to the present. Quotas on African immigration were more restrictive than those for European immigrants. The Immigration Act of 1924 and the Immigration and Nationality Act of 1952 (McCarran-Walter Act) reduced the number of immigrants from predominantly Black countries and European governed territories in the Caribbean that would be granted entry (King, 2000).

After the passage of the 1952 immigration quota law, a wave of migration among African Caribbean immigrants occurred in 1965 as a result of the Hart-Celler Act (1965) which lifted the restricted policies. Subsequently, a nearly four fold increase in the number of Caribbean immigrants compared to that of the 1950s was observed (King, 2000). Subsequently, the number of Black immigrants tripled between 1980 and 2005 (Kent, 2007). The most recent data show at least 75% of the current Black foreign born population has ties to Caribbean countries (Kent, 2007). Migration policies and racial discrimination of Caribbean and African American populations are social determinants of health related to their life-course.

Theories of assimilation and selectivity are used to explain variations in health status over time; however, these population-based theories view ethnicity as a primary explanatory factor but not race. Race and ethnicity are often conflated or used interchangeably. Some cultures rely on ethnicity to categorize groups, especially when phenotypical differences cannot be reliably used to make distinctions; however, the U.S. continues to rely on racial categories. Immigrants who come to the U.S. from places in the world that do not use a similar system of racial categorization may experience the

effects of ethnic and cultural differences in addition to racial stratification. Immigrants of African descent who are classified as *Black* may be viewed in two ways. They may be ascribed a low social position along with African Americans or they may be ascribed a higher social position because of their immigrant status. Immigrants, in this instance, may be deemed to be different from U.S. born African Americans and are subject to more favorable expectations. As successive generations and older immigrants of African descent assimilate into society and specific neighborhoods, immigrant status becomes a muted category of differences and the ascribed social position may converge with that of U.S. born African Americans. These assessments of social standing are subject to change based upon the country of origin and the current political sentiment held by those in power (Waters & Eschbach, 1995; Waters, 1999).

Racial differences appear to have a particularly profound effect on the experiences of immigrants of African descent. Several authors have cited the process of downward assimilation where groups integrate into neighborhoods, social or cultural contexts that are not amenable to upward mobility or health promoting environments and behaviors (Portes & Zhou, 1993; Frank, Cerda & Rendon, 2007; Johnson & Marchi, 2009; Gans, 1992). An alternate theory considers the salubrious effect of residing in co-ethnic enclaves which serve as a reinforcement of cultural ties (Kuo & Tsai, 1986; Logan, Alba, & Zhou, 2002; Portes & Rumbaut, 2006). However, residence in co-ethnically concentrated neighborhoods may have differential influences across racial and ethnic immigrant groups and by specific health measure (Lee & Ferraro, 2007; Osypuk, 2009; White & Borrell, 2006). Therefore, race, ethnicity, and nativity can simultaneously influence health status.

The Role of Neighborhoods and Place Stratification

The presumed interaction effect of individual characteristics and macro-level features of the environment on health comes from a broader perspective on the relationship between social context and health status. The influence of political sentiments and ascribed social standing operates at multiple levels and can have a bearing on macro-level actions such as legislation and micro-level pursuits such as access to care, education, and housing. Health research that examines the role of residential environments from an ecological perspective posits that racial and ethnic minorities and immigrants are at greater risk of exposure to elements that are deleterious to health (Gee & Payne-Sturges, 2004; Geronimus, et al., 2006; Williams & Jackson, 2005; Williams, et al., 2007). The United States' history of intentional, systematic processes of race-based residential segregation has contributed to the creation of differential exposure to poorer neighborhood environments of people of African descent than other racial and ethnic and immigrants. The practice of race and place stratification relegates people of African descent, to the lowest tier of social standing (Alba & Nee, 1997; Massey, 2004). Such disadvantage is evidenced by accounts that African Americans were often situated in neighborhoods farthest from sources of employment and potential for upward residential mobility (Lemann, 1992). Practices such as "redlining" prevented African Americans from being able to obtain loans to purchase homes in the neighborhood of their choice. In other instances, African Americans were allowed access to once desirable neighborhoods where communities were aging and deteriorating (Pattillo-McCoy, 1999). Overall, the interaction between residential location and social strata directs pathways of

socialization that subsequently influence the health outcomes trajectory (Acevedo-Garcia et al., 2010; Portes & Rumbaut, 2006).

Increased exposure to neighborhoods that are materially disadvantaged or have a disproportionate share of establishments that are non-health promoting (Diez-Roux, 2003; Dubowitz, et al., 2008; Kwate, 2009; Massey & Denton, 1993; Morland, Wing, Diez-Roux, & Poole, 2002; Osypuk, et al., 2009) is associated with poorer health trajectories and increased health risk behaviors. Neighborhoods with adequate access to goods and services, medical care, educational institutions, and a low threat of crime, for example, are associated with better health status (Freeman, 2002; Haas, et al. 2008; Kwate, et al., 2012; Williams & Collins, 2001). The abovementioned findings indicate two distinct ways of conceptualizing neighborhood environments based on 1) neighborhood features and geography or 2) demographic profile such as the racial and ethnic composition of residents (Kawachi & Berkman, 2000).

Who You Are and Where You Are Matters

Krieger (2001, 2012) has established the ecosocial theory of embodiment through several studies that revealed the significant influence of neighborhood environments and socio-cultural experiences on health status. According to Krieger, humans embody their social and material environments differently as a result of the patterned pathways they encounter throughout the life-course. The life-course consists of significant historical events and transitions experienced by individuals and groups that have cumulative influence on their health trajectory, including physical and mental health. These life experiences are interconnected and play an important role in determining specific

ecological, social, and biological consequences. Structural inequalities create patterned pathways of cumulative risks and disadvantages in certain groups. Conversely, exposure to an eco-social system with greater equity and social acceptance results in cumulative advantages.

Other authors similarly support the idea that social experiences, interpersonally or within the confines of neighborhoods, promote a particular life-course trajectory that includes the adoption or rejection of health related behaviors, perceptions of self and the environment, and health outcomes. Social support networks and culturally protective practices appear to affect health in a positive manner, particularly for residents who live in materially disadvantaged or racially and ethnically segregated neighborhoods (Link & Phelan, 1995; Kawachi & Berkman, 2000; Patel, Eschbach, Rudkin, Peek, & Markides, 2003). The ability to activate networks and maintain cultural practices are also a function of social position. Establishment of social position operates at the individual level and functions at the neighborhood level, particularly when co-ethnic populations are concentrated in neighborhoods where social mobility is limited. Research on the length of exposure to neighborhoods and the effect of neighborhood characteristics such as the willingness to engage in social cohesion and collective efficacy (Alwin & Wray, 2005; Sampson & Raudenbush, 1999) have not been extensively examined in sub-ethnic populations of African descent. Understanding the context of the environment that people from other countries encounter once they arrive in the United States is important to the conceptualization of migration processes. Examining the effects of population exposure to social and ecological conditions provides a foundation for testing theories on the differential effects of environments on the physical and mental health of US born and

immigrant populations. One of the goals of this study is to address this gap in the literature.

Statement of the Problem

While it is known how policies, economic systems, and environments facilitate the creation of health disparities among U.S. born African Americans, it is not well-known how these institutionalized systems affect immigrant populations of African descent. In the absence of such knowledge, only broad identification of factors that would contribute to disparate health outcomes between African Americans and other racial and ethnic groups and disparate health outcomes between immigrants of African descent and other immigrant groups can be established. Such broad associations between race, ethnicity, and the combined effect of nativity and health could best be explained through an examination of moderating factors that take into consideration what features of the social and physical environment are more health protective or deleterious than others and which features have very little influence on perceptions, behaviors, and health outcomes. As previously mentioned, current research and theory posit that neighborhood environment and subsequent exposure to its features are factors that moderate health outcomes. The advancement of strategies for mitigating deleterious effects of neighborhood environment on health depends on the ability to measure the degree of influence of neighborhood contexts on immigrant and U.S. born populations of African descent. The proposed study will examine if differential perceptions of neighborhood characteristics condition health outcomes in these two distinct populations and therefore, address an important gap in the current body of literature.

Significance of the Study

Immigrants represent a growing segment of the population of African descent in the U.S. Between 1940-1962, the number of immigrants from the Caribbean that came to the U.S. for work was approximately 3,000 (Kasinitz, 1992). The U.S. Immigration and Naturalization Service estimated that between 1962 and 1975, 63,642 Haitians entered legally and settled primarily in NYC (Laguerre, 1984). During this time period, the number of immigrants increased from 123,000 in the 1950s to 470,000 in the 1960s and nearly 750,000 in the 1970s. (Simmons & Guengant, 1992). By the 1980s, there were an estimated 800,000 Haitians, including American-born children of immigrants in the U.S. This figure is believed to be an underestimate as many were undocumented due to the restrictive immigration policies that targeted Haitians, specifically (Laguerre, 1984). The largest concentration of immigrants can be found in major urban centers and account for eight percent of the total population of African descent in the U.S. and represent more than 25% of that population in three states: New York, Massachusetts, and Minnesota (Kent, 2007; United States Census Bureau, 2004). In 2004, 16% of Black births were to immigrant women of African descent (Cabral et al., 1990; Kent, 2007; Singh & Yu, 1996). The majority of immigrants come from countries in the Caribbean (66%), Latin America (30%), and Africa (4%) (Kent, 2007; United States Census Bureau, 2004). Cultural diversity within neighborhoods is not only attributed to the migratory patterns of first generation immigrants but more significantly to the presence of successive generations born in the U.S (Acevedo-Garcia, Soobador, & Berkman, 2005; Pew Hispanic Center, 2008).

As the population of immigrants of African descent increases, their health status is a cause for concern. Compared to other ethnic minority immigrants, some sub-ethnic groups of African immigrants fare worse on certain health outcome measures, such as birth outcomes, alcohol and drug use, self rated health, and access to preventive health screenings (Gany, Trinh-Shevrin, & Aragonés, 2007; Read & Emerson, 2005; Singh & Yu, 1996).

In spite of having higher median incomes, the limited research on immigrant health suggests that immigrants of African descent are likely to settle in racially segregated neighborhoods that are materially and politically disadvantaged, similar to those of U.S. born African Americans (Crowder, 1999; Marcuse, 2001, 2005). The social dynamics of the U.S. appear to be a possible reason for the marked decline in health among African immigrants as generations are exposed to U.S. social structures, lifestyles, resources and to specific neighborhood environments. The identification of proximal and distal associations between features of neighborhoods, demographic characteristics of residents, and health may present theoretical and analytical frameworks that are more culturally relevant in addressing health disparities. The existing research on race, ethnicity, nativity, neighborhood context, and health status is limited in a number of ways. First, a relatively small number of researchers have explored the social and neighborhood features of immigrants of African descent that might explain generational declines in health. Very little research examines whether neighborhoods where immigrants of African descent reside provide a health protective effect similar to that which is observed among Latino or Asian immigrant groups. Third, the literature often classifies and treats populations of African descent as a homogenous group without

regard for differences in nativity or cultural identity. As a result, findings may mask sub-ethnic group differences in health status and perceptions of neighborhood environment. A study of the intersection of race, ethnicity, nativity, and neighborhood would produce important information about theoretical assumptions that have, until now, examined these variables in isolation of one another. Finally, previous studies often do not include measures of previous experiences with discrimination as it relates to housing, neighborhood choice, and interpersonal experiences in the neighborhood that may influence current neighborhood perception or health status. The inclusion of personal history as a measurable social determinant of health extends this study's contribution to the literature.

Purpose of the Study

The goal of this study is to examine the relationships between neighborhood context and self-reported health status among a population of African American and African Caribbean adults that reside in “predominantly” African American and African Caribbean neighborhoods in the U.S. Given that these two groups have the same racial identity, an analysis of similarities and differences in the perception of the social milieu by nativity distills how environment operates for the association with health outcomes. The association between self-reported health status and nativity will be analyzed further to determine if the association is moderated by neighborhood context and length of residence in the U.S. In addition, this study will describe population differences in health by length of residence in the neighborhood and assess whether neighborhood perceptions differ by generation. The researcher's interest in length of residence in the U.S. and in

current neighborhood context stems from a need to generate additional information about localized exposure as well as overall exposure to social and environmental contexts in the U.S. Findings on the interaction effects of ethnicity and years lived in the current neighborhood and nativity and features of the neighborhood environment among African immigrant populations is not present in the current literature.

The objectives and questions that guide this study are derived from constructs presented in the literature (see Chapter 3) pertaining to Latino immigrants but have not been extensively examined in relation to the African immigrant experience and from variables contained within the National Study of American Life (NSAL). The research questions address the gaps in the literature that may explain an observed “health advantage” or decline in health over time that is observed among immigrant populations as compared to their U.S. born counterparts.

The primary theoretical models that guide this study are the race and health model (Williams, 1997) and ecosocial theory of embodiment (Krieger, 2001). The race and health model integrates key demographic characteristics, including immigrant status, into a comprehensive framework that places race, ethnicity, and generation status as markers of neighborhood environments along a set of pathways that influence health behaviors and health outcomes. The race and health model challenges the idea that race and ethnicity have no causal associations with neighborhood stratification and the subsequent influence on health. Instead, the race and health model purports race and ethnicity to be among the fundamental causes of health outcomes. The ecosocial perspective acknowledges the influence of life experiences, including immigration and assimilation processes the effects of exposure to particular, physical and social features of

neighborhoods, the effect of larger societal social-structural systems, and psychosocial attributes on health status.

The proposed study had two objectives with specific research questions for each objective. The study used secondary data analysis of the NSAL.

Objective 1. Describe population differences in subjective assessments of neighborhood environment and self-rated physical and mental health status among African American and African Caribbean respondents residing in similar racially constituted neighborhoods.

Research Questions:

1.1. What are the differences between African American and African Caribbean populations regarding a) self-rated physical and mental health status, and b) perceived neighborhood environment?

1.2. Is there a relationship between a) perceived neighborhood environment and self-rated physical and mental health status, b) length of residence in the neighborhood and self-rated physical and mental health status, and c) experience with discrimination and self-rated physical and mental health status?

1.3. Is there a relationship between nativity and self-rated physical and mental health? If so, is the relationship moderated by a) length of residence in the neighborhood, and b) perceived neighborhood environment?

Objective 2. Analyze differences in subjective assessments of neighborhood environment and self-rated physical and mental health status among African Caribbean

immigrants by a) age of migration, b) generational status, and c) number of years lived in the U.S.

Research Question:

2.1. Is there a relationship between ages of migration, immigrant generation, or number of years lived in the U.S. and a) perceived neighborhood environment, and b) self-rated physical and mental health among African Caribbean immigrants?

The analysis conducted to answer these questions relies on the National Survey of American Life (NSAL), 2001-2003 and the companion follow up survey, the National Survey of American Life Self-Administered Questionnaire (NSAL-SQ), one of three nationally representative datasets within the Collaborative Psychiatric Epidemiology Surveys (CPES). The study sample includes a nationally representative sample of African American and African Caribbean non-institutionalized adults, 18 years and older who resided in census tracts and census blocks that had at least 10% or more African American population. The survey design included oversampling for African Caribbean populations selected from areas where there was at least 10% or more Caribbean population. The Caribbean sample was categorized as first generation (born outside the United States), second generation (at least one parent of Caribbean ancestry born outside the U.S.), or third generation (at least one grandparent born outside the U.S.).

Chapter 2

Historical and Social Perspectives of the African Caribbean Experience in the United States

This study aimed to examine relationships pertaining to immigrant experiences, the social construction of neighborhoods and their influence on self-reported health outcomes. A discourse on the contemporary social determinants of health as they apply to African American and African Caribbean immigrants in the U.S. should begin with the origins of the affiliation people of African descent have had with people of European descent and the legacy that continues. Place, which includes the social and physical aspects of environments, is posited to have an influence on one's sense of self and identity in relation to others (Butterfield, 2004a). Specifically, the physical and mental dimensions of health may be conditioned by the relationship between individual characteristics and societal contexts. From an ontological point of view, historical events have documented that race, racism, nativity, class, and social hierarchies exist in White dominated societies to the advantage of Whites and to the disadvantage of people who are categorized racially as "Black." For African Caribbeans, race-based distinctions superimpose other personal characteristics such as immigrant status or ethnicity that may be equally or more important to their identity.

The African Presence in the Caribbean and Social Inequality

The region known as the Caribbean includes thirty countries and territories classified as English, French, or Spanish speaking. The languages spoken throughout the Caribbean are artifacts of the reigning empires that colonized the respective area. Currently, countries in the Caribbean are either independent nations or remain colonial dependents of the British, Danish, Dutch, French, Spanish, or the United States. The

independent nations consist of Antigua, the Bahamas, Barbados, Belize, Cuba, Dominica, the Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Lucia, St. Kitts-Nevis, the Grenadines, Suriname and Trinidad and Tobago. The remaining areas include: French Guiana, Guadeloupe, Martinique, Saba, St. Martin, St. Eustatius, Curacao, Bonaire, Aruba, Puerto Rico, British Virgin Islands, Montserrat, and Turks and Caicos (Knight & Palmer, 1989).

The African presence in the Caribbean stemmed from the need for labor to support the emerging sugar plantation economy. The brutal and inhumane Transatlantic Slave Trade and chattel slavery, which lasted from approximately 1518 to 1870 brought enslaved Africans to the shores of the Caribbean and the U.S. after the indigenous populations had been decimated by the arrival of Europeans (Knight & Palmer, 1989). An extended discussion of the history of slavery is beyond the scope of this study, but particular reference to certain sociopolitical structures provides a foundation for understanding the creation of ideologies that exist today. The ideologies associated with the institution of slavery underpin the nature of policy, stereotypes, and expectations that affect African American and African Caribbean populations.

White supremacy and racial stratification were the undergirding principles of African enslavement and people of African descent were deemed unworthy to be considered equal with whites. The plantocracy of the Caribbean region, a structure of governance, evolved to secure the economic success of plantation owners. This system of governance relied on systematic racial stratification, establishing one's sense of self in relation to others a sociopolitical order that subjugated the people of African descent. Beyond the Caribbean region, the U.S. established its own form of systematic racialized

governance. The U.S. Constitution undergirds the racialized sociopolitical structure of the American society establishing a legal basis for disparate treatment of people of African descent. According to Browne-Marshall (2009), in Article 1, Section 2 of the U.S. Constitution, Blacks were counted as 3/5 of persons to determine the number of members of Congress from a particular state and White politicians failed to represent the issues and concerns of persons of African descent (free or enslaved) who were members of their constituency (p. 54). The author cites the Supreme Court case (*Smith v. Turner*, 48 U.S. 283(1849) that declared Blacks as slaves, not persons (p. 55). The subordinate social position of Black people has been documented in more recent times with the unethical medical experimentation using Black bodies to discover and master techniques, procedures and treatments that benefited White populations. While Whites had access to proper medical care, Blacks were denied available treatment and left uninformed of what was being done to them (Washington, 2006).

The identities of people of African descent as being inferior to Whites continues to exist today in many institutionalized forms. The quality of neighborhoods, educational systems, hiring practices, and religious/spiritual expression are but a few examples of the way racism has been institutionalized. African Caribbean spiritual systems have been an important part of the people's cultural identity. Dating back to the late 18th century European missionaries have debased African spiritual/religious beliefs in favor of European religions. Olwig (2001b) has noted that missionaries in the Caribbean took on the task of transforming enslaved and formerly enslaved African Caribbean people from what they considered a primitive low class to a more socially acceptable group based on a Eurocentric worldview. Religion was used to manipulate and control the enslaved

Africans to preserve the social order of society upholding, European domination and superiority of its culture. The reward for staying aligned with European dominance was to be given some nominal distinctive status from other enslaved people but the distinctive status did not equate to social and economic equality with whites. Individuals who continued to maintain traditional African, non-Christian spiritual systems were marginalized or punished. The mental, emotional, behavioral, and environmental effects of racial stratification run deep and are long lasting with consequences extending to successive generations (DeGruy Leary, 2005; Kisinitz, 1992) in the form of internalized racism, “Post Traumatic Slave Syndrome” (DeGruy-Leary, 2005), depression, emotional insecurity, and the inheritance of disadvantaged neighborhoods.

The Caribbean and U.S. Connection

The Caribbean territories have had a class/caste system since post emancipation where race, phenotype, ancestry, economic means, and educational status were used to form identities, and determine life opportunities and interpersonal treatment one receives (Knight & Palmer, 1989). Ethnographic studies (Archibald, 2011; Butterfield, 2004a) and historical analyses (Bergad, 2007) revealed a common sentiment that the Black experience in the Caribbean and in the U.S. is different, despite a shared experience of enslavement. Bergad (2007) explains that differences in systems of slavery are misinterpreted as illustrated in the assumption that slavery in the Caribbean was slightly less restrictive than in the U.S. because the Caribbean system made provisions for individuals to partially maintain some of their traditional spiritual practices, establish families, and honor their status as “freed” individuals, which was not completely the case in the U.S.. Furthermore, Africans in the Caribbean represented the majority of the

population, in contrast to the white majority in the U.S., which laid the foundation for a slightly different social context from which race and class were understood.

According to Bergad (2007), the small differences in the treatment of Blacks within the institution of slavery and post-slavery were not a matter of a moral inclination that would permit some of the “advantages” some enslaved Africans in the Caribbean would have, but was part of a thought out financial strategy based on gender, time period, place, and necessity. These varied experiences of African American and African Caribbean people are erroneously relied upon to explain why African Caribbean immigrants to the U.S. arrive with a more positive outlook on their life chances and that opportunities are misused by African Americans. Therefore, these “cultural” differences account for the illusion that race and racialized systems in America are not a problem (Butterfield, 2004c; Kasinitz, 2001; Waters, 1999) that would contribute to many disparities. This ideology can be traced to prejudicial propaganda and notions (Bryce-Laporte, 1972) that was easily transmitted back and forth between the Caribbean and the U.S. through close communication and social networks shared in a transnational socio-cultural system (Sutton & Chaney, 1992).

Migration to the U.S.

In their home country, some Caribbean people owned land, maintained businesses, held a variety of occupations; however, the masses were comprised of working class individuals who needed work and work was not plentiful. Consequently, a long history of emigration is associated with Caribbean populations. Bryce-Laporte (1972) observes the irony of inequality as a motivating force that encourages populations to emigrate or migrate. The northern migration of African Americans from the south,

similar to the migration of African Caribbean people to the U.S. was motivated by the desire to escape or lessen exposure to inequality. However, social stratification based on race and nativity continues to benefit those in power who dictate the social, political, economic, and employment landscapes by recognizing and exploiting this desire to achieve social upward mobility. Waters (1999) notes the dilemma that Caribbean immigrants and African Americans face is related to mechanisms that perpetuate the idea of fundamental or moral differences between groups of African descent based on ethnicity. The author illustrates the manner in which ethnic competition between groups is orchestrated within a societal context that views Caribbean immigrants as the preferred or model “Black” especially within the employment sector. Despite these divisive views, both groups live with the consequences of social, spatial, and economic inequity.

During the 1800s Caribbean peoples became a source of voluntary migrant labor because of the prospect of higher paying jobs in other countries (Bashi & McDaniel, 1997; Bryce-Laporte, 1972). In 1834, mass migration to the U.S. began to take place (Sutton & Chaney, 1992). Major cities such as Tampa, New York, Miami, Boston, Philadelphia, Chicago, and New Orleans were points of destination (Bryce-Laporte, 1972). At the close of 1901, Caribbean women were able to migrate to the U.S. using money that their family members earned by working on the U.S. Panama Canal construction project and remittances from relatives already in the U.S. (Marshall, 1992). Between 1901 and 1924, 102,000 individuals entered the U.S. (Richardson, 1989). By 1920, 20% of the immigrant population in the U.S. came from the Caribbean. After the restrictive immigration policies of 1924 were lifted, 1965 marked the next great migration of Caribbean people. According to Immigration and Naturalization Services

data, 16, 503 Jamaicans entered the U.S. with 68% settling in New York City. During the same year, 3,801 Haitians entered the U.S. with 74.3% settling in New York City. In 1975, more than half of new immigrants went to New York City (Bryce-Laporte, 1972). Further, periods of rapid growth in Caribbean migration occurred between 1981 and 1996 when 600,000 immigrants entered the U.S.

Data from 1990 showed that at the neighborhood level, Caribbean people and African Americans, each had only about an 11-13% chance of interacting with a White person although Whites comprised 50% of the population in New York City, one of the most heavily concentrated cities for Caribbean immigrants (Crowder & Tedrow, 2001). These data illustrate the degree that racialized residential segregation became a feature of the urban landscape and a structural system in which both groups are exposed.

The political climate was also a force that pushed migration to the U.S. by Haitian peoples. Haitian migration increased during the Duvalier regime between 1957 and 1984. Thus, Haitian immigration occurred in two major waves in the 1960s and the 1980s (Pierre-Louis, Jr., 2006; Schiller, Dewind, Brutus, Charles, Fournon, & Thomas, 1992). During that time, 15% of the Haitian population left for political reasons. Between 1972 and 1980, 45,000 Haitians arrived in the U.S. (Schiller, et al., 1992). Succeeding waves of Haitian migration consisted of people of different classes, economic status, education, and social capital. Differences in immigrant profiles influence differences in political or economic achievement in the U.S. as well as health status. It is important to note differential capacities of African immigrants to avoid notions that all immigrant experiences are the same and they all end up with favorable outcomes. It also prevents the mistaken assumption of assuming cultural merit as the basis for the difference

between U.S. born and non-U.S. born groups. The first wave of Haitian immigrants were of the middle or upper classes, which included intellectuals, well- to- do associates of the formerly installed government, and those with strong business and social networks already established in the U.S. By 1970, the economic depression that was also felt in the U.S., spurred additional Haitians to migrate. Changes in the agricultural economy forced lower class subsistence farmers to lose their land. Consequently, structural conditions encouraged another wave of emigration. Because of a variety of push-pull factors that affected different groups at different periods of time, the profile of the Caribbean immigrant is mixed. The enclaves that evolved were organized or patterned according to towns and cities of origin rather than social class (Pierre-Louis, Jr., 2006). The settlement patterns indicate that Black people may be less residentially dispersed by socioeconomic status, thus exposing them to the same environmental contexts, which may be salubrious or deleterious to their health.

Marginalization of African Caribbean immigrants

The Haitian immigrant experience was especially precarious as it was played out in the U.S. political arena. Media coverage historically depicted Haitians as a less than ideal immigrant group (e.g. impoverished, illiterate, etc.); however, Haiti was the “first Black republic” that gained independence from its colonizers and disengaged from the system of enslavement (Bergad, 2007; Schiller, et al., 1992). Such a distinguished legacy and other notable contributions of Caribbean immigrants are not viewed favorably within a Eurocentric and U.S. dominant worldview. The early 1980s marked a highly controversial time concerning Haitian immigrants. In 1980, 25,000 Haitian immigrants landed on the shores of Florida and successive immigrants were subjected to being

detained. In contrast, none of the 125,000 Cuban immigrants that arrived were subjected to detainment. Haitian immigrants who arrived prior to 1980 were released from detainment in 1982 under the Spellman decision (Schiller, et al., 1992). Haitians immigrants were again ostracized when the U.S. governmental health agencies endorsed being of Haitian descent as a risk for HIV/AIDS, essentially identifying being Haitian as a threat to public health. For three years, this public health message was publicized until 1985 when the Centers for Disease Control and Prevention retracted this as a “risk factor” for HIV (Schiller, et al., 1992).

African Caribbean identities

A number of ethnographic studies and critical analyses of immigrant and race theories (Bashi & McDaniels, 1997; Bryce-Laporte, 1972; Buchannan, 1992; Butterfield, 2004; Conway & Bigby, 1992; Gregory, 1992; Olwig, 2001; Pierre-Louis, 2006; Schiller, et al., 1992; Rogers, 2001; Soto, 1992; Sutton, & Chaney 1992; Vickerman, 2001; Waters, 1999) have revealed that the lives of Caribbean immigrants depend heavily on the identity they are assigned in the U.S. by those who dominate the political, educational, economic, labor, and social landscapes. African Caribbean immigrants found it disconcerting that racial identification was an embedded standard that undergird simple tasks such as completing employment, government, or school related forms (Waters, 1999, p. 53). People other than Caribbean immigrants themselves have a greater role in shaping their social identity (racial and ethnic). Waters described how the employer of a 25 year old immigrant from Barbados recommended that “she should identify herself as a West Indian, not a Caribbean” as she had self-identified. To her employer, Caribbeans included Spanish people, whereas West Indian did not. This

informant has since then “identified herself as a West Indian to others.” (Waters, 1999, p. 47). The identity of Blacks is assigned a racialized label whereas, other non-Black groups are allowed to identify in multiple ways, independently, simultaneously, or situationally, as necessary. In the U.S. Whites are afforded the identity as American, being of an ethnic group, or by racial group. In contrast, Blacks are labeled by skin color without any opportunity to identify differently based upon how the individual feels or sees themselves.

Waters (1999) observed that African Caribbeans identified themselves based upon who they encountered. Among people of non-Caribbean ancestry, they self-identify as West Indian, but around people who are of similar ethnic background or from the Caribbean, they self-identify according to the country or island of origin. Self-identifying according to who is encountered serves as a safeguard from being offended by Whites who may have a narrow understanding of the diversity of Black populations and wrongly assume country of origin, ethnicity, or cultural points of significance. Some African Caribbeans feel that it is better to discuss their identity in general terms when speaking to those who are perceived as not being familiar with the culture (Butterfield, 2004a, 2004b).

In a qualitative study on tailoring health interventions to fit cultural identities (Archibald, 2011), Caribbean immigrants were found to be balancing two cultures in order to best realize their purpose and goal to achieve success within the U.S. society. One interviewee related, “Sometimes I feel like I have one foot in the culture that I’m a part of everyday, and one foot in the culture that I left behind 10 years ago. I came here for a bigger good, for myself and for my children. I am conforming to make society

work...I can act and speak like Americans when necessary” (Archibald, 2011, p. 4).

Caribbean immigrants have a heightened awareness of how acculturation amongst their co-ethnics is met by comments such as, “yuh turn ‘merican a’ready?” The experience of social or intra-group dissonance (Bourdieu, 1986, 2002) increases the complexity of negotiating and affirming self-identities inherent in adapting to a new society. The degree to which balancing identities, and social or intra-group dissonance negatively impact neighborhood dynamics, social networking and mental well-being is unclear. However, stories from Caribbean immigrants suggest that many believe that adopting some aspects of the American society and culture is a natural part of the process of coping in a new environment.

The social narrative for African Caribbean people in many ways is controlled by White or European people, who themselves, have a lineage of migration to the U.S. Waters (1999) has observed differences in the way that White Americans acknowledge ethnic heterogeneity of White race but group African Caribbeans into a superordinate racial category of African American based on blackness and disregarding intra-racial differences. The Census Bureau and other national reporting agencies until recently, have made provisions for sub-ethnic categories for individuals who self-identify as Black (U.S. Census Bureau, 2011). Waters (1999) noted that Americans have generally paid a great deal of attention to ethnic differences in the White race, Census reports contrast the incomes of Irish Americans, Japanese Americans, and African Americans, however, the category of African American fails to distinguish ethnic subgroups such as West Indian or Haitian (p. 45). Collins, Wu, and David (2002) studied intergenerational differences in birthweights among U.S. and foreign born White and Black population. As the authors

describe their findings, a much clearer identification of the White population is offered by referring to participants as “White,” “European-born White”, or “foreign born White”, whereas people of African descent were referred to as “foreign born African American” or African/Caribbean born women.” The former label, “foreign born African American” uses African American as a race rather than ethnicity, whereby foreign born Blacks may have an ethnicity other than American. In addition, the reference to African/Caribbean born women assumes that this group refers to Black people who were born in either geographical location. The labels used within this study may be a limitation of the birth certificate data that was used, but exemplifies the complexity of discussing and identifying people of African descent that research has encountered. Butterfield (2004a) also noted how the rise in immigration also spurred the expansion of which ethnic groups were classified under one racial identity, such that the racial category “Black” included African American, Caribbean people and Africans (p. 1).

Racial and ethnic stereotypes

Being phenotypically identified as Black is met with a number of negative connotations and stereotypes used to categorize an entire group, or “race” of people. According to Waters (1999), African Caribbean immigrants associate African Americans with images of “...the underclass, including drugs, broken families, and criminality”(p. 48). Many Caribbean immigrants are indoctrinated with these biases toward Black people, specifically African Americans, prior to or upon arrival to the U.S. However, some African Caribbean immigrants experience discrimination that is racially-based rather than ethnic-based. This realization was echoed by an African Caribbean informant who stated, “...I don’t think that it is because we are Afro-Caribbean, but because we are

Black” (Archibald, 2011, p. 6). Despite differences in ethnic identities, African American and African Caribbean immigrants share a similar experience and perception of the social dynamics of the U.S. when it comes to race.

Immigrant identities

The perpetuation of race-based and nativity-based (U.S. born or non-U.S. born) biases that are rooted in an overarching system of structuralized racism is divisive. An African Caribbean participant in Archibald’s (2011) study gave a reason for not wanting to be identified with African Americans: “We are not African Americans who think that all their shortcomings are the result of slavery; all Black people experienced slavery...in fact, we from the islands get a double whammy being Black and foreigners (p. 6). For the purposes of this study, the interpretation of findings center on the structural elements and the byproduct of structural environments that individuals may be exposed to (i.e. neighborhood perceptions, length of time spent within the physical and social environments of the U.S. and local neighborhood environments) that would offer explanations for the current perceived health status, rather than an analysis based upon cultural perceptions.

Through the work of Butterfield (2004), Kasinitz (2001), and Waters (1999) Caribbean peoples assert two different experiences in negotiating identities within the American paradigm. More often, specific immigrant identities are lost within the social construct of Black identities. At times, the immigrant identity is highlighted; however, the national identity is not typically affirmed. Thus, first and second generation immigrants feel invisible in the host society, except for the fact that their phenotype is prominent. This sense of invisibility (Bryce-Laporte, 1972; Waters, 1999) is supported

by the dearth of research that examines the health experiences of Caribbean populations. The social implications of being an immigrant while also being black merits further inquiry. The story that comes forth through research that includes nativity and generational legacy should not be discounted by the assumption that all Black experiences are the same despite some shared experiences. As a consequence of many driving forces, the presence, visibility, and affirmation of the identities of Caribbean people have grown in the spheres of business, politics, and education (Crowder & Tedrow, 2001).

African Caribbean Social Environments

One example of the way Caribbean immigrants have influenced the neighborhood context is by establishing enclaves. According to Pierre-Louis, Jr. (2006), the Flatbush section of Brooklyn, New York was one of the largest Haitian enclaves in the U.S. during the 1970s and 1980s. The author describes the growth in this community according to numerous Haitian grocery stores, restaurants, dry cleaners, and taxi stations competing with other immigrant businesses. The community has more than ten radio programs and four 24-hour radio stations covering the whole New York metropolitan area. There are three major Haitian weekly newspapers in Creole and French, and one English newspaper aimed primarily at the children of first-generation immigrants. There are thirteen Catholic parishes that have either a Haitian pastor or a full-time Haitian priest serving the needs of the community and more than 250 Haitian Protestant churches in Brooklyn (p. 33). The enclave helps to reinforce social capital and extended family networks help provide socioeconomic opportunities.

In Haitian enclaves in New York City, Laguerre (1984) found that within a given apartment building, neighbors look to each other for support and the apartment building functions as total institutions... “Among one’s fellow tenants one can find a tailor, a car-pool driver, a mason, a barber, a hairdresser, a folk healer, a dressmaker, an electrician, and more” (p. 96). The Haitian store is a community meeting place as people go there not necessarily to buy goods but to greet the manager and engage in a bit of gossip. The store owner is the chief interpreter of news for passersby. The manager is asked for information on housing, health problems, and the school system. He provides an array of free social services to clients, from consoling a grieving mother to counseling a husband who is going through a divorce (p.123-124). The informal economy is particularly helpful within poor neighborhoods. Small businesses such as private, home-based restaurants provide a feel of home for immigrants while providing a source of income for the owner. The business model is typically comprised of an unemployed woman who cooks for the bachelors of the building and the neighborhood who enjoy the family setting and the opportunity to socialize with other workers (p.115-116). The additional benefit of building relationships with neighbors in this manner is that single individuals, in particular, may be cared for by the family they eat meals with during times of illness (Laguerre, 1984).

Politics within the ethnic enclave

Hometown associations are a conduit for transnational political and economic activity for immigrants. Community leaders within these associations serve as a resource and voice for the interest of the community within the U.S. and abroad in matters of local and national concern in the country of origin. The associations have been successful in

supporting political candidates during elections, building infrastructure in the home country, transnational businesses by contracting with Caribbean retailers to sell their goods in the U.S., raising funds, and organizing cultural and religious events. The political activities of organized groups function to bring attention to the Haitian community and its value to the larger society. Pierre-Louis, Jr. (2006) concludes that U.S. politicians who seek support from Haitian-Americans are forced to deal with their homeland politics to gain the political support of the Haitian community. Mayor Bloomberg's invitation to Haitian leaders to commemorate Haiti's independence at Gracie Mansion was just part of his strategy to gain the community's support when he sought another term in office (p. 118). According to Pierre-Louis, Jr., "Mayor Bloomberg's action is an illustration of how Haitian immigrants are successfully using ethnicity and city politics to carve out their own space in the city" (p. 119). Kasinitz (1992) also describes in earlier years, how the African Caribbean population was sought by the Koch campaign to endorse his quest to become New York City Mayor. On the surface, some immigrant African ethnic groups have been more successful than others, contributing to a divided Black population. The racialized hierarchy that marginalizes Blacks remains the basis for decisions, opportunities, and economic benefits in the larger society.

Religious adaptation to migration

Between 1950 and 1980, Caribbean people accounted for 20% of the total number of immigrants internationally (Sutton & Chaney, 1992), signifying the extent of their presence and influence on the demographic makeup of cities. Sutton & Chaney (1992) noted how neighborhood characteristics have been transformed to mirror the cultural

essence of Caribbean life and in places where the Caribbean population made up a significant portion of urban areas. With the increase in Caribbean migration post 1965, the practice of indigenous African religions became more prominent within the social landscape. Gregory (1992) noted that the traditional spiritual systems serve as a means of strengthening cultural ties and help reinforce spiritual and mental grounding in response to the upheaval of the migration experience and social strains encountered in the U.S. (Gregory, 1992). The study of Caribbean religions in New York City finds that religious leaders are often consulted for advice from members of their congregation as well as non-members (Schmidt, 2008). A spiritual leader of the Yoruba-Orisha Baptist Church in Brooklyn comments, “When they have a problem, they come to the Baptist Church...Sometimes they come when they have a problem that a normal doctor can’t cure. Or they have a great problem, when they have a child that is very sick. And when they have a child that is out of control, that doesn’t go to school...We pray for them...We have washes” (p. 47). The traditional religions embrace individuality without centralized dogma, unlike Western religions, which is believed to be able to address the specific circumstances of the individual in a way that is meaningful to them (Schmidt, 2008).

In other words, although some traditional practices are housed within some structuralized religious systems, there is not a ‘one size fits all’ approach to meeting the spiritual, emotional, or practical needs of the community. The focus of spiritual practices is to seek pragmatic solutions to problems in the immediate worldly realm. The church serves as a vehicle that bridges immigrants adjusting to the new environment with their country of origin. The role of one of the churches studied is described as follows, “The church manages to build a bridge to Trinidad and Tobago emotionally through the use of

the common language, music, and of course the endless private conversations before and after the services and festivals...The community offers migrants a network of connections as well as an emotional collecting point in a stressful time, particularly for new comers...If no relative lives in the new environment, and the problem cannot be solved from a distance, then the church can fulfill this function” (Schmidt, 2008, p. 53). Another practitioner of the Yoruba religion comments, “I think that Yoruba religion has helped people on an individual level to try to deal with their lives, or find meaning in their lives-meaning and purpose. That’s a pragmatic thing...Most of the Christian religions don’t approach that (Sutton & Chaney, 1992, p. 298).

The resources offered by enclaves speak to the immigrants’ experiences with acculturative stress. Gilkes (2007) describes the onset of acculturative stress as, “...when an immigrant individual faces attitudinal, behavioral, and value conflicts...between his or her original culture and those of the host society” (p. 27-28). The author goes on to explain that the effects on mental health may be short term, long term, or episodic. Other factors in conjunction with factors related to acculturative stress may have a stronger influence on overall mental health status than acculturative stress alone as demonstrated by studies that demonstrate better mental health among non-U.S. born groups compared to U.S. born counterparts (Miranda, Siddique, Belin, & Kohn-Wood (2005). Sources of stress for African Caribbean immigrants include status reduction as a result of professional credentials earned in the home country not being recognized or accepted in the host country, separation from family, racism or discrimination in work environments, and financial concerns. Conflicts in terms of differences in opinions and outlooks on life between successive generations and first generation immigrants present another

dimension of stress associated with adapting to a new environment for individuals within the family unit.

Immigrant Health: Cultural versus Structural Explanations

Attributing success of certain African groups to an “ethnic” advantage attempts to frame advantage or disadvantage within the same racial group as a matter of culture rather than concede race is the foundation of social inequality. The literature has suggested differences in health outcomes between African Caribbeans and African Americans could be explained by cultural differences or contexts of origins (Read & Emerson, 2005) that are attached to perceptions that African Caribbeans fare better because they represent a “model” minority of African descent who transcended limitations of racial discrimination. Child-rearing among Caribbean immigrants has adapted some of the American norms, conversations, expectations, and balances. In Archibald’s (2011) study, a Caribbean parent note that they are criticized for having a ‘watered down’ version of Caribbean childrearing practices by adopting the American norm of being more verbally expressive of endearment toward their children. However, some Caribbean traditional values remain firm, such as the value for education. Another parent mentions, “...Most importantly, our children know that bringing home a ‘C’ [grade] is not acceptable” (p.5).

Several authors, including Model (2008), Mahoney (2005), and Pierre (2004) point to articles such as one written in the magazine, *The Economist*, entitled, “Black Like Me” (May 11, 1996) that leave the reader with the impression that race is not a relevant factor, but that life chances are rooted in hard work, willingness to struggle, and having a sense of gratefulness for opportunity that is directed at the White dominant

society, rather than having a sense of entitlement to fair opportunities. Immigrants of African descent are compared to African Americans in this regard, with the belief that the latter do not possess such desirable “cultural” traits. Waters (1999) also made similar observations of the manner in which studies may contribute to notions of cultural differences tied to the degree of merit, work ethic, and values that draw attention away from macro-level influences. Read, Emerson & Tarlov (2005) conjecture, “Immigrants in general are more self-efficacious, have better health, and are more capable than the general population of their emigrant nation” (p. 210). Although it was not the intent of the authors to conduct an empirical analysis of immigrants and their compatriots, the high regard of immigrant capacity and ethic in comparison to non-immigrants could be interpreted in a way that would place characteristics of immigrants in higher regard than characteristics of U.S. born African Americans or successive generations of immigrants in the U.S.. As a consequence, stereotypes and perceptions that pit one group against the other, curtail the understanding of differences and similarities when taken within proper context. Furthermore, such sweeping generalizations mask structural factors as the cause of health disparities.

The importance of studying African Caribbeans and African Americans within the framework of the present study is the contextualization of the experiences of the two groups while exploring similarities and differences in health outcomes and perceptions of the social environment. It is argued that African Americans and African Caribbeans share similar exposures and experiences within a racialized social hierarchy that may yield similarities in health trajectories beyond those measured at the point of recent migration. In addition, differences by nativity may be attributed to the degree of

adjustment to the new environment rather than cultural merit. This study, through secondary means, challenges the notion of differences by meritorious standards that have been used to justify post-racial sentiments and places attention on structural aspects of the social environment as a fundamental commonality.

The present study integrates these social evolutions to examine how health is differentially influenced given the differences between African American and other groups of African descent that migrate to the U.S.

Residential Settlement Patterns and Perceived Neighborhood Environment

Ethnographic studies pertaining to Caribbean immigrants, race, and identities are more prevalent than in depth explorations of neighborhood influence and health. Margai (2009) has examined the theoretical models often used to describe the social processes that influence immigrant health. The acculturative and health convergence paradigm or the racial context origin paradigm appears to more aptly apply to Caribbean immigrant experiences. The consequences of immigration policy, which has historically excluded immigrants with pre-existing health conditions, brought about a third paradigm-the healthy immigrant effect. Each of these paradigms for explaining health advantage or disadvantage with successive generations living in the U.S. will be discussed in Chapter three on social and epidemiological theories.

The manner in which Caribbean immigrants prepare and adapt to the process of transitioning to the US is important to consider. The personal life histories of immigrant women shows that some Caribbean mothers choose to emigrate to the U.S. leaving their children in the home country during their formative years. They perceive the home country to be safer and a suitable place for their children to form a more solid Caribbean

identity. The home country comparatively is perceived to be more salubrious than the neighborhoods in the U.S. (Soto, 1992). However, separation from family would reasonably have some effect on the emotional or psychological well being of children who eventually arrive in the U.S.

Crowder & Tedrow (2001) relate racial identities to residential settlement patterns when exploring the dynamics of life for Caribbean populations. The authors found that settlement patterns are shaped, on some level, by phenotype and the classification of being Black. Caribbean populations are concentrated in predominantly Black neighborhoods. Given the spatial proximity to each other, it is often assumed that African Americans and African Caribbean immigrants perceive the environment similarly. However, nested within these concentrated Black neighborhoods, African Caribbean populations have formed enclaves with distinct cultural elements that may yield different perspectives on the social and physical environment. Although African Americans and African Caribbeans are residentially segregated from White populations, sub-ethnic group segregation exists; however, some overlap between African American and African Caribbean neighborhoods occurs. African Caribbean populations tend to live in neighborhoods with a larger proportion of homeowners compared to African Americans (Mwakikagile, 2007). The formation of ethnic enclaves among Caribbeans during the 1970s was primarily facilitated by the White flight in which Caribbeans, more so than African Americans were able to secure access to more affluent neighborhoods that had a higher tax base and more public services than the predominantly Black neighborhoods. Because of their immigrant status African Caribbeans are thought of as different from the African American population (Waters, 1999), which makes residential

mobility more likely (Crowder, 1999; Crowder & Tedrow, 2001). However, the benefits associated with inheriting an abandoned White neighborhood dissipate as disinvestment in infrastructure accompanied shifts in demographic and racial composition of neighborhoods thus, neighborhoods assumed new identities. For some Caribbean immigrants, their perspective on neighborhood quality is tied closely with culture and class more so than race.

Unlike the spatial assimilation models that predict immigrant mobility into integrated neighborhoods or neighborhoods outside of the enclave, the degree of segregation among Caribbean immigrants persists. Using formal indices of segregation that measure the degree of separation, Crowder & Tedrow (2001) found that during the years 1980 and 1990, the degree of segregation between Caribbeans and African Americans were similar (dissimilarity= .43 and .42, respectively). When the degree of segregation for both ethnic groups as compared to White, Asian, and Hispanic groups the degree of dissimilarity, meaning the degree of disproportionate distribution based upon population size, was much higher, ranging from .68-.81.

The neighborhoods in which Caribbean immigrants reside benefit the social well-being for some. Olwig's (2001) study noted that social bonds form or continue when immigrants meet up with relatives and friends who are already established in their neighborhoods. Tight knit neighborhoods and communities are seldom full of strangers, particularly in the enclaves. It should be noted that African Americans shared close knit neighborhoods full of relatives and friends; however, the systematic destruction and rebuilding of neighborhoods tore apart these social networks (Fullilove, 2004). Olwig (2001) also found that movement out of ethnic enclaves by second generation immigrants

or the children of immigrants, is not a sign of cultural assimilation that would fit the assimilation theories that have been applied to Hispanic and Asian populations; rather it is due to the second generation's interest in becoming independent and reach self-actualization.

Neighborhood preference

Although Caribbean immigrants desire to live in safer neighborhoods and neighborhoods with better quality schools, ambivalence in leaving all Black neighborhoods is apparent (Waters, 1999). For some Caribbean families, living in an all white neighborhood is perceived to be risky or evoke feelings of insecurity than living in a more resource poor community. The fear and expectation of disparate treatment, attacks, or physical harm from the police and neighbors limit their choices of residential areas (Kisinitz, 1992). Overtime, "immigrants describe how the longer they are here, the more they learn to see race operating in interactions where they would not have expected it when they first arrived" (Waters, 1999, p. 189). Because of the noticeable hyper-vigilance and emphasis on race in day to day activities in the U.S., some immigrants have learned to discern when skin color is the basis for certain responses or treatment. Informants in Waters' (1999) study reported that their homes in a predominantly White New York neighborhood were fire-bombed. Such violent acts send a message that racial integration of neighborhoods is not desired, at least on the part of some White people. As a result, some of the immigrants Waters interviewed idealized the best neighborhoods for them would be mixed neighborhoods. Fear of retaliation and feeling like a pioneer in an all White neighborhood prevents immigrants from buying homes in these areas.

Experiences with structural and interpersonal racism have a profound effect on coping. Subjective assessments of neighborhood environments may influence perceptions of overall physical and mental health because of living conditions or circumstances experienced in neighborhoods with different racial composition. One interviewee in the study conducted by Waters (1999) expressed ambivalence with regard to residential neighborhood selection, “I am hoping to get out of this neighborhood. I think for you to have a true feeling of what United States is, you can’t live around so many blacks. I find that in the white neighborhoods and the white schools, their children are exposed to more difficult things, more opportunities are there...I would prefer to live where there are opportunities...Not that I am going to go somewhere where just whites live and my child’s going to be uncomfortable...”(p. 245).

Other perceptions of neighborhoods diverge from what other people may perceive as normal or acceptable living conditions. Waters (1999) describes how second generation immigrants, in particular, normalize to a certain degree, aspects of social disorder. Caribbean immigrants report increased neighborhood dissatisfaction; however, the children who engage in acts of crime, hesitate to contribute to the degradation of their neighborhoods and prefer to commit crimes in more resource poor communities. One youth from a middle-class neighborhood told Waters that he and his friends respected that his parents lived in a good neighborhood, so they took their illegal activities someplace else... “You don’t do stuff around here, if you want to do something, we go to Flatbush...to rob a store” (p. 247). Another woman describes her neighborhood, “I wouldn’t call it terrible, but it’s somewhere close to that because on my specific block it’s not bad. They do have drug dealers at both corners. But that tends to keep the

neighborhood peaceful from anybody starting trouble...But it's not like it's a safe neighborhood. There are shootouts and a guy got shot like right in front of our door downstairs. A stray bullet came through our window, and my mother got mugged a few blocks away (p. 247). Children are also affected by their parents' need to keep them safe.

Although some Caribbean immigrants reported high degree of social interaction with neighbors, others reported greater social distance (Waters, 1999). One parent described her feelings about residing in public housing and how it affects her son, "I worry about my kids...my kids are not into drugs. But they hang out. And the cops just see a lot of black kids and they just approach them....Because of living in the projects you eventually start getting treated as, you know, a bad element" (p. 248). Parents had different opinions about living in racially/ethnically mixed neighborhoods. Some report friendly relationships, "I see Jewish people coming in the park and playing basketball. And it's real fun to see them playing ball with us...(p. 253). On the other hand, some tensions were also reported by some parents. One noted that because of the presence of Jews in the neighborhood there were some benefits such as increased police presence however, there remains a looming discord between the groups, "...the Jews don't like the blacks and the blacks don't like the Jews. So we always fighting...If you say excuse me, they make a smart remark like, walk in the streets, or something like that. So we don't get along with each other. But it's a safe place" (p. 253). Waters also found that immigrants rated their neighborhoods as fair or good despite the presence of crime. The distinguishing factor between a fair or good neighborhood and a bad neighborhood relied on the degree residents perceived whether the crime is blatant or more serious creating

potential ambiguity in determining the degree to which perceived neighborhood environment influence health outcomes.

Disillusionment with the immigrant and neighborhood experience

Gilkes (2007) documented ways how pre-migration expectations of the environment are not congruent with immigrants' perceptions of the environment once they arrive in the U.S. A visitor on vacation may perceive the U.S. differently from perceptions of new residents. Some African Caribbeans were disappointed with the reality of the built environment, work conditions, and interpersonal relations. "I had a very skewed idea of America...My impressions of America, as a young man was that you would walk down the street, and get money, for some reason, I saw all the burnt-out buildings in America...what disappointed me most of all is the burned out buildings, the dilapidated buildings I'd seen in the neighborhood. I was like-This is America!...Barbados is better than this..." (p.60-61). Another African Caribbean teacher commented, "I remember on my first visit to this country I was told by two person, I should not even return home. That they could get me a job that I would be able to live and I'd be able to work...it took me approximately six months before I could get a job" (Gilkes, 2007, p. 62-63).

Acculturative stress among immigrants depends on how incongruent the current socioeconomic status is with previous status in the country of origin. Often the credentials of professionals are not accepted in the U.S. therefore, immigrants are forced to take lower status positions (Daniel, 2005). Social workers, who have counseled Caribbean immigrants have found that the process of acculturation also has its stages of

emotional change. For example, the first phase is one of elation and newness, the second phase is one of guessing and internal struggle with having made the decision to leave their home country. A feeling of helplessness may also be felt as a result of the loss of independence and increasing dependence on others during transition. A process of grieving takes place. The difficulty with coming to terms with decisions requires a renewed optimism that things will work out in the end. Prayer and spiritual support are some of the means through which coping occurs (Daniel, 2005).

Stories of anti-immigrant sentiments are also part of the immigrant narratives. One teacher recounted a student's remark. "I was born in the Bronx. I belong here. You're an immigrant"(p.75). Immigrants' sense of self and view of the environment were affected by hostile sentiments held by young and older people towards them. The period of adjustment is fraught with challenges that take a toll on one's self-esteem. One immigrant stated, "...when I was living with relatives, I was dependent on them to provide me with clothes a shelter, food, and my sister-in-law was even giving me an allowance, occasionally. So as an adult, who was once independent...and then-to go to that extreme to be so dependent on someone...I felt less than a woman (p. 86).

Although experiences with residential discrimination may not be as covert in areas like New York City, institutionalized residential segregation limits choices of neighborhoods for Caribbean immigrants. One woman responded, "this neighborhood-first, I had no choice. This is where I got an apartment" (Gilkes, 2007, p. 105). Another informant noted, "I wanted to move form Brooklyn. I had enough of it...people in the neighborhood that I was living at didn't have respect for property. ..I wanted to buy a home, and if you don't have respect for property-No property owner can tolerate that. It

seemed they didn't have a value system. Plus, I had enough noise...Living there for ten years, I guess I had enough...(p. 106). Another informant noted, "A lot of crime, and I was aware of it. Living there was like you don't want to be on the street...you didn't feel comfortable ...standing on the step for some fresh air, because you don't know if someone would come at you...down the street with a gun, just firing bullets at random. I had that experience"(Gilkes, 2007, p. 119).

Mahoney (2005) points out several factors that influence the well-being of immigrants, particularly women, who migrate at an older age. More likely, immigrants who emigrate later in life do so for reunification with family members. Their emotional and mental state can be compromised due to weakening of social ties in the country of origin, decreased likelihood for returning home (as many immigrants come to the U.S. with the intention of returning one day), increased dependency on others while making the transition and fears for safety while in a new environment. Clarke (2005) describes how the 1996 Welfare Reform and Illegal Immigration Reform and Immigrant Responsibility Acts (IIR & IRA) came with serious consequences for Black immigrants who were entangled in legal matters as a result of these acts. Linked to these acts are fear of deportation and mental and financial stress. For example, the author recounts instances where legal immigrants who had already paid their debt to society for a minor offense or misdemeanor, such as driving with a suspended license, was still subject to deportation years after the offense was committed and settled. People of African descent are prime targets for imprisonment, racial profiling, imprisonment for non-violent offenses, and excessive and disparate penalties that are part of racist politics (Alexander, 2010). Historically, countless cases of conviction, coerced guilt, or plea

bargains have been instituted, despite the innocence of poor people who merely did not have the legal or financial means to dispute charges and allegations against them. Loss of household income, job, and health insurance are a few of the devastating consequences that policies have had on Caribbean immigrants. Clarke (2005) also recounts a situation where the mentally ill are deported back to their country of origin. Despite having served in the U.S. military for the majority of their adult years, veterans were criminalized and deported back to Jamaica.

Health Outcomes

Some informants described the physiological and psychological effects of neighborhood stressors. One woman said, "...when I'm being stressed...I don't sleep well...I'm always feeling tired, I, I don't even think properly, clearly, when I'm stressed...I just have like a Blank feeling, like no emotions. I have used all my emotions..." (Gilkes, 2007, p.121). Some immigrants take the position that some stressor should not be taken too personally and are temporary states. Although, there is awareness that stress has a negative effect on their demeanor and ability to function, they did not link these stressors with their physical and mental health (Gilkes, 2007). An informant suggested, "I believe you are healthy if you are able to carry out your daily activities" (Archibald, 2011, p. 6). Seeking help for mental health and taking medication beyond physical ailments like diabetes or hypertension were not highly accepted. The belief in self care was common (Archibald, 2011; Gilkes, 2007).

Statistics on health outcomes, such as the infant mortality rate illustrate the Caribbean population has experienced adverse trends. Bayne-Smith, Graham, Mason, & Drossman (2005) observed from 2000 data that Caribbean women in New York City had

the highest infant mortality rates (IMR) of racial/ethnic groups. The rate was higher than the city average. Haitian women had an IMR of 13.9 and Jamaican women had a rate of 9.4 compared to the city average of 6.7 deaths per 1,000 live births. The national Healthy People 2000 goal was 4.6. In their study, the authors observed that 25% of Jamaican females felt language was a barrier to receiving adequate health care services despite being from an English speaking country. For Kreyole or French speaking Haitians, almost twice as many participants (40%) felt language was a barrier. Archibald (2011) also found language was a barrier for English speaking Caribbeans. In terms of SES, immigrants who arrived post 1980 were more likely to be of lower SES and working class as compared to previous waves of immigrants who were of higher SES and professional classes. The later immigrants were more likely to utilize traditional medicines because they were less expensive means of treatment than western medicine. Many of the later immigrants were uninsured.

The present study examines the two groups' (African Caribbean and African Americans) perceptions of their neighborhood environment that has been less studied in the immigrant literature. The structural realities for first generation immigrants and their children may result in wear and tear on the physical and mental well-being. Waters (1999) has noted that the conflict between the self- identities immigrants have of themselves and those ascribed by the new society may result in downward assimilation. The discussion of the historical and social perspectives of the Caribbean experiences in the United States is pertinent to the present study as ethnicity and race are viewed as markers or expressions of history and relationships. Factors such as racial composition of neighborhoods speak to how accessible or limited one's sphere of influence may be.

Kwate & Meyer (2011) suggested that stereotypes of Black people perpetuate racism and can be embodied in a manner that ultimately affects health. The concept and construct of the physical environment can be produced and modified by stereotypes of groups of people (Franck, 1984). Historical experiences, including but not limited to discrimination, exposure or conceptualization of neighborhood threats or stressors, all contribute to physical and mental health perceptions, a proxy for objective measure of health.

Chapter 3

Review of Literature

According to the National Institute of Health (NIH), health disparities are differences in the incidence, prevalence, mortality, and burden of diseases that specific populations experience more disproportionately than others (National Cancer Institute, 2010). The primary focus of the proposed study is to examine the social and environmental factors that perpetuate health disparities. The literature on social contexts that shape individuals and neighborhoods has expanded the understanding of complex interrelationships between individuals, environments, and health status. Recently, the notion of subjective realities comprised of self-identification processes, social status and position, psychosocial states, and historical and political events that translate into objective realities (Berger & Luckmann, 1966), has paved for a better understanding of health disparities (Krieger, 2012; Marans, 2003; Massey, 2004; Williams & Collins, 2001). Hence, the expression of these social determinants of health offer a framework that anchors the scope of inquiry in an attempt to identify which social determinants account for more of the differences in health status than others.

Historical experiences are particularly a key component of the idea that the life-course predicts health outcome trajectories as individuals biologically and psychologically embody these experiences (Geronimus, 1996; Krieger, Williams & Moss, 1997; Krieger, 2001; McEwen, 1998; Raudenbush & Sampson, 1999). As such, discussion of the experiences of African American and African Caribbean peoples is necessary for understanding how racialized economic, political, and social systems,

immigration politics, and the formation of personal identities and perceptions is necessary.

Social Contexts of Health Disparities

Racial residential segregation

According to Massey and Denton (1987, 1993), institutionalized hypersegregation of residential spaces began after 1913 as a result of complex social, political and economic circumstances. Hypersegregation occurs when populations are segregated by multiple indices using the five measures of *dissimilarity/evenness*, *interaction*, *clustering*, *centralization*, and *concentration* (Massey & Denton, 1993; and Williams and Collins, 2001). Hypersegregation is a product of social, racial, and ethnic stratification, where populations are intentionally and systematically geographically bound. By 1930, at least two-thirds of the Black population, nationally, lived in neighborhoods with a racial composition that was at least 90% Black. The urbanization of the Black population was attributed to major internal migration from the rural South to the North and immigration. By 1940, the degree of racial segregation in urban neighborhoods increased dramatically such that, 70% of Blacks would have needed to relocate out of the neighborhood in order to create the balance of racial composition that is similar to non-racially segregated neighborhoods (Cohen, 1990).

Racial residential segregation is a systematic process that creates the forced physical separation of people of African descent from White and other racial and ethnic groups by way of discriminatory housing policies, financing and real estate practices, and physical threats to life and property (Fullilove, 2004; Lemann, 1992; Massey & Denton,

1993; Williams & Collins, 2001). Community based practices such as “blockbusting” incited inter-racial and ethnic violence and fear, “steering” coerced potential Black buyers away from certain neighborhoods, and covenants that prevented the sale of homes to Black families, were common. Institutional practices also contributed to racial residential segregation. The policy of “redlining” dictated the geographical location where banks could finance home loans to Black families. The urban renewal projects under the Federal Housing Act of 1949 supposedly to improve neighborhood quality, actually maneuvered low income Black families to high density housing structures (Fullilove, 2004; Lemann, 1992; Patillo-McCoy, 1999) and changed the social and physical environment of neighborhoods.

Racial residential segregation in the U.S. is part of the long and ongoing history of race or skin color-based inequities. While some legislation such as the decision in *Shelley v. Kraemer* (1949) and the Federal Fair Housing Act of 1968 broadened opportunities for disadvantaged groups, these were not effective in removing racial residential inequities. Neighborhood associations in predominantly White neighborhoods supported the enforcement of private agreements or *covenants* that restricted residents from selling their homes to Blacks to prevent racial integration and preserve White neighborhoods. Housing developers used these covenants to preserve the racial segregation in newly built suburban communities. These efforts were cloaked in the rationale to promote neighborhood stability (Lemann, 1992; Patillo-McCoy, 1999; Hester, 2008; Ruff, 2007). Although in the case of *Shelley v. Kraemer*, the court ruled that restrictive covenants were unenforceable by state courts under the 14th Amendment, however, creative strategies that promoted discrimination continued. Federal housing

policies continued to support the use of race and ethnicity as a basis for making decisions on the sale of homes. Title VII of the Civil Rights Act of 1968 or the Federal Fair Housing Act stopped these practices by prohibiting discrimination in the sale, rental and financing of dwellings based on race, color, religion, sex or national origin and stipulated enforcement procedures (U.S. Department of Housing and Urban Development [HUD], 2012, p.1). However, data from the 2010 U.S. census show that racial residential segregation continues to exist (Frey, 2010).

Race and place stratification consequently situates African Americans among the lowest tier of social standing (Alba & Nee, 1997) and often located in neighborhoods farthest from sources of employment, with little hopes of residential mobility. Communities with large concentrations of African Americans and other groups of African descent, have a greater likelihood of having features that are deleterious to health, such as the presence of concentrated poverty, low social mobility, poor physical infrastructure (Massey, 2004; Williams & Collins, 2001) and higher rates of adult and infant mortality (Acevedo Garcia, Lochner, Osypuk, & Subramanian, 2003; Bell, Zimmerman, Almgren, Mayer, & Huebner; LaVeist, 1989; Acevedo-Garcia, Lochner, Osypuk, & Subramanian, 2003; White & Borrell, 2006; Williams & Collins, 2001). Therefore, the social context and ecological vulnerability of neighborhoods vary by race, ethnicity, nativity, and social standing within society. The racial composition of neighborhoods has some relation to neighborhood induced stressors.

Racial residential segregation was not only relegated to urban centers, but was also reflected in the growth of suburban communities. As White populations sought to expand their spatial distance from Blacks, spatially mobile Black families inherited

neighborhoods that were once occupied and abandoned by White families. More recent trends in settlement patterns show that Black families move into more diverse neighborhoods last, as compared to Hispanic and Asian families (Logan & Zhang, 2011; Patillo-McCoy, 1999). As a result, predominantly Black suburbs developed without resolving the issue of systematic segregation and the unevenness in the development of communities has continued because of institutionalized structures such as racial and ethnic residential segregation (Sampson, Squires, & Zhou, 2001). The lack of equal access to financing and political power has eroded suburban Black neighborhoods resulting in spatial inequities experienced by Black non-immigrant and immigrant groups.

The experiences of suburban middle class Black families remain quite different than those of White middle class suburban families. Elevated crime rates, lower academic performing schools, and exposure to unemployment and poverty are visible in Black middle class neighborhoods (Logan, 2011; Pattillo-McCoy, 1999). Socioeconomic position (SEP) and social status linked with racial and ethnic groups are more influential than SES. The effect of residential segregation within the suburban context is salient to the study of neighborhood effects on immigrant health because the changing geography of immigrant settlement patterns shows suburban areas are increasingly becoming gateway destinations for newcomers although immigrants of African descent remain primarily tied to urban areas (Alba, et al., 1999).

Although new trends in suburban residential patterns are emerging, the traditional place of settlement for new immigrants of African descent remains predominantly in metropolitan urban areas (Crowder, 1999; Logan & Deane, 2003). Caribbean

populations in particular, reside in areas where African Americans are concentrated (Alegria, Jackson, Kessler, & Takeuchi, 2003; Jackson, et al., 2003; Logan & Deane, 2003; Kent, 2007). Despite the shared experience of residential segregation, there are sub-ethnic population differences in the ability to acquire and maintain social and economic networks. One study of African Caribbean and African American residential contexts revealed greater opportunities for African Caribbeans to engage in homeownership, entrepreneurship and concentrate in subdivisions of predominantly African American communities with higher median income (Crowder, 1999).

Empirical Findings on Health Disparities

People of African descent are disproportionately affected by the leading causes of death, such as heart disease, diabetes, hypertension and hypertensive renal disease (ranked as #1, 7, and 13, respectively) (Murphy, XU, & Kochanek, 2012) and health states that contribute to these conditions. For example, in 2009, African Americans were 1.5 times more likely to be obese as non-Hispanic Whites (US Department of Health and Human Services [USDHHS]-Office of Minority Health, 2011) and more than half of Black women are overweight and have higher rates of obesity than any other racial and ethnic group (CDC, 2006; Collins, Jr., Wu, and David, 2002; U.S. Department of Health and Human Services-Office of Minority Health [USDHSS-OMH], 2011). The onset and exacerbation of health risks are mostly related to preventable lifestyle factors (USDHSS, 2003) attributable to personal choice; however, choices and behaviors are greatly influenced by the ecological environment, access to healthful resources, and overexposure to non-healthful resources (Diez-Roux, 2003; Dubowitz, et al., 2008; Kwate, Yau, Loh, & Williams, 2009; Osypuk, et al., 2009). The proliferation of high

body mass index (BMI), a measure for obesity, among succeeding generations of immigrants can be partially attributed to cumulative effects of neighborhood or environmental exposures (Antecol & Bedard, 2006; Elo, Mehta, & Huang, 2008).

There is increased interest in further understanding how race, ethnicity and migration status influence the health status of Black populations in the U.S. However, many of the early studies that examined the intersection of these variables have focused on birth outcomes (Acevedo-Garcia, Soobador, & Berkman, 2005; Bell, et al., 2006; Buka, et al., 2003; Cabral, et al., 1990; Collins, Wu, & David, 2002; Gould, et al., 2003; Grady & McLafferty, 2007; Liu & Laraque, 2006). Birth outcomes are particularly relevant to this perspective because they embody the range of social, biological, and environmental factors that predict life-course and health outcomes trajectory. A small but growing body of literature has examined other health outcomes in the context of the health status of immigrants of African descent, including self-rated health, physical activity, cardiovascular disease, preventive screening, and dietary practices (Gany, Trinh-Shevrin & Aragonés, 2007; Haas, et al., 2008; Patil, Hadley, & Nahayo, 2009; Thorpe, Brandon & LaVeist, 2008; White, et al., 2011).

According to the National Center for Health Statistics [NCHS] (2008), the infant mortality rate among Blacks in the U.S., including immigrants greatly exceeded that of any other racial and ethnic group at approximately 13.6 deaths per 1,000 live births as compared to Cubans with 4.4, Asians with 4.89, Mexicans with 5.53, and Puerto Ricans with 8.3 deaths per 1,000 live births. Although the percentage of infant deaths from preterm related causes increased between 2000 and 2005 for all racial and ethnic groups, Blacks were disproportionately affected with 46% of infant deaths due to preterm birth

compared to 33% among Mexicans. Liu and Laraque (2006) also found higher infant mortality rates among U.S. born and foreign-born Black women as compared to White women.

Among women of African descent, foreign born Black women had lower infant mortality rates (9.1 per 1,000 live births) than U.S. born women (14.2 per 1,000 live births) (Commonwealth Fund, 2008). The work of Cabral and colleagues (1990) showed that foreign born Black women had lower odds of low birth weights, better pre-pregnancy nutritional status and prenatal health behaviors compared to U.S. born Black women. Opportunities to reduce infant mortality rates through access to prenatal care were less than optimal as 34% of Black women, nationally, had not received services in the first trimester (Commonwealth Fund, 2008; NJDHSS, 2008; Shin et al., 2004).

Studies that focus on other health measures that pertain to immigrants of African descent find significant differences by sub-ethnic population and country/region of origin (Read, Emerson & Tarlov, 2005; White, et al., 2011). Research that disaggregates the study sample has the potential for examining other social contexts that would otherwise not be captured (Zsembik & Fennell, 2005). Compared to the average White American, African immigrants have 36% lower odds of self reported fair/poor health and 66% lower rate of limitation of daily activities due to illness. West Indian respondents also referred to as African Caribbeans, have 41% higher odds of reporting fair or poor health compared to U.S. born Whites and 22% lower odds of limitations in activities due to illness. European Blacks are four times more likely to report fair or poor health and are more likely to experience limitations in activities compared to U.S. born Whites (Read, Emerson, & Tarlov, 2005; Read & Emerson, 2005). Although an immigrant health

advantage is evident from these findings, the advantage associated with first generation immigrants dissipates as the health status and SES of succeeding generations declines and flattens, respectively (Acevedo-Garcia, et al., 2010; Pallotto, Collins, Jr. & David, 2000; Collins, Jr., Wu & David, 2002; Minnesota Department of Health, 2008). Immigrant generational status appears to have importance in understanding the cause of widening health disparities over time. Examination of environmental structures and resources is needed as these may operate differently among immigrant generations.

Immigrant Health: Conceptual and Theoretical Perspectives

The variability in health outcomes by race, ethnicity and migration status is a complex phenomenon that may be explained by theories on immigrant health. The most notable theories in the literature provide an ecological and anthropological understanding of how individual characteristics, physical environments, and social context influence health. The theories and models presented in this review include: a) the enclave theory, which considers neighborhood characteristics, b) cultural assimilation, which incorporates personal characteristics of migrants, c) the race and health model, which posits these variables as fundamental causes of health outcomes, and d) eco-social theory of embodiment, which considers the linkage between biological processes in response to the social context and physical features of environments.

Overview of Ethnicity, Nativity, Neighborhoods and Health

Theories about immigrant enclaves, assimilation processes, and social epidemiology pertaining to race and health, highlight distinct perspectives on immigrant health outcomes. Comprehensive conceptualization of the mechanisms that influence

specific populations requires understanding of how these perspectives build upon each other. Population differences have been attributed to modes of assimilation and engagement of social capital through ethnic networks and enclaves. A relatively small number of studies on the health of immigrants of African descent, particularly African Caribbeans exist. While generational decline in health and the role of social status in health have been documented from studies on Hispanic populations (Acevedo-Garcia, et al., 2010; Cho, Frisbie, Hummer & Rogers, 2004; Uretsky & Mathieson, 2007), more studies are needed on the experiences of African immigrants and successive generations. Exploration of the multiple variables that can explain health disparities among this population should consider the intersection of prevailing theories that focus on migration status, racial residential segregation, formation of ethnic enclaves, and geo-spatial measures of levels of interaction with other racial and ethnic groups.

Immigrant Health Paradox and selectivity

The “Hispanic/Latino Paradox,” (Markides & Coreil, 1986) is an epidemiological phenomenon that is counter to what is expected. Hispanic immigrants have been shown to have better health than non-Hispanic Whites and other racial and ethnic groups despite lower rating on socioeconomic measures (i.e. education and income). The most plausible theories suggest that living with co-ethnics in culturally concentrated neighborhoods have a salubrious effect independent of neighborhood material deprivation (Gould, Maden, Qin, & Chavez, 2003; Markides & Coreil, 1986). However, the epidemiological phenomenon and the associated explanatory theories are not supported when considering the lifecourse and health outcomes trajectory of immigrants of African descent.

Immigrant selectivity has been proposed as an explanation for the differences in health status between immigrants and native born Americans (Singh & Siahpush, 2002; Logan, Zhang, & Alba, 2002; Landale, Oropes, Llanes, & Gorman, 1999; Uretsky & Mathiesen, 2007). The immigrant selectivity or the “healthy migrant” hypothesis posits that immigrants are more likely to have better health because it is assumed that those who voluntarily immigrate are better equipped physically, economically, and socially. However, Abraido-Lanza, Dohrenwend, Ng-Mak, & Turner (1999) suggest that immigrant selectivity and culturally attached behaviors do not fully explain variations in rates of mortality among Latino groups when examined by country of origin as compared to their U.S. born counterparts. Findings on the health status of foreign born groups have been inconsistent and the authors conclude that the existence of the paradox varies by health measure. The immigrant selectivity hypothesis fails to explain intra-group differences in health status among U.S. born, European, and other immigrant groups that represent the diaspora. Compared to the other two groups, European Blacks have the worst self-reported health ratings. The hypothesis also fails to explain the generational decline in health among immigrants of African descent (Read & Emerson, 2005).

Assimilation and Acculturation

Linear assimilation posits that with increased years of residence in the United States, successive generations move along a pathway toward complete integration into the dominant society by adopting the values, beliefs, and practices of the host society as a means of gaining social mobility. This is one of the earliest attempts to explain immigrant health trajectories and assumes all immigrant groups will be able to assimilate in the same manner. Segmented assimilation more aptly accounts for population

differences (Alba & Nee, 1997; Rumbaut, 1997 in Landale, et al., 1999) as degrees of assimilation entail the selective adoption of norms and values while maintaining indigenous culture and ethnic solidarity (Alba & Nee, 1997). For example, immigrants can integrate and adopt behaviors in a manner that facilitates improved life chances while others may assimilate into less mobile or advantageous environment. Immigrants of African descent are more likely to assimilate into less supportive environments as compared to other racial and ethnic immigrant groups, referred to as the process of “downward assimilation” (Portes & Zhou, 1993; Frank, Cerda, & Rendon, 2007; Johnson & Marchi, 2009; Gans, 1992). The choices individuals make, or the social contexts that dictate these choices, have implications on their health (Hunt, Schneider & Comer, 2004).

The concept of spatial assimilation is an environmentally centered social theory that considers individual level attribute, structural characteristics of the environment, and proximity to resources as variables contributing to neighborhood effects on health. As Alba and Nee (1997) note, social research often measures the degree of successful assimilation by whether or not immigrants are residentially mobile and able to integrate into less ethnically concentrated neighborhoods, as opposed to measuring the success of assimilation by health outcomes (Alba & Nee, 1997; Landale, Oropesa & Gorman, 1999). Others view ethnic and racial concentration as an indicator of the degree of human capital present in the neighborhood (Alba & Nee, 1997; Massey and Denton, 1987, 1993). The underlying assumption is that environments influence the development of human capital, which in turn affects individual health status. The literature on immigrant health lacks empirical studies on effects of social and residential environments on the development of human capital.

A core assumption of assimilation models is the notion that immigrants will ultimately shed the cultural identity associated with their country of origin and adopt a new identity that aligns with the host country. Alternatively, acculturation may be a more accurate means of describing the process of adaptation to a new environment while maintaining aspects of the original cultural identity immigrants possess (Gilkes, 2007). Acculturation describes a balance between cultural identities or an integration of identities that immigrants create, particularly Black immigrants who may be deterred from assimilating fully into a racialized social and political context. Processes of integration and adaptation remain to be associated with some degree stress that impacts health (Finch, et al., 2001).

Ethnic Enclave

Immigrant enclave theory addresses the effects of neighborhood racial and ethnic concentration on health. Several studies indicate that enclaves may have positive associations with health outcomes by enhancing the social components of the environment (Fernandez, Kelly, & Schauflyer, 1996; Frank, Cerda & Rendon, 2007; Kuo & Tsai, 1986; Logan, Zhang, & Alba, 2002; Portes, 1998; Portes & Rumbaut, 2006; Osypuk, et al., 2009). Social networks provide pathways that establish individual level social capital and access to resources. Homogeneity of neighborhoods is perceived to counter the effects of discrimination from the majority population by serving as a resource for personal validation (Osypuk, 2009). Immigrant enclaves create social norms and control mechanisms that help establish order and common expectations. In contrast, enclaves may isolate immigrants and limit their assimilation into American society because enclaves nurture traditional values and norms.

Individual Level Markers for Health Status

The disparate rates of low birth weight between racial and ethnic groups have been attributed more to the effects of minority status than acculturation and adoption of an American lifestyle (Pallotto, Collins, Jr., & David, 2002). Blacks experience the effects of structural barriers associated with discrimination more than any other racial or ethnic group (Bobo & Zubrinsky, 1996; Farley et al., 1994; Iceland & Scopilliti, 2008; Portes & Zhou, 1993). Some authors have theorized that the psychosocial well-being of Black immigrants is further compromised by increased exposure to race-based discrimination in the U.S. that may not have been as prevalent in their country of origin. The shift in social position associated with being an ethnic minority in new surroundings may induce increased mental stress (Portes & Zhou, 1993; Read, 2005; Singh & Siahpush, 2002). Williams and colleagues (2007) examined the differences in prevalence of major depression disorder among African American, African Caribbean, and White populations and found that African Caribbeans, which includes a subpopulation of immigrants, have a higher prevalence of major depressive disorder than African Americans. However, both African Caribbeans and Whites were more likely to experience chronic depression without the benefit of treatment. Other studies that examined the influence of discrimination on health status among Hispanic immigrants found that the process of assimilation and increased years in the U.S. have a negative effect on health. Krieger and Sidney (1996) found that Blacks experience more frequent incidences of discrimination and unfair treatment than Whites and have higher blood pressures. In contrast to Blacks in professional occupations, non-professionals have

higher blood pressure associated with their lack of agency to remedy unfair treatment experienced in everyday life situations.

Immigration Generation Status and Health

Language acquisition and number of years an immigrant resides in the United States (proxies for measuring assimilation) have inconsistent effects on health behaviors and outcomes (Landale, Oropesa & Gorman, 2000; Wilson & Portes, 1980 in Dubowitz, et al., 2008). Wilson and Portes (1980) posit that language networks preserve cultural norms, particularly dietary practices while ethnic enclaves bolster economic and social capital and reinforcement of norms and behaviors (Dubowitz, et al., 2008). The inability to communicate limits access to vital resources such as health care in the dominant society. For example, among Hispanic immigrants, access to health care services have been facilitated by offering more products and services in the Spanish language; however, barriers remain for other immigrants, such as Haitians, as products and services in Creole are not widely available, except in enclaves.

Lesser degree of assimilation may prove to be beneficial to health. For example, immigrants spending less than 14 years in the U.S. are found to consume more fruits and vegetables than immigrants who have resided more than 15 years in the U.S. and U.S. born women (Dubowitz, et al., 2008). Immigrants with increased years of residence in the U.S. are found to be at greater risk for poor self-rated health and have increased number of sick days; third generation immigrants, particularly Black immigrants fare worse than their first generation counterparts, both in health and economic status (Acevedo-Garcia, et al., 2010; Cho, et al., 2004). Johnson & Marchi (2009) found that

English speaking Mexican women who reside in immigrant neighborhoods are at increased risk for poor birth outcomes. The lack of ability to speak the dominant language in the community, an indicator of assimilation, is found to function negatively on the ability to accrue the possible benefits of social capital within an immigrant enclave.

Based on Wilson and Portes' assertions, ethnic enclave lifestyle and selective assimilation may impart a health advantage (Eschbach, et al., 2004). Studies on spatial assimilation that looked at foreign and U.S. born Puerto Ricans and Mexican Americans living in less acculturated neighborhoods show that these ethnic groups have more favorable morbidity and mortality rates including infant health than their counterparts living in less ethnically concentric areas (Landale, Oropesa, Llanes & Gorman, 1999; Landale, Oropesa & Gorman, 2000). The authors suggest that a unique health advantage is experienced by Mexican Americans who reside closer to the Mexican border. The negative effects of living in a disadvantaged neighborhood can be countered by the strength of social networks and reinforcement of Mexican culture due to close proximity to other co-ethnics in the U.S. and Mexico (Landale, Oropesa, Llanes & Gorman, 1999). However, segmented and spatial assimilation explanations are not sufficient to account for generational differences in health and economic status (Landale, Oropesa, Llanes & Gorman, 1999; Finch, Lim, Perez & Do, 2007). Conclusions are limited because some aspects of the social networks were not closely examined. Furthermore, outcomes may vary based on age-related factors but the data only included individuals over the age of 65. Existing research has yet to confirm if younger immigrants discard traditional

cultural practices and assimilate to a greater degree than older immigrants or experience different processes of acculturation as residents in ethnically concentrated neighborhoods.

Neighborhood Level Markers for Health Status

Neighborhood classification

Neighborhood characteristics and location are argued to have a notable influence on the physical, social, mental, intellectual, environmental, spiritual, and economic well being and health status of inhabitants (Massey & Denton, 1993; Marcuse, 2003, 2005; Molina, Alegria & Chen, 2012; Williams, 2001). The classification of neighborhoods is based on subjective characterizations by the people residing in the neighborhood.

Neighborhoods where immigrants and racial and ethnic minorities live are associated with labels such as *ethnic enclaves*, *ghettos*, and *ethnic communities* that are not generally attached to predominantly White neighborhoods.

According to Portes & Rumbaut (2006), an ethnic enclave is an area of concentrated entrepreneurship. Immigrant enclaves are purported to have the benefit of providing access to capital, labor, and economic platform for business. The economic self-sustainability of a neighborhood is characteristic of an ethnic enclave. Osypuk and colleagues (2009) refer to an enclave as “neighborhoods with high proportions of immigrants” (p. 110), characterized by ethnic or cultural homogeneity. Waters & Eschbach (1995) have adopted similar descriptions that also include concentrated ethnic employment sector of businesses and workers. These definitions draw connections between place of residence and the ability to produce and sustain economic viability (Portes & Manning, 1986). Economic viability influences personal behaviors and

structural environments that contribute to the maintenance of health such as the ability to afford shelter, food, clothing and access to medical care. In addition, homogeneity and social familiarity fostered by enclaves, may contribute to the social and spiritual well-being through use of cultural practices that maybe health protective (Patel, et. al., 2003).

Marcuse (2003, 2005) describes neighborhood types by the subjective and objective features in relation to ethnic concentration and the negative psychosocial and economic effects. The contemporary understanding of a ghetto is that it is an area of spatial concentration imposed by the dominant society to separate and limit a particular population/group (racial, ethnic, or foreign) that is held to be and treated as inferior (p.17). In contrast, “an enclave is an area of spatial concentration in which members of a particular population group, self-identified by ethnicity, or religion, or otherwise, congregate as a means of protecting and enhancing their economic, social, political and/or cultural development” (p.17). In both types of neighborhood, ethnic concentration is central but, the social structural mechanisms by which these neighborhoods are formed or maintained create very different effects on health and well being of the population. Immigrant groups can be subjected to very different residential environments based upon social constructs, like race, and the values of the dominant society, thereby, influencing their distinct experiences and health outcomes.

Logan, Zhang & Alba (2002) differentiate an “immigrant enclave” from an “ethnic community” based on the characteristics of the physical environment, personal characteristics of residents, and resources (i.e. economic, human, or social capital). An “immigrant enclave” is a temporary point of entry for new immigrants with limited resources, serving as a social and economic base from which people benefit from the

pooling of resources as they seek to move on to more affluent residential areas. In contrast, an “ethnic community” is a neighborhood in which more affluent co-ethnics choose to concentrate (Logan, Zhang & Alba, 2002). The “immigrant enclave” represents an almost necessary stop for newcomers with limited resources, but bears a symbol of possible mobility, whereas an “ethnic community” represents the realization of aspirations for mobility secured by the power of selection. The contexts by which hypotheses are tested and neighborhood effects on health are interpreted depend on how the neighborhood is defined, either from a racial and ethnic composition, social, cultural, or economic frame of reference. Despite variations in the operationalization and conceptualization of ethnic enclaves, a common assumption of homogeneity exists. The connection between place of residence and health affects individuals and groups.

The term enclave is not generally associated with Black populations (Marcuse, 2005), as Black immigrants are less likely to live in enclaves, but rather in *ethnically concentrated* neighborhoods that border *ghetto* neighborhoods (Logan, Zhang & Alba, 2002; Portes & Zhou, 1993). The persistent adverse effects of segregation differentiate ethnically concentrated neighborhoods where populations of African descent reside and the ethnic enclaves of other racial and ethnic groups (Kramer & Houge, 2009). Freeman’s (2002) analysis of Black immigrant spatial patterns shows second generation West Indians and Haitians do not move closer to the dominant group like segmented assimilation theory would suggest, but in fact, they have less mobility and live in closer proximity to African Americans who have historically and systemically faced inequity in the United States (Portes & Zhou, 1993; Waters & Eschbach, 1995; Lew, 2004). In a study of residential patterns of African Caribbeans in New York City (Crowder, 1999)

important socioeconomic differences exist among African Caribbeans residing in a sub-neighborhood within a predominantly African American community. The average income of African Caribbeans was higher than African Americans and African Caribbeans lived in neighborhoods of more economic means. However, economic differences between West Indian and African American communities cannot be generalized to all urban areas or other neighborhoods where Black immigrants reside. These findings suggest that an ethnic enclave has access to better quality resources, perhaps contributing to some protective effects of neighborhood quality. In turn, neighborhood quality may contribute to better measures of health status among immigrant groups compared to native Black populations. However, the results of studies on immigrant health do not show a sustainable advantage that extends to successive generations (Schneider & Logan, 1982) because of their likelihood of exposure to materially disadvantaged neighborhoods.

The degree and manner by which people cope with environmental circumstances is critical for understanding how and why factors external to the human body become internalized. McEwen (2005) posits that in response to various stressors encountered, individuals engage biological responses to adapt to circumstances in order to achieve a level of mental and emotional equilibrium termed, “allostasis.” The process of achieving allostasis is considered a healthful response; however, chronic, over-engagement of these biological processes contributes to the deterioration of health, resulting in high “allostatic loads.” Allostatic load results in the “wear and tear” of the physical, mental and social well-being of individuals because of persistent elevated levels of stress hormones including catecholamines (i.e. adrenaline) and cortisol that predispose development of

chronic diseases as hypertension and cardiovascular disease, obesity and diabetes, decreased immune response and cancer, and ultimately death (Geronimus, 1996; Geronimus, Hicken, Keene & Bound, 2006; McEwen, 1998, 2005, 2012). Chronic and persistent elevation of stress hormones creates dysregulation rather than the healthy stress adaptive response. In fact, individuals with high allostatic loads are unable to respond to further stressors. Effects of stress hormones are mediated by the brain as well as directly affect the brain, particularly the prefrontal cortex, amygdala and hippocampus. These central nervous system organs regulate emotions, coping, learning, memory and decision making. Individuals with increased allostatic load suffer from insomnia, depression, posttraumatic stress disorder and engage in risky behaviors to cope with stress. These effects are found to imprint in memory so early trauma can trigger the same unhealthy coping behaviors in future. Failure to understand how exposure to stressors in the environment can trigger risky behaviors as smoking, drug and alcohol, and violence because of allostatic load effects, may lead to false perceptions that poor health is solely explained by unhealthy behaviors and choices. Allostatic load provides the explanation of how racial and ethnic social experiences and environmental exposures are fundamental causes of health outcomes (McEwen, 1998, 2005, 2012). According to Geronimus Hicken, Keene & Bound (2006) persistent social marginalization brings about exposure to repeated stress responses as illustrated in their study that finds allostatic load scores are highest among Blacks as compared to Whites, regardless of SES. They also find that the association between race and allostatic load is moderated by gender where Black women have higher allostatic load scores than Black men. The youngest age group in the study, 18-24, Black young adults had 1.49 times higher odds of having high allostatic load

scores than Whites. Non-poor Black women were two times more likely to have high allostatic load scores as compared to their counterparts and as women age, they are five times more likely to have elevated allostatic load scores.

The incidence and prevalence of all cause mortality, poor birth outcomes, and longevity of life have been associated with exposure to neighborhood stressors such as material deprivations and social pressures associated with racial and ethnic isolation (Edwards, 2004; Diez-Roux, 2003; House, Landis & Umberson, 1998; LaVeist, 2003). However, racial and ethnic clustering may provide opportunities to engage in social support with health protective effect (House, Landis & Umberson, 1998; Rowley, 2001). It is therefore imperative to develop integrative conceptual frameworks examining relationships between factors that enable the engagement and maintenance of protective practices that can mitigate contentious environments (Lu & Halfon, 2003).

Neighborhood ethnic composition and Health

Neighborhood ethnic composition, quality, and access to resources are vastly interrelated and central to the understanding of how and why individuals and communities are affected by the physical and social landscape (Williams, 1997; Bell, et al., 2006; Diez-Roux, 2003). Blacks who live in predominantly segregated neighborhoods are less likely to receive adequate health care (Haas, et al., 2008). Being racially isolated, where there is a decreased likelihood for someone of a particular race or ethnicity to have contact with someone of a different race or ethnicity, has a significant association with the likelihood of low birth weight infants among African Americans (Grady, 2006; Bell, et al., 2006). LaVeist (1989) has found evidence to support the

deleterious effect of residential segregation on infant mortality rates among Blacks.

Women, particularly non-U.S. born Black women had a reduced risk of pre-term birth when residing in less similarly racially and ethnically constituted neighborhoods (Mason, et al., 2011).

Neighborhoods with higher concentrations of foreign born populations have healthier food environments and residents have healthier eating habits, consuming more fruits and vegetables, compared to their counterparts residing in less concentrated co-ethnic neighborhoods (Osypuk et al., 2009; Dubowitz, et al., 2008; Patil, Hadley, & Nahayo, 2009). Residence in a concentrated Latino immigrant neighborhood appears to have influence on healthful eating patterns of immigrant and non-immigrant groups. In contrast, as the neighborhood concentration of Blacks increase, the individual daily consumption of fruits and vegetables decreases (Dubowitz et al., 2008). These behavioral differences are attributed partially to the overrepresentation of fast foods stores and the lack of supermarkets in predominantly Black neighborhoods (Kwate, Yau, Loh & Williams, 2009; Morland, Wing, Diez-Roux & Poole, 2002). However, uniform associations between residence in ethnically concentrated co-ethnic neighborhoods and health behaviors could not be determined. Studies, particularly among immigrant groups with regard to the association between ethnic composition and health behaviors and outcomes, are designed very differently utilizing varying target behaviors and socioeconomic circumstances, thus making it difficult to accrue a number of comparable studies that can yield firm conclusions. Behaviors, such as lower consumption of high fat foods, is evident among Hispanics and Chinese living in highly concentrated immigrant neighborhoods while the examination of physical activity reveals only Hispanic residents

receive less (Osypuk, et al., 2009). The reliance on acculturation and socioeconomic status as explanations for immigrant health trends neglect the full scope of environmental and social dynamics that may affect health status (Abraido-Lanza, Armbrister, Florez & Aguirre, 2006; Osypuk, 2009; Patil, Hadley, & Nahayo, 2009). Data related to ethnic concentration disaggregated by nativity are limited to Hispanic and Asian residents. Researchers comparing Hispanic and Asian immigrant groups with African Americans fail to disaggregate these groups as immigrants or non-immigrants, thus preventing appropriate comparisons.

In addition, enclave settlement patterns also illustrate variations between racial and ethnic groups. Frank, Cerda & Rendon (2007) find that foreign born youth are found to be more likely to reside in highly concentrated co-ethnic neighborhoods. For example, 50% of third generation youth live in highly concentrated co-ethnic neighborhoods. As Hispanic youth become more spatially dispersed over the course of successive generations, less healthful behaviors are apparent. Second and third generation Hispanic youth residing in co-ethnic concentrated neighborhoods, have increased likelihood of delinquency but a decreased likelihood of engaging in other risk behaviors, such as drug use. The authors also found a higher propensity for deleterious health behaviors in neighborhoods with higher than average concentrations of African Americans (Frank, Cerda & Rendon, 2007). Although concentrated co-ethnic neighborhoods with higher levels of collective efficacy have been associated with less likelihood for youth to engage in violence and substance use (Molina, Alegria, & Chen, 2012), other studies (Landale, Oropesa, Llanes & Gorman, 1999; Finch, Lim, Perez & Do, 2007) do not support the supposition that the proliferation of cultural protective practices in enclaves extends to

successive generations. Therefore, the immigrant enclave theory cannot be consistently applied when explaining the association between residence in ethnic enclaves and health trajectory.

Contrasting effects of residing in racially and ethnically segregated neighborhoods depend on the index of segregation used to define the spatial distribution of the population. Residence in ethnically concentrated neighborhoods, measured by the isolation index of segregation, is associated with lower risk of low birth weight (Grady, 2006; Ellen, 2000). Isolation implies an inability to access resources outside of the ethnic neighborhood. In contrast, studies using the clustering index of segregation found lower incidence of low birth weight in ethnically clustered neighborhoods (Bell, et al., 2006). Clustering promotes concentrated social support or political influence to create social, political, and physical environmental conditions conducive for health. Other studies have shown protective effects of predominantly Black neighborhoods manifested by lower mortality from heart disease and all cause mortality (Fang, Madhavan, Bosworth & Alderman, 1998; Inagami, et al., 2006; Kramer & Houge, 2009). Nevertheless, different methodological conceptualizations used to study the association between neighborhood composition and health has found differential health consequences.

Neighborhood quality and resources

Osypuk and colleagues (2009) find that area poverty rates are higher in communities that have higher concentration of foreign born residents. Hispanic neighborhoods had a mean neighborhood poverty rate of 21% compared to Chinese neighborhoods with a mean poverty rate of 13%. Areas where Black immigrants reside

was not included in this study but prior research support the notion that poverty rates in these areas would be significantly higher based upon racial differences. However, more studies are needed that specifically examine neighborhoods where immigrants of African descent reside.

Populations of African descent experience higher levels of residential segregation and often encounter poorer quality neighborhoods, less effective social networks, and fewer opportunities for upward mobility (Iceland & Scopilliti, 2008; Portes & Zhou, 1993). Morland, Wing, Diez-Roux & Poole (2002) in their study of a community in Mississippi, located in the southern region of the U.S., have found racial residential segregation and community neighborhood economic wealth were strongly associated with retail environment. White neighborhoods had four times more supermarkets than Black neighborhoods and poorer neighborhoods had three times more establishments where alcohol was served. The scarcity of resources exacerbated the economic gap because of the higher expense associated with accessing foods locally in Black neighborhoods or the expense and difficulty of traveling out of the neighborhood to access resources if given the option. Kwate, Yau, Loh, & Williams (2009) further explained that racial residential segregation creates a number of pathways that support a dearth of healthful food options in Black neighborhoods. The proliferation of convenience food outlets that are not health promoting in Black neighborhoods that already suffer from scarcity of food options are attributed to lack of strong zoning policies, economic opportunities and municipal tax base as well as political disempowerment. Furthermore, immigrants who reside in highly concentrated, lower income neighborhoods have higher levels of concern for safety, limited knowledge of and

access to recreational facilities or built environments conducive to physical activity (Waters & Eschbach, 1995; Osypuk, et al., 2009; Gordon-Larsen, Nelson, Page, & Popkin, 2006; Logan, Zhang & Alba, 2002). African Americans and immigrants who live in predominantly Black, segregated neighborhoods are less likely to receive adequate health care (Haas, et al., 2008). Finally, ethnic and racial density of neighborhoods are associated with health outcomes, such as the risk of pre-term births among Black immigrant women (Mason, et al., 2011).

Social capital and health

Differences in health outcomes among immigrant groups may be indicative of the degree to which more marginalized groups are able to build social capital (Kao, 2004; Portes & Zhou, 1993; Logan, Zhang & Alba, 2002). Reciprocal relationships between individuals and neighborhoods create purposive networks. The diffusion of shared values and norms depends on social capital. Norms adopted by communities may be health promoting or health deterring. Living among co-ethnics may provide a sense of cultural familiarity and validation (Carpiano, 2006; Portes & Rumbaut, 2006). In some regards, ethnicity is considered to be a form of social capital because of shared values, norms, and willingness to intercede on behalf of others indicating social cohesiveness of the neighborhood (Sampson, Raudenbush & Earls, 1997; Sampson, Squires & Zhou, 2001). Two conceptualizations of social capital are documented in the public health and social science literature. Robert Putnam (1993) described social capital as the positive effect accrued by individuals or communities derived from a combination of traits, such as trust, the existence of norms, community engagement, and functional social networks that

facilitate social organization and cohesion. By contrast, Pierre Bourdieu's (1986, 2002) definition of social capital emphasizes the utilitarian features of group coexistence as social capital includes the existence or acquisition of material resources by way of an individual's ability to connect with community networks and make effective use of communal resources. The extent of social capital individuals or neighborhoods possess depends on the extent of these networks. Similar to Bourdieu's emphasis on networks, Coleman (1988) highlights density of associations and mutual expectations of the individual and group for the good of the larger community by capitalizing on information pathways, social norms, and cooperative work. Social capital on one hand is dependent upon levels of social cohesion and on the other hand dependent upon the mobilization of social networks to access resources (Carpiano, 2006; Macinko & Starfield, 2001). Carpio (2006) further explains the connection between individual level and neighborhood characteristics and health status. Neighborhood perceptions have a direct influence on health behaviors, risk factors, and overall health outcomes. Concurrently, social cohesion, defined as connectedness and shared values, is facilitated by ethnic composition, SES, and length of residence in the neighborhood.

Mixed findings are noted from several studies that assessed the relationship between neighborhood concentration and various dimensions of social capital and health. For instance, Portes and Zhou (1993) suggest that the strength of social capital within a neighborhood depends on whether the community is strong. Strong co-ethnic communities are able to transfer social capital much faster than weaker communities, thereby, building a stronger platform by which successive generations may excel (Portes & Zhou, 1993; Waters & Eschbach, 1995; Lew, 2004). While the presence of ethnic

networks is important across groups, the degree of embeddedness within these strong networks is critical, particularly for vulnerable second generation youth (Lew, 2004). Homogeneous racial and ethnic communities may have difficulty in developing a broad based social capital that can effectively address economic and political disempowerment (Wilson, 1987). Other studies (Buka, Brennan, Rich-Edwards & Raudenbush, 2003) find that the influence of social support, a component of social capital, has different results on birth weight among White and African American mothers. The economic environment is a stronger predictor of adverse birth outcomes among African Americans, whereas, the degree of social support is a stronger predictor of favorable birth outcomes regardless of the level of neighborhood economic disadvantage. The findings suggest that social environments account more for disparities. However, social environments of African Americans are created through a different mechanism (i.e. racial residential segregation) that could possibly dilute the direct connection to health or the effectiveness of social support.

Social capital, specifically social support, has been shown to operate differently for U.S. born and foreign born populations. Rosenberg, Desai & Kan (2002) find that higher degrees of social support is related to decreased rates of low birth weight infants among foreign born Black women. The findings suggest that West Indian women have access to cultural practices that protect or support health such as a cultural emphasis on family ties, extended family support and less assimilation. Along with behavioral and psychosocial factors (i.e. greater sense of hopefulness, diet, and less stress) these advantages deteriorate over time with increased exposure to residential environments in the U.S. (Rumbaut & Weeks, 1996; Greenberg, 1998 in Rosenberg, Desai, & Kan, 2002).

As years of residence in the U.S. increase, immigrant groups may experience increased challenges from structural changes that cannot be overcome by the kinds of social networks that evolve.

In general, the economic status of a neighborhood seems to be more predictive of the acquisition of social capital. The formation of social cohesion and trust as a precursor for acquiring social capital is less apparent in ethnically concentrated immigrant neighborhoods (Mulvaney, Alegria, & Scribney, 2007; Patel et al., 2003; Almeida, Kawachi, Molnar & Subramanian, 2009; Osypuk et al., 2009). However, Almeida, Kawachi, Molnar & Subramanian (2009) find that enclaves increase social ties, which is a different measure related to social capital. Differences in the development of social capital depend on the dimension of social capital studied. Putnam (1993) contends individuals and communities without social cohesion lack the necessary social capital to promote health and well being.

Bourdieu's (1986, 2002) conceptualization of social capital addresses another aspect of the benefits presented in enclave theory that emphasizes access to and activation of networks to gain resources. Intra-group dissonance, which is a byproduct of closely controlled ethnic enclaves, may hinder the ability of individuals to partake of the social capital network to promote health (Portes & Rumbaut, 2006; Carpiano, 2006). Johnson & Marchi (2009) attribute the increased risk of poor perinatal outcomes among Mexican women to social dissonance and their inability to take advantage of social networks within the immigrant community.

Summary of Literature

The review of the literature reveals mixed conclusions as to the direction of associations between individual characteristics, neighborhood environment, and health because these relationships appear to differ according to how variables were operationalized. Although studies have addressed differences in health status according to neighborhood concentration of immigrants, Blacks, and poverty, the degree of social cohesion among residents, and generational status among immigrant populations, this study offers a finer grained analysis of the abovementioned dimensions while illuminating the social and historical contexts in which physical and mental health status is shaped. For example, little is revealed about the role of immigrant status and the mechanisms that facilitate or hinder the proliferation of neighborhood retail options and access to resources as these may function differently across racial and ethnic groups. Also, few studies have examined which characteristics of the environment are more important to health than others and if these characteristics have different significance across groups. Few empirical quantitative studies specifically examined possible effects of residing in a predominantly Black immigrant neighborhood. Of the three studies specifically focused on Black immigrants and the protective factors associated with immigrant status and lower incidence in low birth weight, (Fang, Madhavan, Bosworth, & Alderman, 1998, Inagami, et al., 2006; Kramer & Houge, 2009) only one study disaggregated the population by country of origin. The studies that corroborated the similar pattern of generational decline in self rated physical and mental health in Black and in Hispanic populations did not consider the effect of living in an ethnic enclave (Acevedo-Garcia, et al., 2010; Williams, et al., 2007). Overall, four studies, non specific

to immigrant populations, found associations between residence in ethnically concentrated neighborhoods and positive health effects (Bell, et al., 2006; LaVeist, 2003, 2011; Rowley, 2009). For the Hispanic population, one study observed concentrated immigrant neighborhoods were positively associated with social ties, but negatively associated with social cohesion (Almeida, Kawachi, Molnar, & Subramanian, 2009). Another study observed that relationships differed between Hispanics who appeared to be more assimilated into the U.S. by way of language acquisition as an English speaker and those considered to be less assimilated particularly among immigrants within immigrant enclaves (Johnson & Marchi, 2009). One study found neighborhood racial composition, specifically living in a concentrated Black neighborhood had a positive effect on the incidence of low birth weight when measuring residential segregation using the clustering index but no association was demonstrated when the isolation index was used (Bell, et al., 2004). Two other studies found lower mortality among older Black adults who resided in ethnically concentrated neighborhoods (LaVeist, 2003, 2011).

Chapter 4

Conceptual Framework

A review of the literature demonstrates that U.S. born and immigrant populations of African descent in the U.S. are more likely to experience adverse effects from living in ethnically concentrated or segregated neighborhoods compared to other U.S. and non-U.S. born racial and ethnic groups. The reason for this disparity is not fully understood, however, the effect of stress on physical and mental health as a result of exposure to discrimination or socially non-supportive living environments may have a more prominent influence than even socioeconomic status or class. Length of exposure to a racially stratified society is another point of view by which disparities may be explained and whether exposure time moderates group differences. The examination of health disparities from a social determinants perspective acknowledges that multiple factors such as ethnicity, race, and immigrant status work simultaneously towards the social contexts, rather than independent and distinct factor. In this way, individual level and structural dynamics influence group differences. An accumulation of perceptions and exposures along the life-course translate into biological responses and outcomes. Therefore, this study assumes a relationship between individual characteristics, perceived neighborhood environment, and self-reported health status.

The basis for group differences may also be viewed from an existential perspective. The “social construction of reality” (Bergen & Luckmann, 1966) explains the formation and modification of concepts related to individual identities, neighborhood social environments, and well-being. Through a process of internalization, experiences and exposures to social dynamics of the environment become embodied and contribute to

the formation of perceptions that become a lived reality (Berger & Luckmann, 1966).

For example, features of the neighborhood environment such as the degree of neighborhood safety, social support, or adequate access to resources shape perceptions of self and the possibility of personal adaptation to physical and social surroundings.

Individual identities, including stereotypes of racial and ethnic groups, such as stereotypes about Black people, are also posited to be internalized, thus activating a series of mental and physiological processes that affect health (Kwate & Meyer, 2011).

Immigrant groups who are Black are also subject to stereotypes that are equally damaging. Internalization also occurs when symbolic meaning is assigned to an institution based upon the nature of personal experiences individuals have had with an institution. Drawing from the constructs of Berger and Luckmann, the proposed study posits that individual members of different groups in the same social context may have contrasting experiences that result in self-affirmation and acceptance or marginalization and oppression. Thus, health measures such as self-rated physical and mental health are socially defined and rooted in subjective realities such as perceived neighborhood environment.

Figure 1 illustrates a framework that conceptualizes the relationships between individual characteristics, neighborhood environment, and health outcomes as presented in the literature. This framework specifically illustrates the relationship between constructs unique to this study; and draws upon a compilation of theories and frameworks conceptualized by Bell et al. (2006), Berkman, Glass, Brissette & Seeman (2000), Carpiano (2005), Gee & Payne-Sturges (2004), and Williams (1997) which depict the multi-level effect of structural inequality and place stratification.

The framework has been informed by studies that explored the social construction of identity, the effects of allostatic load on human behavior and psychological and physiological processes, and the influence of social and physical environments on health and well-being. The premise for understanding the reciprocal relationship between macro-level and micro-level factors is grounded in the “stress exposure disease” paradigm originated by Sexton, Olden & Johnson (1993). Biological processes at the individual level are closely associated with neighborhood level social processes. Social position, an assessment of individual status based upon individual characteristics, influences the type of neighborhood conditions one is exposed (Alwin & Wray, 2005; Krieger, 2011). Since the development of the stress-exposure disease paradigm, several authors have validated the significance of social and physical environments in understanding health disparities (Krieger, 1990, 1996, 2001, 2012; Gee & Payne-Sturges, 2004).

Among the individual characteristics presented in Figure 1, *ethnicity*, in conjunction with race, is posited as a fundamental cause of health outcomes in the U.S. because these are determinants of residential quality, socioeconomic opportunities and sociopolitical power (Williams, 1997; Williams & Collins, 2001; Williams et al., 2007). *Nativity* is an individual characteristic that has been at the center of much political debate. The discourse on immigrant status is not merely a matter of whether someone is U.S. born or not; but, the symbolic meaning attached to an immigrant’s respective country of origin or ethnicity has bearing on the types of stereotypes and ideologies from which that immigrant group is critiqued, allowed access to certain neighborhoods and medical care, or subjected to excessive scrutiny and punitive legal action. A stratified social structure

that hinges on identities promotes differential treatment of groups; fosters social pressures that lead to increased self-vigilance and protectiveness; and impacts neighborhood social capital, degree of *social cohesion* and mutual trust (Annabinder, 2001; Kafalas, 2003; Putnam, 2007). Social inequities increase individual vulnerability to various forms of interpersonal as well as institutionalized *discrimination*. The ability to trust and rely on others and the institutions that are expected to be equally supportive of groups is important to overall well-being.

Interpersonal relationships with family members and friends are typically the primary source for physical, social, emotional, and economic support; however, neighborhoods and their members, are often considered to be among the secondary influences that shape individual behaviors, perceptions, physical, social, emotional, and economic circumstances. The conceptual framework posits that exposure to the neighborhood environment, as measured by *years in the neighborhood*, influences exposure to physical and social features of neighborhoods such as elements of disorder (*drug activity, crime, safety*). *Ethnic or racial composition of the neighborhood* that may be a result of systematic segregation or voluntary segregation, shares multiple associations with features of the neighborhood environment. The *presence of resources* (recreational, financial institutions, places of learning, medical care, and public safety) may be reflective of the degree of social investment or disinvestment in the neighborhood, which are influenced by the resident population. Overall *satisfaction with the neighborhood* environment depends on aspects of individual characteristics, such as experiences with residence-based discrimination, comparative views of neighborhoods in the U.S. compared to those of the native country of immigrants, length of residence (may

be voluntarily determined or due to lack of other options), or desire to reside near co-ethnic groups.

Exposure to the U.S. social, economic, and political contexts, as measured by *age of migration* and *years in the U.S.*, may also influence exposure to physical and social features of the neighborhood environment by immigrant groups that may differ from U.S. born individuals. In addition, the perceptions and interactions between immigrants and others, and between immigrants and the neighborhood environment were put forth as factors associated with health status.

Living under a state of chronic material deprivation and disempowerment may bring about a type of stress-induced ecological competition among racial and ethnic groups residing in segregated neighborhoods. Although, stress or allostatic load is not included in the conceptual framework because the measurement of this construct falls outside the scope of the present study and is one of the limitations of the NSAL dataset, stress is a mechanism that is discussed in the literature that has a direct effect on both physical and mental health status. Interpersonal and institutionalized proxies for stressors such as discrimination, neighborhood quality, and years of exposure to stressors of the social environment are posited to have an adverse association with health status or outcomes.

Neighborhood attributes influence a sequence of behavioral and biological events that shape the manner by which individuals cope with and interact with their environment (Berkman, et al., 2000; Gee and Payne-Sturges, 2004; McEwen, 2000. Geronimus (1996) has identified the “weathering effect” -a psychological and biological deterioration of health caused by exposure to chronic stressors such as social

marginalization (Geronimus, Hicken, Keene, & Bound, 2006). More recent studies (Karatsoreos & McEwen, 2011; McEwen, 1998, 2005, 2012) have identified the phenomenon of “allostatic load” that is a result of the “wear and tear” on the body from exposure to cumulative stressors from social and physical environments. Allostatic load is the consequence of persistent elevated stress hormones that comes from prolonged, unmitigated stress exposure. Stress hormones such as cortisol and catecholamines remain elevated causing dysregulation of the body and rendering the individual unable to cope with further stressors. The effects of allostatic load that are derived from psychosocial stressors such as chronic exposure to perceived discrimination, are mediated by the brain and the autonomic nervous system, which contribute to the development of hypertension, cardiovascular diseases, obesity, diabetes mellitus and decreased immune response such as cancer (Eisenberger, Lieberman & Williams, 2003; Hoyt D’Anna, Ponce & Siegel, 2010; Krieger, 1990; Krieger & Sidney, 1996; Williams, Neighbors, & Jackson, 2003). In other words, these constitute the chronic diseases that have been prevalent among disadvantaged groups.

Allostatic load affects the brain particularly the prefrontal cortex, amygdala and hippocampus which comprise the major organs responsible for controlling decision making, risky behaviors, negative emotions and stress coping. Being “stressed out” (McEwen, 2005) has a direct causal effect on sleep patterns, memory and learning. Effects on the brain are manifested in insomnia, aggression, violence, Post Traumatic Stress Disorder (PTSD) and health risk behaviors such as smoking and drug use. All of these conditions may play a part in someone’s overall assessment of their own health status whether a formal diagnosis is accompanied by these experiences or not. Although

the focus of this study is not to measure specific mental or physical co-morbidities, the goal is to understand the association between overall self-rated physical and mental health and individual and neighborhood attributes, while taking into consideration the presence of any other possible chronic physical or mental health co-morbidities.

According to Krieger (2001), within the context of the life-course, biological outcomes are intertwined with environmental and social exposures, and historical experiences. In other words, people embody their environment biologically, psychologically and socially. Cultural protective practices may change, rendered useless or are lost, as populations especially immigrants, encounter the physical and social realities of their new environment. Incorporating the life-course perspective allows the exploration of varied dimensions of life, such as work, migratory experiences, and other exposures that can yield a more complete view of cumulative risks and other factors that moderate the relationship between individual identities and characteristics, residential spaces, and health (Eisenberger, Lieberman & Williams, 2003; Finch, Hummer, Kol & Vega, 2001; Link & Phelan, 1995). Circumstances, such as these may provide some explanatory basis for the relationships that this study expects to find.

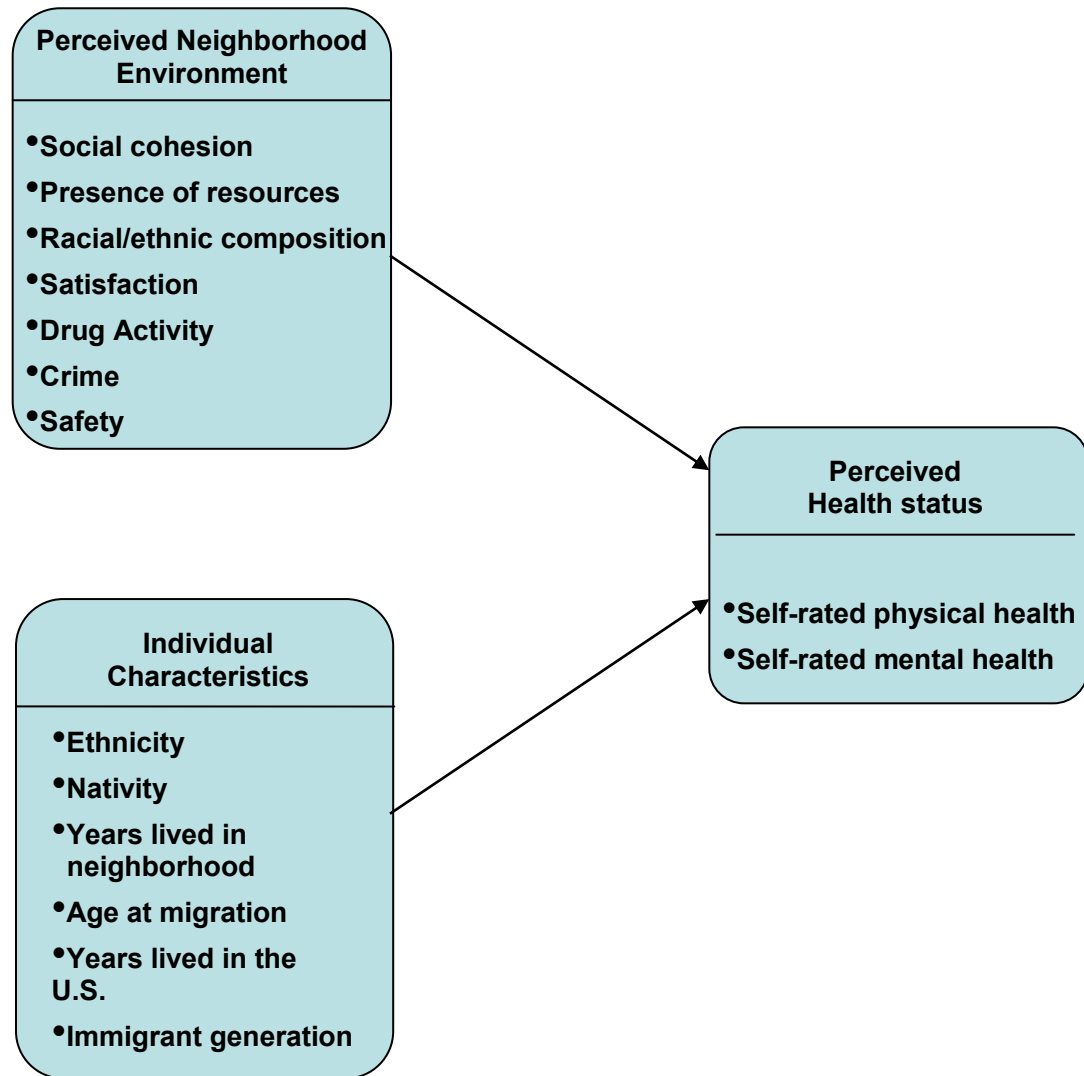


Figure 1
Analytical framework for the study of the relationship between individual characteristics, perceived neighborhood environment and self reported health status

Chapter 5

Method

One of the most significant limitations of immigrant health studies is the reliance upon national datasets that do not include a representative sample of the Black population by sub-ethnic group or country/region of origin. In addition, studies are limited in their quantification of environmental exposure and social and physical barriers such as access to services, economic constraints (i.e. insurance), and strength of social networks and agency which could account for group differences in health (Hunt, et al., 2004).

The proposed study examined the complex association between nativity, ethnicity, and perceived features of the neighborhood environment in relation to self-rated physical and mental health status among African American and African Caribbean, U.S. born and immigrant, populations. The extant literature on immigrants of African descent and their succeeding generations is limited due to small sample sizes in existing datasets and the absence of data on subjective neighborhood assessments. The study attempted to examine this issue by merging theories that have previously explored race, ethnicity, nativity, and neighborhood environment as independent variables, but not simultaneously in one study. The major premise that guided this study was that neighborhood features and stressors associated with racial prejudice and discrimination were influential factors that may have provided more plausible explanations for mechanisms that influence health outcome trajectories differently for immigrants of African descent. This study specifically considered previous experiences with perceived residential based discrimination and the association with perceived health status. The decline in health status across successive generations cannot be solely attributed to a

persons' degree of acculturation but also to the degree of exposure to chronic economic immobility, generational influences, and institutionalized barriers (Logan, Zhang, & Alba, 2002; Portes & Rumbaut, 2006; Frank & Rendon, 2002, Williams, 1997). This study reflected on the historical underpinnings that illustrated the dynamics of economic mobility of African Americans and African Caribbean immigrants in the U.S. and analyzed the relationship between immigrant generation and neighborhood features as well as health status.

The present study extended the findings in the literature by examining self-rated physical and mental health in a representative sample of U.S. and non-U.S. born adults of African descent as it related to perceived features of the neighborhoods in which they lived. Furthermore, this study addressed a gap in the literature pertaining to the health of immigrants of African descent in the U.S. The study added strength to the value of self-reports of health status by inclusion of less studied variables at the individual and neighborhood level. Finally, this study emphasized how populations residing in similar racially constituted neighborhoods may have different neighborhood exposures and perceptions that influence their health status.

Rationale for study

Many studies have been narrow in scope by examining only differences in individual health behaviors as a means for explaining the immigrant health advantage. According to Sampson (2003) the social context of communities is not merely an added trait of individuals situated in these communities but exerts an independent effect on their lives. Prior research purports concepts such as neighborhood collective efficacy may

mitigate socioeconomic disadvantages. Both Berger and Luckmann and Sampson have emphasized the importance of subjective perceptions, more specifically of neighborhood, by residents as an index of the dynamic processes that may not be captured by objective measures of income, occupation and education. Additionally, social position may not be fully captured by these objective measures. In theory, individuals' perceptions of the neighborhood environment are influenced by their demographic characteristics such as race, ethnicity, nativity, generational status, and length of exposure to the neighborhood. Therefore, this study ventured to examine these potential relationships.

The present study had two objectives with specific research questions for each objective and used secondary data analysis to address research questions and hypotheses. The NSAL included other ethnic groups (i.e. White) that could provide a comparison with African Americans residing in similarly racially constituted neighborhoods (composed of 10% or more African American residents), this study only focused on the intra-racial group differences that may exist between people of African descent with different ethnic backgrounds and nativity status.

Objective 1. Describe population differences in subjective assessments of neighborhood environment and self-rated physical and mental health status among African American and African Caribbean respondents residing in similar racially constituted neighborhoods.

Research Questions:

1.1. What are the differences between African American and African Caribbean populations regarding a) self-rated physical and mental health status, and b) perceived neighborhood environment?

1.2. Is there a relationship between a) perceived neighborhood environment and self-rated physical and mental health status, b) length of residence in the neighborhood and self-rated physical and mental health status, and c) experience with discrimination and self-rated physical and mental health status?

1.3. Is there a relationship between nativity and self-rated physical and mental health? If so, is the relationship moderated by a) length of residence in the neighborhood, and b) perceived neighborhood environment?

Objective 2. Analyze differences in subjective assessments of neighborhood environment and self-rated physical and mental health status among African Caribbean immigrants by a) age of migration, b) generational status, and c) number of years lived in the U.S.

Research Question:

2.1. Is there a relationship between age of migration, immigrant generation, or number of years lived in the U.S. and a) perceived neighborhood environment, and b) self-rated physical and mental health among African Caribbean immigrants?

Data Source

Data were extracted from the 2001-2003 National Survey of American Life (NSAL), a cross-sectional, population based sample survey of non-institutionalized adults of the United States, with particular emphasis on populations of African descent. The core sample of respondents was drawn from geographical areas, including urban areas, where large populations of people of African descent resided. The first phase consisted of

face-to-face interviews with 6,082 adults age 18 years and older. Of the total number of participants, 3,570 were African Americans, 891 were non-Hispanic Whites, and 1,621 were of African Caribbean descent. Approximately sixty-two percent (62.4%) of respondents were female and 37.5% were male; 79.2% were born in the U.S.; the average age of respondents was 43.2 years; 55.8% were residing in the southern region of the U.S., 27.2% in the northeast, 11.3% in the mid-west, and 6.7% in the west. Of the 1,621 Black respondents of Caribbean descent, 31.9% were Jamaican, 18.6% Haitian, 10.6% Trinidadian and Tobagonian, 11.3% Spanish Caribbean, and 27.5% from other Caribbean countries. The large percentage of participants who were residing in the southern region of the U.S. reflected the region where approximately 50% of the African American population resided (Alegria, Jackson, Kessler & Takeuchi, 2003). The response rates for the in-person interviews were 70.7% for African Americans and 77.7% for African Caribbeans (Williams, et al., 2007). Ten percent of the adult sample population underwent an additional interview to assess concordance between psychological diagnostic tools (Jackson, et al., 2003). The second phase of the NSAL consisted of a mailed, self-administered questionnaire (NSAL-SAQ). Approximately, half of the total NSAL respondents (n=3,438) completed the mail survey with the following response rates: 68% for Whites, 60% for African Americans, and 43% for African Caribbean (Alegria, Jackson, Kessler & Takeuchi, 2003).

The Survey Research Center 1990 National Sample of U.S. Households served as a foundation for the sampling frame of the NSAL. The sampling frame for the NSAL was derived from a four-stage national probability sample with a supplemental sample added to the core sample to allow for a larger sample size of African Caribbean adults.

The supplemental sample criteria required census blocks to have greater than 10% African Caribbean population, also based on 1990 Census.

http://www.icpsr.umich.edu/icpsrweb/CPES/about_cpes/sample_design.jsp. The four-stage sampling process involved the procurement of sample from the Metropolitan Statistical Area (MSA) and county level, then from smaller geographic area segments (geographically contiguous census blocks stratified by race and ethnicity), then from households within the area segment, and finally a randomly selected individual among eligible adults within the household. The racial and ethnic stratification of area segments allowed for oversampling of areas with higher densities of African Caribbeans and other targeted racial and ethnic groups. Of the 26, 495 households with eligible adults, 6,199 interviews of eligible participants were conducted. The overall response rate was 72% (Alegria, Jackson, Kessler & Takeuchi, 2003, p.4-5).

The national survey was weighted based upon race, ethnicity and geographic area. Each respondent was assigned to a race/ancestry category. Respondents were assigned to geographical domains based upon the racial and ethnic proportion of the respective group within the census block. NSAL weighted sample distributions were used to apportion the African-American and African Caribbean populations to the geographic domains. Census block groups with greater than 10% Caribbean (non-Hispanic) population were restricted to the following states: New York, New Jersey, Florida, Connecticut, Massachusetts, Rhode Island, and Washington, D.C. The sample weight was also adjusted for non-responses and the oversampling procedure for African Caribbean population (Alegria, Jackson, Kessler & Takeuchi, 2003; Heeringa, et al., 2004). The

weighted estimates are representative of African American and African Caribbean adults in the U.S.

The NSAL was one of three studies of the Collaborative Psychiatric Epidemiological Surveys (Pennell, et al., 2004). Additional information about the NSAL and NSAL-SAQ can be accessed <http://www.icpsr.umich.edu/icpsrweb/CPES/files/nsal> and <http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/27121/version/1>. Unless specifically noted, NSAL referred to both the face-to-face interview and self-administered questionnaire components of the study. Table 1 summarizes the characteristics of the adult population included in the NSAL.

Unlike previous national surveys, the NSAL collected data on perceived neighborhood social environment (cohesion, crime, drug activity, and safety), racial composition, satisfaction, access to neighborhood resources, and experiences with residential based discrimination. The specialized sampling process ensured representativeness of the African Caribbean population, which enabled an examination of intergenerational differences and experiences of African Caribbean immigrants and successive generations. As previously mentioned, few national datasets provide sufficient sample sizes of foreign born Black populations (Elo, Mehta, & Huang, 2008), specifically the less-studied African Caribbean population.

Table 1
Descriptive Statistics for Total NSAL, 2001-2003 (N=6082)

	Percent (%)	Frequency (N)
Race/Ethnicity		
African Caribbean	23.6	1438
African American	58.7	3570
Non-Hispanic White	14.6	891
Age (years)		
18-24	13.5	819
25-44	44.7	2719

	Percent (%)	Frequency (N)
45-64	29.2	1774
65+	12.6	770
Gender		
Female		
Male	37.6	2286
Nativity		
U.S. born	79.0	4759
Non-U.S. born	20.9	1259
Non-U.S. born by race/ethnicity		
African Caribbean	73.9	1050
African American	1.8	64
Non-Hispanic White	3.3	29

Note: N= 6082 based upon the number of participants who responded to both the NSAL main survey. Mean age is 43.2 years

Analytic Sample

The sample for the present study was comprised of 2,073 African American and 678 African Caribbean adults who participated in both the main NSAL face-to-face interview and the self-administered questionnaire (n=2827). Approximately 68% of the African Caribbean sample included immigrants. Key questions pertaining to perceived neighborhood environment were a part of the SAQ, while other pertinent questions related to socio-demographic characteristics and the presence of co-morbidities was included in the main NSAL survey, therefore, it was necessary to merge both datasets and extract those adults who responded to both portions of the NSAL.

According to the NSAL description, “African Americans” were defined as persons who self-identified as Black but did not report Caribbean ancestry. Although this definition may include African immigrants from countries other than Caribbean areas, the possible percentage is very small. As previously mentioned, immigrants from the continent of Africa, for example, represent a small percentage of Black immigrants in the U.S. compared to the largest group, Caribbeans. The NSAL refers to the Caribbean sample as “Afro-Caribbean”. For the purposes of this study, the term, “African

Caribbean”, was used as it was more reflective of contemporary language used to refer to this group, as well as the ancestral and cultural origins. African Caribbeans were defined as persons who self-identified as Black and answered affirmatively to any of these inclusion criteria: (1) were of West Indian or Caribbean descent, (2) originated from a Caribbean-area country, or (3) had parents or grandparents born in a Caribbean-area country.

An additional useful feature of the NSAL is that it allows for the disaggregation of the non-U.S. born African Caribbean population by generational status of country of origin, and language spoken (English or French speaking).. Attributes of the dataset, such as these, brings to light heterogeneity within the Caribbean population as a means for additional analysis. The analytical sample was not disaggregated by language spoken; however, language and sub-ethnic group differences may be an important aspect in the discussion of possible explanatory factors and position within the racial/ethnic hierarchy.

As previously mentioned, neighborhood environment and the perception of environments is hypothesized to have a significant influence on how one perceives their overall health and well being. The present study relies upon the definition of “neighborhood” as inferred by the sampling procedure employed by the NSAL. NSAL participants were selected from census tracts or blocks that had a minimum of 10% or greater African American or African Caribbean composition. Ideally, locally defined neighborhoods with either natural boundaries, or boundaries, which are uniformly conceptualized by residents, would be the preferred manner by which to define neighborhoods, however, the present study was restricted by limitations typical of national datasets, which define neighborhoods at larger geographic scales (i.e. census

tracts or county level). In addition, geographic identifiers and data publishing restrictions did not allow for NSAL participants to be linked to geographic data in the U.S. Census. In spite of these limitations, reliance on census tracts, as used by the NSAL, is consistent with other national studies as the proxy for identifying neighborhoods (Sampson, Raudenbush, & Earls, 1997).

Operational Definitions of Key Variables

This study examined differences in two health outcome measures: a) self-rated physical health and b) self-rated mental health. Key dependent and independent variables were grouped into larger constructs to demonstrate conceptual and analytical associations (Table 2). The key dependent variable, self-reported health status, included self-rated physical and mental health. The first set of key independent variables were comprised of individual characteristics, which included ethnicity, nativity, years lived in the neighborhood, immigrant generation status, age at immigration, years lived in the U.S., and experience with residential based discrimination. The second set of key independent variables were considered to be part of the perceived neighborhood environment, which included the degree of social cohesion, presence of institutional resources, neighborhood racial composition, the degree of neighborhood satisfaction, drug activity, crime, and safety.

Self-rated physical and mental health was classified into two categories, 1) excellent, very good, or good, or 2) fair or poor. *Ethnicity* referred to respondents who self-identified as African American or African Caribbean. African Caribbean ethnicity was determined by way of self-identification and/or adult respondents having been born in a Caribbean country or having had a parent or grandparent who was born in a

Caribbean country. Although race was not among the key independent variables, both groups were classified as Black. For the purposes of discussion that involved race, race was limited to two categories, Black (African American or Caribbean) or White (non-Hispanic). *Nativity* referred to respondents who were U.S. born or non-U.S. born. Table 2 and 3 provides a summary of dependent, independent, and control variables for each objective. *Perceived neighborhood environment* was based on NSAL selected “area segments” which consisted of census blocks and tracts where the population was at least 10% African American (Black) or at least 10% African Caribbean when the researchers constructed the parameters used for oversampling the African Caribbean population.

Dependent Variables

Perceived health status

This study employed two measures of self-reported health status, self-rated physical health and self-rated mental health. Each of these measures provided an overall assessment of the respondent’s current health status. Self-rated physical health and mental health are commonly used proxies for health status. Self-rated health has been shown to be a valid measure in establishing associations with various individual level and neighborhood level characteristics (White & Borrell, 2006; Browning & Cagney, 2002), correlation with mortality (Idler & Benyamini, 1997), and predictive association with chronic illness, disability, and health service utilization (Goldstein, Siegel, & Boyer, 1984). Since previous studies have shown self-rated physical and mental health to be correlated with one another (Schnittker, 2005), the analyses to test for associations with other independent variables was conducted separately for each health measure to reveal if various dimensions of health were affected differently. Because perceived health status

may be influenced by the presence of chronic physical and mental health co-morbidities, these were controlled in the data analyses.

Self-rated physical health: Respondents were asked, “How would you rate your overall physical health?” Self-rated physical health was initially measured using five categories for “excellent,” “very good,” “good,” “fair,” and “poor”. Because of the potential for small cell sizes and lack of substantive differences in meaning, these categories were transformed into dichotomous indicators. Respondents who answered “excellent,” “very good,” or “good” were included in one category that was reflective of positive health status. Respondents who answered “poor or fair” were included in a second category that was reflective of negative health status.

Self-rated mental health: Respondents were asked, “How would you rate your overall mental health?” Self-rated mental health was initially measured using five categories for “excellent,” “very good,” “good,” “fair,” and “poor”. Because of the potential for small cell sizes and lack of substantive differences in meaning, these categories were collapsed into dichotomous indicators, “excellent, very good, good” and “poor/fair.” Respondents who answered “excellent,” “very good,” or “good” were included in one category that was reflective of positive health status. Respondents who answered “excellent,” “very good,” or “good” included in one category that is reflective of positive health status. Respondents who answered “poor or fair” were included in a second category that is reflective of negative health status. The use of dichotomized indicators for self-rated physical and mental health is consistent with the work of other researchers and allows for comparisons with other studies.

Independent Variables

All independent variables were hypothesized to influence perceptions of neighborhood environment and self-rated physical and mental health.

Individual characteristics

Individual characteristics included seven measures: ethnicity, nativity, and number of years lived in the current neighborhood, immigrant generation, age at migration, number of years lived in the U.S., and experience with residential based discrimination.

Ethnicity: Ethnicity referred to the self-reported cultural identity or ancestry as African American or African Caribbean. A detailed description of Caribbean classification is discussed in the description of the study sample. A single survey item asked respondents to self identify as West Indian or Caribbean. Supplemental information about country of birth or birthplace of parents and grandparents was used to further classify respondents as being of Caribbean ancestry.

Nativity: A single survey item asked, “Where were you born? What country?” Nativity is further classified as, “United States or outside the United States.”

Length of residence (years lived) in the neighborhood: Schulz, et al., (2006) found varied associations between length of residence and health with many studies utilizing five years as a cut-point for measuring residential stability. Residential stability may have more of a protective benefit to mental health status for those who reside in more economically advantaged neighborhoods; however, at the individual level, there remains a strong association between length of residence in a neighborhood and physical and mental health. Schulz and colleagues pointed out that length of residence could be a

reflection of desire or lack of opportunity to move. In addition, level of neighborhood satisfaction could partially explain the relationship. The NSAL asked participants to indicate the number of months lived in the neighborhood. For this study, responses were then recoded to represent the number of years and then classified into groups.

Immigrant Status

Variables specific to the immigrant population within the sample included three measures: 1) age at immigration, length of residence (number of years) lived in the U.S., and generational status as determined by the country of birth of parents and grandparents of respondents.

Age at Immigration: Measures of health have been shown to be moderated by the age at which one emigrated to the U.S. Immigrants who arrive in the U.S. at older ages may have less opportunity to secure social networks as compared to younger immigrants. In addition, well-being declines as African Caribbean immigrants age in the U.S., particularly among middle-age and older adults (Jackson, Forsythe-Brown & Govi, 2007). Particularly relevant to individuals who emigrated at younger ages, other studies posit that the age of immigration may be indicative of the degree of assimilation or loose connections with traditional cultural ties. Consequently immigrant children may adopt lifestyles, norms, values, that are similar to their U.S. born counterparts (White & Glick, 2000). A single survey item asks, “age at immigration?” Ages were subsequently categorized into groups.

Length of residence (years lived) in U.S.: Within the immigrant health literature, the number of years lived in the U.S. is often used as a measure of assimilation. The degree of assimilation is associated with immigrant decline in health. However, length of

residence varies for younger and older immigrants. A single survey item asks respondents, “the number of years lived in the U.S?” The number of years lived in the U.S. were categorized into groups.

Generational status: First, second, or third generation Caribbean ancestry was obtained from survey questions that asked about maternal and paternal lineage. First generation represented Caribbean respondents who were born outside the U.S., second generation were Caribbean respondents with at least one parent born outside the U.S., and third generation were Caribbean respondents with both parents born in the U.S. A series of survey questions asked respondents, the place of birth (state/country) of their biological father, paternal grandmother, paternal grandfather, biological mother, maternal grandmother, and maternal grandfather. Responses were recoded to categorize participants into the appropriate generational category based upon parameters for determining ethnicity and immigrant lineage. These groupings were consistent with previous literature on immigrant generation and health.

Experience with residential based discrimination: Questions pertaining to experiences with perceived discrimination in acquiring housing, moving into a neighborhood of choice, and relationships with neighbors is salient to understanding the formation of residential patterns and social contexts of experiences with neighborhood environments. A single survey item asked respondents, “were you unfairly prevented from moving into a neighborhood?” A related item asked, “why were you prevented from moving into the neighborhood?” A response of “yes” and for any of the perceived reasons due to “race, ancestry, origins, or shade, skin color” were categorized as an experience with discrimination.

Perceived discrimination by neighbors: A single survey item asked respondents, “have neighbors made life difficult for you/family?” A related item asked, “why neighbors made life difficult?” Respondent answers, “yes” and any of the perceived reasons, “race, ancestry, origins, or shade, skin color” were categorized as an experience with discrimination.

Perceived neighborhood environment

Neighborhood characteristics encompass a broad range of variables that are reflective of perceptions of neighborhood social and physical environment. Measures such as perceived neighborhood safety, frequency of violence and crime, neighbor trust and proximity to municipal services and other amenities were used in previous studies (Kawachi & Berkman, 2000; Raudenbush & Sampson, 1999; Sampson, 2003; White, et al., 2011).

Neighborhood social cohesion: Measures of social capital have been used in several studies that attempted to empirically describe dimensions of the social environment ranging from collective efficacy, informal social control, and various components of the larger measure of social capital (Kawachi & Berkman, 2000). A five-item index measuring social cohesion had been used and validated from previous research on measures of neighborhood disorder in urban areas (Sampson & Raudenbush, 1999). A single question about social attributes of the neighborhood asked to what degree were any of the following statements true: a) people are willing to help neighbors, b) close-knit neighborhood, c) people in the neighborhood can be trusted, d) people in the neighborhood get along, e) people in the neighborhood share the same values. Respondents assess the level of agreement as, “very true”, “somewhat true”, “not very

true”, “not at all true”. The responses were recoded into two categories, true or not true. A summed average score was calculated based upon the number of statements participants said were true (each true statement was assigned a value of one and each not true statement was assigned a value of zero). In order to account for possible statements that may have not been answered by the participant, the final average score was calculated using the total number of questions answered as the denominator. Final social cohesion scores ranged from zero to four.

Neighborhood resources: Characteristics of neighborhood environment have been used consistently in “ecometric” research that attempts to quantify features of neighborhoods that utilize a systematic process for surveying and observing features (Sampson & Raudenbush, 1999). Race is a strong predictor of what retail establishments and daily amenities are available in neighborhoods (Ahern, Brown, & Dukas, 2011; Kwate, Loh, White, & Saldana, 2012; Morland, Wing, Diez-Roux, & Poole, 2002). Previous research has utilized self-reporting of the presence of several features of neighborhoods that are influential to quality of life and the disproportionate presence of some features that speak to associated health disparities (Finlayson, Williams, Siefert, Jackson, & Nowjack-Raymer, 2010; Schulz, Williams, Israel, et al., 2000). The survey asks respondents if any of a list of seven services is present in the neighborhood. The services include a) parks, playground or open space, b) large supermarket, c) clinic or health service, d) bank or credit union, e) check cashing outlet, f) police station, and g) public library. A summed score for the number of neighborhood resources was calculated. An affirmative response in terms of the presence of a particular resource in

the neighborhood was assigned a value of one and a negative response was assigned a value of zero. The range of neighborhood resource score was from zero to seven.

Neighborhood racial composition: A survey question asks respondents about the racial composition of their social environment or places where they conduct business including, a) the present neighborhood, b) the grocery store, and c) medical care facility. For the purposes of this study, the analysis will focus only on racial composition of the present neighborhood in which the respondent resides. The survey asks, “race make up of the neighborhood now” with responses, “all Blacks, mostly Blacks, about half Black, mostly White, or almost all Whites.” Responses were recoded to fit into three categories, all Black, mostly or half Black, and mostly or all White.

Neighborhood satisfaction: Cho, Park, & Echeverria-Cruz (2005) found neighborhood satisfaction and satisfaction with relationships with neighbors were significantly associated with emotional health status among Koreans. A single survey item asked participants to rate their level of satisfaction with their current neighborhood. The survey asked, “how satisfied are you with your neighborhood?” Responses include, “very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied.” Categories of responses were reduced to satisfied or dissatisfied.

Covariates (control variables)

This study examined the unadjusted and unadjusted influence on the odds of African American and African Caribbean adults perceiving their health status as fair or poor. The inclusion of commonly used demographic and socioeconomic control variables is helpful for determining the degree of influence that the key variables of interest have on the health outcome of interest, given other individual characteristics are

held constant. Demographic characteristics that were used as control variables included age and gender, and where the appropriate analysis required, ethnicity. Socioeconomic status was determined by annual family income, employment status, marital status, education, access to health insurance, and home ownership status, all of which reflect earning potential or financial position. High socioeconomic status has been found to be associated with mental health (Eaton & Muntaner 1999; Yu & Williams 1999) and differences in socioeconomic status by race and ethnicity have been a trend associated with neighborhood resources and overall health outcomes. Income is among the less static predictors, as compared to education, because throughout the lifespan, one's income varies (Williams & Collins, 1995). The following covariates are used in this study:

Gender: Male or female obtained from demographic data.

Age: Age in years obtained from demographic data.

Income: Self reported yearly total income. Annual household income obtained from demographic data.

Employment Status: Employed, unemployed, or not in labor force. The NSAL uses the term, "working for money."

Education: One survey item asked respondents about the number of years of education achieved. The respective number of years was then categorized as either less than high school, high school graduate, some college, or college graduate.

Home ownership: Rent or own/in the process of owning a home.

Health Insurance: Health insurance was also a proxy measure for socioeconomic status, based on kind of health insurance (i.e. public aid or employer sponsored). Also,

health insurance access has been found to be associated with health care utilization, which in turn has been associated with self-rated health. A survey item asked, “have insurance coverage for health care?” and two related questions ask if the coverage is through a government program or employer-sponsored.

Chronic Co-morbidities: Although the focus of this study was not to specifically measure the presence of physical and mental health co-morbidities and their influence on self-reported health status, the presence of co-morbidities does influence one’s overall assessment of their health status, therefore, controlling for the presence of co-morbidities was important for isolating their influence on the odds of reporting fair or poor health. In addition, environmental factors influence the risk of chronic diseases, thus it is important to consider both in the context of the discussion of explanatory factors that describe the relationship between key variables of interest. A number of chronic conditions (diabetes, cancer, hypertension, asthma, and stroke) have been pervasive in the health status of Americans, particularly for racial and ethnic minorities. As mentioned previously, health disparities stemming from the disproportionate burden of the aforementioned conditions among people of African descent is problematic. Therefore, these conditions were common health measures of interest in the literature and validated as key indicators of population health as well as recognized as the leading causes of death in 2001-2003 when the NSAL was conducted (House, Landis & Umberson, 1998; LaVeist, Gaskin, and Trujillo, 2011).

Adult participants in the NSAL were asked whether a professional has ever told them they have or experienced any of the 14 chronic physical health conditions: cancer, high blood pressure, diabetes, kidney problems, stroke, asthma, lung problems, arthritis,

back pain, blood circulation problems, heart trouble, glaucoma, vision problems, or hearing problems. These conditions were subsequently grouped into major categories: musculoskeletal conditions, lung, sensory, cancer, hypertension, diabetes, renal, stroke, vascular, or cardiac. A sum score for the number of these broad categories of conditions was calculated. For the purposes of discussion, the presence of physical co-morbidities was limited to having either, one, two, three, or four or more co-morbidities.

In terms of identifying the presence of mental health co-morbidities, adult participants in the NSAL were asked whether a professional has ever endorsed that they have or experienced any of the 32 mental health conditions (see Appendix B). These conditions were subsequently grouped into major categories: mood, anxiety, substance use/abuse, and other. A sum score for the number of these broad categories of conditions was calculated. For the purposes of discussion, the presence of mental health co-morbidities was limited to having either, one, two, or three or more co-morbidities.

Table 2
Description of Dependent and Independent Variables

Variables	Description
<i>Dependent Variables</i>	
Self-rated physical health	Two categories of self described overall physical health: excellent, very good, good and fair or poor. Fair or poor rating used as outcome of interest.
Self-rated mental health	Two categories of self described overall mental health: excellent, very good, good and fair or poor. Fair or poor rating used as outcome of interest
<i>Independent Variables</i>	
Individual Characteristics	
Race	Black (African American and African Caribbean groups) and non-Hispanic White
Ethnicity	African American and African Caribbean. African Caribbean sub-ethnic groups: Haitian, Jamaican, Trinidadian and Tobago, and other
Nativity	U.S. born or non-U.S. born
Years lived in the neighborhood	Five categories that describe the number of years lived in the current neighborhood: one to five years, six to ten years, eleven to twenty years, more than twenty years. Less than one year used as the reference category
Years lived in the U.S.	Five categories that describe the number of years lived in the U.S. U.S. born, less than five years, five to ten years, eleven to twenty years, twenty or more years. Categories are further reduced to three categories due to low cell size in the previously formatted categories. Categories are: 10 years or less, 11-20 years, and more than 20 years. More than 20 years used as the reference group
Age migrated to U.S.	Four categories describing at what age respondent immigrated to the U.S., 12 years and younger, 13-17 years, 18-34 years, 35 years and over. Caribbean sample only. Age immigrated 35 years and older used as reference group
Immigrant generational status	Three immigrant generation categories: first generation (born outside the U.S.), second generation (born in the U.S. and having a foreign

Variables	Description
Experience w/neighborhood discrimination	<p>born parent), and third generation (born in the U.S., U.S. born parent and having non-U.S. born grandparent). Generation status is further collapsed into two categories due to small cell size in third generation: first generation, second generation and higher. Caribbean sample only. First generation used as reference group</p>
Perceived neighborhood environment Social cohesion	<p>Four survey items asked respondents about previous experiences in life with being unfairly prevented from moving into a neighborhood. Yes or No. Why prevented from being unfairly prevented from moving into neighborhood, responses were limited to a) skin color, b) race, or c) ancestry or origin. Respondents were asked if ever given a difficult time by neighbors. Yes or No. Why given a difficult time by neighbors, responses were limited to a) skin color, b) race, or c) ancestry or origin. No experience with discrimination is used as the reference group</p> <p>A five item index that asks respondents about their degree of agreement with statements about the neighborhood: a) people are willing to help neighbors, b) close-knit neighborhood, c) people in the neighborhood can be trusted, d) people in the neighborhood get along, e) people in the neighborhood share the same values. Respondents assess the level of agreement as very true, somewhat true, not very true, not at all true. Categories are collapsed into two categories: 1=very true/somewhat true or 0= not very true/not at all true. Calculated an average score (range= 0-4) based on number of responses</p>
Neighborhood resources	<p>A seven item index that asks respondents about the presence of a) park, playground or open space, b) big supermarket, c) medical clinic or health service, d) bank or credit union, e) check cashing outlet, f) police station or substation, g) public library. 1=Yes or 0=No. Calculated a sum score (range= 0-7) based on the sum of responses</p>
Neighborhood satisfaction	Four categories that describe the degree of

Variables	Description
Neighborhood racial composition	<p>satisfaction with the current neighborhood in which respondent resides: very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied. Reduced to two categories: Satisfied (includes very satisfied or somewhat satisfied) and dissatisfied (includes somewhat dissatisfied or very dissatisfied). Satisfied rating is used as reference group</p> <p>Four categories that assess current neighborhood racial composition: all Blacks, mostly Black, about half Black, mostly White, or almost all Whites. Reduced to three categories: all Blacks, about half Black/ mostly Black, and mostly White/almost all Whites. Mostly White or all White used as reference category</p>
Neighborhood crime	<p>Four categories of responses to how true is the statement, "People often get mugged, robbed, or attacked in the neighborhood." Responses include: very true, somewhat true, not very true, or not true at all. Reduced to two categories: true (includes, very true or somewhat true) and not true (includes, not very true or not true at all. Not true, meaning low frequency of crime is used as reference category</p>
Neighborhood safety	<p>Four categories of responses to how true is the statement, "I feel safe being out alone in my neighborhood during the day." Responses include: very true, somewhat true, not very true, or not true at all. Reduced to two categories: true/safe (includes very true or somewhat true) and not true/unsafe (includes, not very true or not true at all). True, meaning safe is used as the reference category</p>
Neighborhood Drug Activity	<p>Four categories of responses to how true is the statement, "People sell or use drugs in my neighborhood." Responses include: very true, somewhat true, not very true, or not true at all. Reduced to two categories: true (includes very true or somewhat true) and not true (includes not very true or not true at all. Not true, meaning low frequency of drug selling or use, is used as reference category</p>

Variables	Description
<i>Control Variables</i>	
Self-reported physical health co-morbidities	Respondent self report of a professional ever having said the respondent has asthma, cancer, diabetes, hypertension, kidney problems, lung disease, or stroke. Additional co-morbidities include arthritis, back pain, blood circulation, heart trouble, glaucoma, vision, or hearing problems
Self reported mental health co-morbidities	Respondent self report of a professional ever having endorsed that the respondent has any of the 32 mood, anxiety, substance abuse, or other mental health conditions (See APPENDIX B)
Age	Individual age in years classified into four categories: age 18-24, age 25-44, age 55-64, and age 65 and over. Age 18-24 used as the reference group
Gender	Male and female. Male used as the reference group
Socioeconomic Status (SES)	
Household Income	Total annual household income in dollars classified into four categories: less than \$25,000, \$25,000-\$50,000, \$51,000-\$100,000 and more than \$100,000. Less than \$25, 000 used as the reference group
Employment Status	Employed, unemployed, not in labor force. Employed used as the reference category
Health Insurance	Two questions ask respondents about the source of health insurance coverage. One question refers to federal health insurance programs. The second refers to employer based health insurance. Each item is a dichotomous indicator, yes or no. Health insurance variable combines responses from both questions to form a response that indicates whether respondent is covered by any type of health insurance, yes or no (Insured or Uninsured)
Home ownership	Three categories that describe respondent's status of home ownership as a)own your home, buying it, b) paying rent, and c) neither own nor rent
Educational achievement	Four categories describe level of education based

Variables	Description
Marital Status	<p>on number of years of education: less than high school (less than 12 years), high school graduate (12 years), some college (13-15 years), college graduate (16 or more years). Less than high school used as the reference category</p> <p>Three categories describe the marital status: married or co-habiting, divorced, separated or widowed, and never married</p>

Analytic Approach

The goal of this study was to determine the association between ethnicity, nativity, immigrant status variables, exposure to perceived neighborhood environments (social cohesion, presence of resources, and racial composition), and self-rated physical and mental health among a population of African American and African Caribbean adults. Further analyses included an examination of the degree to which associations with self reported health status was moderated by generational status, length of stay in the U.S., age of migration (for Caribbean sample only) and years lived in the neighborhood. The comparison between African Caribbean and African American respondents was intended to help differentiate the effects of nativity on perceptions of neighborhood environment and perceptions of health. Interest in length of time adults within the study sample lived in the U.S. and in their current neighborhood developed from a need to generate additional information about localized exposure as well as overall exposure to the U.S. among African immigrant populations that was not present in the current literature. Because sample sizes per Caribbean ethnic group were not adequate, population differences by Caribbean ethnic group (Haitian, Jamaican, Trinidadian and

Tobagonian) were not conducted. Recommendation for future research would include a study that explores health, culture, and neighborhood factors by Caribbean ethnic group.

The study sample, in accordance with the NSAL sampling design, was chosen based upon racial composition of neighborhoods, particularly neighborhoods with high concentrations of African American and Caribbean residents. Differential influences of living in racially/ethnically concentrated neighborhoods and differential influences by nativity have varied based upon health measure, index of residential segregation, and country of origin, as previously discussed. As the review of the literature reveals, racial residential segregation has posited assumptions that populations of African descent live in neighborhoods that are less conducive to health, regardless of socioeconomic status as compared to other racial and ethnic groups. Formal measures of residential segregation were not calculated; however, perceived racial composition, coupled with NSAL parameters concerning neighborhood racial/ethnic composition were sufficient proxies for residential segregation and for describing the racial or ethnic context of the neighborhoods in which all respondents reside.

This study analyzed health measures previously studied in the literature in combination with perceived neighborhood environment measures not currently found in the literature pertaining to African Caribbean immigrants. All statistical analysis procedures accounted for the complex sampling design used with the 2001-2003 NSAL data set by accounting for the cluster (primary sampling units), strata, and population weight estimates. Accounting for the complex sampling design allowed the survey to generate nationally reliable estimates that took into account the disproportionate NSAL sampling design, such as oversampling techniques for capturing adequate numbers of

African Caribbean adult participants. Additionally, adequate cell size was ensured to generate reliable estimate before continuing statistical procedures. A p-value of <0.05 was considered statistically significant.

Statistical analyses were carried out using SAS 9.3 (SAS Institute, 2011), which utilizes the Taylor expansion technique for calculating variances of complex designs. Three statistical techniques were employed using weighted data: sample t-tests, Chi-square tests, and logistic regression. The initial analysis was descriptive (univariate), summarizing the characteristics of the sample, perceived health status, and components of the perceived neighborhood environment related to social cohesion and resources. Bivariate analyses using both t-tests and Chi-square tests were used for examining differences between African American and African Caribbean groups related to dimensions of the neighborhood environment and statistical significance of the bivariate associations.

Second, logistic regression was used to analyze the perceived neighborhood environment, years of exposure to the neighborhood, nativity, age of migration, years of exposure to the U.S., and immigrant generation associations with perceived health status. The odds ratio and 95% confidence interval were computed in order to measure the association between the independent and outcome variables. Due to the possible influence of demographic, socioeconomic characteristics, and presence of other comorbidities on self-reported health status, unadjusted and adjusted logistic regression models were constructed. Two interaction terms were included in regression models: 1) nativity and years lived in the neighborhood and 2) nativity and specific dimensions of

perceived neighborhood environment that had a statistically significant relationship for the odds of perceiving health as fair or poor. The general logistic regression equation is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots + \epsilon$$

In this regression equation, Y represents the dependent variable, odds of perceiving physical and mental health as fair or poor, and is modeled as a function of the independent variables.

The logistic regression equation for the inclusion of an interaction term is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 (X_1 * X_2) \dots + \epsilon$$

The first regression model including an interaction term is depicted as:

1) $Y = \beta_0 + \beta_1(\text{nativity}) + \beta_2(\text{years in the neighborhood}) + \beta_3(\text{nativity} * \text{years in neighborhood})$. The second regression model including an interaction term is depicted as:

2) $Y = \beta_0 + \beta_1(\text{nativity}) + \beta_2(\text{neighborhood social cohesion score}) + \beta_3(\text{nativity} * \text{neighborhood social cohesion score})$

In this regression equation, Y represents the dependent variable, odds of perceiving physical and mental health as fair or poor, and is modeled as a function of two independent variables.

Data preparation procedures included a test of reliability for survey items that were used to construct the variable for social cohesion and neighborhood resources. Previous studies that used composite scores for social cohesion and neighborhood resources (Finlayson, et al., 2010; Sampson, Raudenbush & Earls, 1997; Sampson & Raudenbush, 1999) were used to identify single survey items within the NSAL that represented factors related to social cohesion and neighborhood resources. A Cronbach's alpha of 0.70 was used as the acceptable limit. An acceptable Cronbach alpha was

reached for both variables (see Appendix A). Social cohesion and neighborhood resources variables were transposed into summed scores, whereby higher scores indicated stronger neighborhood social cohesion and the presence of more neighborhood resources.

Because SAS 9.3 does not automatically produce odds ratios for logistic regression models that include interaction terms when working with weighted data, the odds ratios were calculated from the estimates that are generated. Estimates were exponentiated to generate the factor and odds ratio for the focal independent variable and moderator variables: nativity, years in the neighborhood, and social cohesion. The odds ratio for interaction terms was subsequently generated by exponentiating the estimate for the interaction to generate a factor. The factor was then multiplied by the factor/odds ratio for the focal independent variable to generate the odds ratio for the interaction term.

Human Subjects Protection

The Institutional Review Board (IRB) of the University of Medicine and Dentistry of New Jersey (UMDNJ) granted approval of the present study, which ensured human subject protections were in place. Because the study data included sensitive information about past trauma, medical history, immigration experiences, and geographic identifiers of where respondents reside and where the sample population was selected, portions of the data used for this study were not publicly available. The University of Michigan Inter-University Consortium for Political and Social Research granted approval for the use of the restricted data for this study. In accordance with terms of use of restricted data, the research protocol complied with the stipulations for use and storage of restricted data and submission of annual reports pertaining to the use of the data.

Chapter 6

Results

The purpose of this study was to examine the relationship between self-rated physical and mental health status and features of the perceived neighborhood environment among African Caribbean and African American adults, using the 2001-2003 National Survey of American Life (NSAL) and the supplemental Self-Administered Questionnaire (NSAL-SAQ). In addition, this study examined the association between nativity and perceived health status. The study sample was derived from adults who participated in both surveys that consisted of 2,827 adults.

Sample Descriptive Statistics

Descriptive statistics for the sample population are shown in Table 3. The study sample was largely comprised of African American adults (76%) while a smaller, yet nationally representative sample of African Caribbean adults were included. Overall, the largest proportion of adults was between the age of 25 and 44 years, with the African Caribbean sample being slightly younger, on average, by three years. One of the first objectives of this study was to describe population differences in subjective assessments of self-rated physical and mental health. As shown in Table 3, the proportion of African Caribbean and African American adults who perceived their physical and mental health as fair or poor was comparable; however, a slightly higher proportion of African Americans had a negative perception of their physical health status. In contrast, a comparable proportion of African Caribbean and African American adults perceived their mental health status as fair or poor, with a slightly higher proportion of African Caribbeans reporting fair or poor mental health status.

In terms of socioeconomic status, African Caribbean adults had more years of education and were twice as likely as African Americans to have a college degree or graduate school education. On the opposite end of the spectrum of education, a larger proportion of African Americans have less than a high school education. In addition, African Caribbean adults had higher rates of employment, and higher annual household incomes. Nearly half of the African American population earned less than \$25,000 per year compared with nearly 30% of the African Caribbean population; however, nearly equal proportions of either population owned their own home or were in the process of buying a home.

More than half of the African Caribbean sample was first generation immigrants who were born outside of the U.S. and approximately one-third reported being of Jamaican ancestry. Adults of Trinidadian and Tobagonian ancestry were the next largest Caribbean subgroup, followed by those of Haitian descent.

Table 3
Characteristics of the Study Sample by Ethnicity, NSAL 2001-2003 (N=2,827)

Variables		African Caribbean (N=687)		African American (N=2,140)	
		Freq. ^a	% ^b	Freq. ^a	% ^b
Physical Health	Excellent/Very Good/Good	551	82.1%	1,599	78.4%
	Fair/Poor	127	17.9%	474	21.6%
Mental Health	Excellent/Very Good/Good	618	87.4%	1,816	88.5%
	Fair/Poor	60	12.6%	257	11.5%
Age (years)	18-24	105	15.1%	244	13.7%
	25-44	316	43.6%	920	42.0%
	45-64	194	29.9%	689	31.8%
	65+	72	11.4%	287	12.5%
Gender	Male	240	48.9%	693	40.9%
	Female	447	51.1%	1,447	59.1%
Marital Status	Married/cohabitating	296	50.6%	726	41.0%
	Divorced/separated/widowed	159	19.0%	740	28.9%
	Never married	232	30.4%	673	30.1%
Education	Less than high school	111	15.6	563	24.6
	High school	185	25.3	796	36.2
	Some college	198	25.0	483	24.7
	College graduate	193	34.1	298	14.5
Household Income (\$)	Less than 25,000	251	29.8%	1,137	46.4%
	25,000-50,000	230	26.9%	625	30.7%
	50,000-100,000	152	25.3%	315	19.0%
	More than 100,000	54	17.9%	63	3.9%
Health Insurance	Uninsured	181	18.1%	491	24.2%
	Insured	497	81.9%	1,579	75.8%
Employment Status	Employed	486	73.8%	1,331	63.5%
	Unemployed	71	7.4%	250	11.3%
	Not in labor force	130	18.8%	558	25.2%
Home Ownership Status	Own or buying it	251	48.4%	1,021	50.5%
	Paying rent	405	49.2%	1,037	46.4%
	Neither own nor rent	10	0.7%	38	1.9%
	Other	18	1.7%	24	1.2%
Nativity	U.S. born	217	40.6%	2,097	98.0%
	Foreign born	467	59.4%	35	2.0%
Caribbean Ethnic Origin	Spanish Caribbean	84	15.5%	1	8.2%
	Haiti	104	10.3%	0	0.0%
	Jamaica	216	31.2%	1	8.5%
	Trinidad & Tobago	79	12.0%	1	1.2%
Immigrant Generation	Other	199	31.0%	4	82.1%
	First generation	467	59.4	--	--
	Second generation & higher	217	40.6	--	--

^a Unweighted frequencies

^b Proportions are based on weighted frequencies

Ethnicity and Health Status

The first set of analyses assessed the association between ethnicity and perceived health status as fair or poor. The bivariate analysis (Table 10) observed no statistically

significant differences in perceptions by ethnicity (OR=0.79, CI=0.52-1.18, $p<0.25$).

Table 4 presents the odds ratios that pertain to perceptions of physical health. No statistically significant differences were observed in adjusted models that controlled for demographic characteristics and SES (OR=1.27, CI=0.86-1.89, $p<0.22$) and co-morbidities (OR=1.31, CI=0.86-1.97, $p<0.19$).

Similarly, Table 5 shows the odds ratios pertaining to perceptions of mental health. Differences in perceptions were not statistically significant before controlling for covariates (Table 10) (OR=1.10, CI=0.53-2.30, $p<0.78$) or after controlling for demographic and socioeconomic characteristics (OR=1.49, CI=0.78-2.85, $p<0.21$) and co-morbidities (OR=1.43, CI=0.80-2.53, $p<0.22$).

Table 4
Odds Ratios from Logistic Regression for Fair or Poor Physical Health and Ethnicity, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =407.71; P<.0001		Model 2 (N=2,140) Wald X ² =933.83; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Ethnicity	African Caribbean	1.27 (0.86-1.89)	0.22	1.31 (0.86-1.97)	0.19
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	1.73 (1.08-2.79)	0.02	1.53 (0.97-2.39)	0.06
	45-64	2.64 (1.63-4.27)	.0001	1.53 (1.00-2.33)	0.04
	65+	1.60 (0.98-2.60)	0.05	0.90 (0.54-1.48)	0.68
Gender	Male	1.0		1.0	
	Female	0.95 (0.73-1.24)	0.74	0.88 (0.63-1.21)	0.43
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separated/widowed	1.23 (0.90-1.69)	0.18	1.26 (0.88-1.81)	0.20
	Never married	0.92 (0.67-1.26)	0.62	1.08 (0.73-1.59)	0.68
Education	Less than high school	1.57 (1.15-2.15)	0.004	1.34 (0.94-1.90)	0.09
	High school	1.0		1.0	
	Some college	0.99 (0.66-1.49)	0.97	0.98 (0.66-1.47)	0.94
	College graduate	0.64 (0.44-0.94)	0.02	0.65 (0.42-0.98)	0.04
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.46 (0.31-0.68)	0.0001	.051 (0.35-0.75)	0.0006
	50,000-100,000	0.39 (0.22-0.69)	0.001	0.47 (0.26-0.84)	0.01
	More than 100,000	0.16(0.04-0.63)	0.008	0.13 (0.03-0.54)	0.005
Health Insurance	Uninsured	1.0		1.0	
	Insured	1.15 (0.85-1.55)	0.35	1.01 (0.76-1.34)	0.93
Employment Status	Employed	1.0		1.0	
	Unemployed	1.17 (0.81-1.70)	0.39	0.98 (0.65-1.48)	0.93
	Not in labor force	3.40 (2.50-4.62)	.0001	2.67 (1.93-3.71)	.0001
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.10 (0.87-1.38)	0.40	0.94 (0.73-1.21)	0.66
Physical Health Co-morbidities Sum				1.63 (1.49-1.79)	.0001
Mental Health Co-morbidities Sum				1.34 (1.15-1.58)	0.0002

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Table 5
Odds Ratios from Logistic Regression for Fair or Poor Mental Health and Ethnicity, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald $\chi^2=333.25$; P<.0001		Model 2 (N=2,140) Wald $\chi^2=431.85$; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Ethnicity	African Caribbean	1.49(0.78-2.85)	0.21	1.43 (0.80-2.53)	0.22
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	0.88 (0.48-1.62)	0.69	0.81 (0.41-1.62)	0.56
	45-64	1.20 (0.72-2.00)	0.47	0.98 (0.53-1.82)	0.96
	65+	0.56 (0.29-1.10)	0.09	0.65 (0.32-1.31)	0.23
Gender	Male	1.0		1.0	
	Female	1.18 (0.81-1.72)	0.38	1.21 (0.83-1.77)	0.31
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separated/widowed	1.23 (0.77-1.94)	0.37	1.20 (0.74-1.94)	0.44
	Never married	1.20 (0.71-2.04)	0.48	1.37 (0.77-2.44)	0.27
Education	Less than high school	1.44 (1.05-1.96)	0.02	1.20 (0.88-1.64)	0.24
	High school	1.0		1.0	
	Some college	0.68 (0.40-1.15)	0.15	0.63 (0.35-1.13)	0.12
	College graduate	0.83 (0.46-1.50)	0.55	0.89 (0.48-1.65)	0.72
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.58 (0.40-0.86)	0.006	0.63 (0.41-0.97)	0.03
	50,000-100,000	0.47 (0.23-0.94)	0.03	0.51 (0.26-1.01)	0.05
	More than 100,000	0.42(0.10-1.81)	0.24	0.37 (0.08-1.66)	0.19
Health Insurance	Uninsured	1.0		1.0	
	Insured	0.96 (0.67-1.37)	0.83	0.86 (0.57-1.28)	0.47
Employment Status	Employed	1.0		1.0	
	Unemployed	1.36 (0.86-2.16)	0.18	1.18 (0.75-1.86)	0.45
	Not in labor force	3.40 (2.50-4.62)	.0001	2.67 (1.93-3.71)	.0001
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.06 (0.79-1.42)	0.68	0.98 (0.71-1.37)	0.94
Physical Health				1.70 (1.53-1.89)	.0001
Co-morbidities					
Sum					
Mental Health					
Co-morbidities				1.40 (1.14-1.72)	0.001
Sum					

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Descriptive Statistics for Perceived Neighborhood Environment

The next set of analyses examined the relationship between perceived neighborhood environment and ethnicity. Table 6 shows descriptive statistics for perceived neighborhood environment. Both African Caribbean and African American adults lived in their current neighborhood an average of three years. Overall, African Caribbean and African American respondents shared similar perceptions of their neighborhood, with the exception of specific dimensions of the neighborhood environment pertaining to drug activity and racial composition. The proportion of adults who perceived their neighborhood as having frequent drug use and/or selling was nearly 12 percentage points higher among African Americans as compared to African Caribbeans. Although the majority of adults from both ethnic groups resided in neighborhoods that were perceived to have a racial composition that was at least half or predominantly Black, African Caribbean adults were twice as likely to live in an all White or predominantly White neighborhood. African Americans were at least three times as likely to reside in all Black neighborhoods.

Associations between elements of the perceived neighborhood environment and ethnicity were tested with the Chi-square test of independence. Of the five features of the neighborhood environment presented in Table 6, differences between African Caribbean and African American adults were found to be statistically significant on two neighborhood measures. The association between ethnicity and the perception of neighborhood drug activity ($X^2=8.93$, $p<0.03$) and perceived neighborhood racial composition ($X^2=24.89$, $p<0.01$). The majority of adults were satisfied with their current

neighborhood. More than half of the population described their neighborhood as being safe despite a large proportion reporting frequent crime and drug activity.

Table 6
Distribution of Perceived Neighborhood Environment Characteristics by Ethnicity, NSAL 2001-2003
(N=2,827)

Variables		African Caribbean (N=687)		African American (N=2,140)		<i>F^c</i> (<i>P</i>)
		Freq. ^a	% ^b	Freq. ^a	% ^b	
Years in neighborhood	< 1 year	73	10.7%	269	12.6%	1.15 (0.33)
	1-5	237	31.6%	664	31.3%	
	6-10	119	19.7%	346	17.1%	
	11-20	136	21.2%	320	15.6%	
	20+	100	16.8%	479	23.4%	
Neighborhood Satisfaction	Satisfied	510	81.2%	1,559	75.1%	3.12 (0.08)
	Not satisfied	169	18.8%	554	24.9%	
Unsafe Neighborhood	No	350	59.8%	1,135	54.3%	3.63 (0.06)
	Yes	332	40.2%	984	45.7%	
Frequent Crime in neighborhood	No	224	38.3%	860	41.1%	0.35 (0.55)
	Yes	449	61.7%	1,233	58.9%	
Drug use and selling in Neighborhood	No	160	34.7%	476	23.3%	4.56 (0.03)
	Yes	486	65.3%	1,559	76.7%	
Neighborhood Composition	All Black	51	5.0%	375	17.0%	4.29 (0.01)
	Half/Mostly Black	520	70.1%	1,405	70.5%	
	All/Mostly White	56	24.9%	219	12.5%	

^a Unweighted frequencies

^b Proportions are based on weighted frequencies

^c Associations between perceived neighborhood environment variables and ethnicity were tested with chi-square test of independence. F-value adjusts for complex sampling design of the NSAL

Table 7 summarizes the frequency distribution for each component of social cohesion by ethnic group. Nearly equal proportions, over 70%, of African Caribbeans and African Americans perceived their neighbors to be helpful. Close to 80% of respondents felt neighbors got along with one another. Approximately half or fewer than half of adults perceived their neighborhoods to be close knit or have neighbors with whom they trust or share values. Overall, a larger proportion of African American adults believed their neighborhoods presented more features of a socially cohesive neighborhood than African Caribbeans. However, the mean neighborhood social cohesion score was slightly higher among African Caribbeans (2.40) than African Americans (2.31) (see Table9).

Table 7
Distribution of Perceived Neighborhood Social Cohesion by Ethnicity,
NSAL 201-2003 (N=2,827)

Variables		African Caribbean (N=687)		African American (N=2,140)	
		Freq. ^a	% ^b	Freq. ^a	% ^b
Neighbors Help	True	469	75.7%	1,566	73.4%
	Not true	196	20.7%	538	25.0%
	Refused/Don't Know	22	3.6%	36	1.6%
Close Knit Neighborhood	True	296	45.1%	1,157	55.0%
	Not true	352	50.0%	918	41.7%
	Refused/Don't Know	39	4.9%	65	3.3%
Trust Neighbors	True	335	52.2%	1,210	58.2%
	Not true	302	41.8%	835	37.7%
	Refused/Don't Know	50	6.0%	95	4.1%
Neighbors Get Along	True	501	77.6%	1,690	79.8%
	Not true	154	17.1%	400	17.8%
	Refused/Don't Know	32	5.3%	50	2.4%
Neighbors Share Values	True	291	41.7%	995	47.5%
	Not true	339	47.2%	1,024	47.0%
	Refused/Don't Know	57	11.1%	121	5.5%

^a Unweighted frequencies

^b Proportions are based on weighted frequencies

Table 8 summarizes the frequency distribution for each component of neighborhood resources by ethnic group. A larger proportion of African Caribbean adults had access to neighborhood resources such as supermarkets, medical clinics, financial services, police stations, and libraries than African Americans. Over 90% of African Caribbean adults lived in neighborhoods with access to a park, playground, or open space compared to approximately 70% of African Americans.

Mean scores for neighborhood social cohesion and neighborhood resources by ethnic group were compared using t-test of differences. As shown in Table 9, statistically significant differences in the means between the two groups were observed in neighborhood social cohesion ($t=3.18$, $p<0.001$). African Caribbeans had higher means (2.40) than African Americans (2.31) on social cohesion. Statistically significant differences in means on the number of resources in the neighborhood were also found ($t=$

13.42, $p < 0.0001$) between the two groups. African Caribbean had higher means (5.93) on neighborhood resources than African Americans (4.96).

Table 8
Distribution of Perceived Neighborhood Resources by Ethnicity,
NSAL 2001-2003 (N=2,827)

Variables		African Caribbean (N=687)		African American (N=2,140)	
		Freq. ^a	% ^b	Freq. ^a	% ^b
Park, Playground,	Yes	594	92.0%	1,472	71.5%
	No	91	8.0%	663	28.5%
Open Space	Yes	621	88.5%	1,490	71.4%
	No	66	11.5%	650	28.6%
Medical	Yes	550	76.1%	1,394	68.0%
	No	126	23.9%	726	32.0%
Clinic	Yes	595	84.2%	1,496	71.8%
	No	89	15.8%	642	28.2%
Bank/Credit	Yes	608	82.7%	1,406	67.8%
	No	69	17.3%	717	32.2%
Cashing Outlet	Yes	535	77.0%	1,339	64.5%
	No	138	23.0%	782	35.5%
Police	Yes	572	79.4%	1,445	69.5%
	No	112	20.6%	685	30.5%

^a Unweighted frequencies

^b Proportions are based on weighted frequencies

Table 9
Means for Neighborhood Social Cohesion Score and Number of Neighborhood Resources, NSAL
2001-2003 (N=2,827)

Variables	African Caribbean (N=687)		African American (N=2,140)		t-test (P)
	Mean	SD	Mean	SD	
Social Cohesion Score (Max. Score=4)	2.40	0.62	2.31	0.67	3.18 (0.001)
Number of Neighborhood Resources (Max. Score=7)	5.93	1.52	4.69	2.26	13.42 (0.0001)

Table 10
Bivariate analysis of study variables, NSAL 2001-2003 (N=2,827)

	Fair or Poor Physical Health		Fair or Poor Mental Health	
	X ² (P)	OR (95% CI)	X ² (P)	OR (95% CI)
Ethnicity				
African Caribbean vs. African American	1.28 (0.25)	0.79 (0.52-1.18)	0.07 (0.78)	1.10 (0.53-2.30)
Perceived Neighborhood Environment	29.28 (.0005)		79.48 (.0001)	
Social Cohesion	0.81 (0.36)	1.14 (0.86-1.51)	7.16 (0.001)	1.72 (1.15-2.57)
Neighborhood Resources	4.35 (0.03)	0.95 (0.91-0.99)	3.95 (0.04)	0.93 (0.87-0.99)
Racial Composition				
All Black vs. All White	4.63 (0.03)	2.16 (1.07-4.36)	0.70 (0.40)	1.36 (0.66-2.81)
Half/Mostly Black vs. All White	0.89 (0.34)	1.57 (0.72-2.55)	0.13 (0.71)	0.88 (0.45-1.70)
Neighborhood Crime				
Frequent Criminal activity vs. Infrequent activity	0.29 (0.58)	1.10 (0.76-1.60)	0.93 (0.33)	1.24 (0.80-1.92)
Neighborhood Unsafe				
Unsafe vs. Not unsafe	1.09 (0.29)	1.18 (0.67-1.63)	2.33 (0.12)	1.34 (0.94-1.95)
Neighborhood Drug Activity				
High drug activity vs. Low drug activity	0.03 (0.85)	0.96 (0.60-1.51)	2.94 (0.08)	1.53 (0.94-2.51)
Neighborhood Satisfaction				
Dissatisfied vs. Satisfied	0.01 (0.90)	0.98 (0.74-1.30)	1.62 (0.20)	0.79 (0.55-1.13)
Number of Years in Neighborhood	12.18 (0.01)		4.05 (0.39)	
1-5 years vs. < 1 year	1.24 (0.26)	1.35 (0.79-2.31)	1.91 (0.16)	0.67 (0.38-1.17)
6-10 years vs. < 1 year	0.43 (0.51)	1.20 (0.69-2.09)	0.76 (0.38)	0.76 (0.41-1.40)
11-20 years vs. < 1 year	3.17 (0.07)	1.49 (0.96-2.32)	1.46 (0.22)	0.68 (0.36-1.26)
21+ years vs. < 1 year	5.86 (0.01)	1.90 (1.13-3.21)	0.20 (0.64)	0.86 (0.44-1.65)
Perceived Discrimination	3.61 (0.16)		0.20 (0.90)	
Prevented from moving into a neighborhood	0.17 (0.67)	1.07 (0.76-1.50)	0.12 (0.72)	0.90 (0.53-1.55)
Neighbors made life difficult	2.99 (0.08)	1.40 (0.95-2.07)	0.14 (0.70)	1.14 (0.56-2.31)
Nativity	37.82 (.0001)			
Non-U.S. Born vs. U.S. Born	37.82 (.0001)	0.38 (0.28-0.51)	0.01 (0.90)	0.95 (0.47-1.93)
Age of Migration	20.92 (.0001)		23.32 (.0001)	
< 12 years old vs. 35 and older	0.87 (0.34)	1.40 (0.69-2.86)	0.01 (0.90)	1.03 (0.56-1.92)
13-17 year old vs. 35 and older	2.08 (0.14)	0.46 (0.16-1.31)	10.68 (.0001)	0.17 (0.06-0.49)
18-34 years old vs. 35 and older	11.36 (.0001)	0.39 (0.23-0.67)	1.66 (0.19)	1.83 (0.73-4.58)
Immigrant Generation	1.75 (0.18)		0.01 (0.90)	
Second generation vs. 1 st generation	1.75 (0.18)	1.77 (0.75-4.16)	0.01 (0.90)	1.40 (0.51-2.11)
Years in the U.S. (1st generation)	13.11 (0.001)		6.31 (0.04)	
10 years or less vs. > 20 years				0.39 (0.14-1.08)
11-20 years vs. > 20 years	4.12 (0.04)	0.24 (0.10-0.61)	0.39 (0.52)	0.32 (0.09-1.02)
	0.01 (0.89)	0.53 (0.24-1.15)	1.15 (0.28)	

Exposure to Neighborhood Context

Perceived neighborhood environment and health status

Table 11 shows the results from logistic regression models used to determine the association between perceived neighborhood environment and the odds of perceiving physical health as fair or poor. In the unadjusted analysis (Table 10), two measures of the neighborhood environment, the number of neighborhood resources and racial composition were found to be statistically significant. The odds of fair or poor physical health decreases by five percent for each additional resource present in the neighborhood (OR=0.95, CI=0.91-0.99). In terms of the association between racial composition and health status, the odds of fair or poor physical health increased more than two times among adults who lived in an all Black neighborhood as compared to someone who resided in all White or mostly White neighborhood (OR= 2.16, CI=1.07-4.36). The relationship between health status and the remaining neighborhood environment variables, social cohesion (OR=1.14, CI=0.86-1.51), criminal activity (1.10, CI=0.76-1.60), safety (1.18, CI=0.86-1.63), drug activity (OR=0.96, CI=0.60-1.51), and satisfaction (0.98, CI=0.74-1.30) were not found to be statistically significant. After adjusting for demographic and socioeconomic characteristics (Table 11, Model 1), the association with neighborhood resources and racial composition and fair or poor physical health status was not found to be statistically significant (OR=1.00, CI=0.94-1.05 and OR=1.50, CI=0.71-3.16, respectively). No statistical differences were found for the remaining neighborhood environment variables, social cohesion (OR=1.14, CI=0.83-1.57), criminal activity (0.91, CI=0.60-1.39), safety (1.20, CI=0.82-1.74), drug activity (OR=1.40, CI=0.65-1.66), and satisfaction (0.96, CI=0.73-1.27). In Model 2, after

adding controls for physical and mental health co-morbidities in addition to demographic and socioeconomic factors no statistically significant differences were observed for neighborhood resources and racial composition and fair or poor physical health status was not found to be statistically significant (OR=1.00, CI=0.95-1.05, OR=1.88, CI=0.90-3.95 and OR=1.38, CI=0.72-2.61, respectively). No statistical differences were found for the remaining neighborhood environment variables, social cohesion (OR=1.07, CI=0.79-1.44), criminal activity (0.89, CI=0.55-1.43), safety (1.09, CI=0.76-1.58), drug activity (OR=0.92, CI=0.56-1.51), and satisfaction (0.85, CI=0.59-1.22).

Table 12 shows the results from the logistic regression models used to determine the association between perceived neighborhood environment and the odds of reporting fair or poor mental health. The unadjusted analysis (Table 10) shows two measures of the neighborhood environment, social cohesion and the number of neighborhood resources were found to be statistically significant. The odds of fair or poor mental health is 1.72 times as high with each unit increase in the neighborhood social cohesion score (OR= 1.72, CI= 1.15-2.57). The odds of fair or poor mental health decreases by seven percent for each additional neighborhood resource present in the neighborhood (OR=0.93, CI= 0.87-0.99). The relationship between mental health status and the remaining neighborhood environment variables, racial composition of all Black neighborhood (OR=1.36, CI=0.66-2.81), racial composition for half or mostly Black neighborhood (OR=0.88, CI= 0.45-1.70), criminal activity (1.26, CI=0.80-1.93), safety (1.34, CI=0.92-1.95), drug activity (OR=1.53, CI=0.94-2.51), and satisfaction (0.79, CI=0.55-1.13) were not found to be statistically significant. In Table 12 (Model 1), a statistically significant relationship with neighborhood social cohesion remained after

adjusting for demographic and socioeconomic factors (OR=1.52, CI= 1.01-2.30). A marginally significant relationship between perceptions of living in an unsafe neighborhood and fair/poor mental health was observed (OR=1.41, CI=0.95-2.10). In addition, the odds of fair or poor mental health was 1.72 times as high among adults who lived in neighborhoods with high drug activity (OR=1.72, CI= 1.10-2.66) compared to those who lived in neighborhoods with less frequency of drug activity. When considering a fully adjusted model (Model 2), the average social cohesion score remained a significant factor associated with fair or poor mental health, in addition to the presence of high neighborhood drug activity, and neighborhood satisfaction. The odds of fair or poor mental health was 1.47 times as high for each unit increase in neighborhood social cohesion score (OR=1.47, CI= 0.99-2.18,). The odds of fair or poor mental health was 1.61 times higher among adults who lived in neighborhoods with frequent drug activity (OR=1.61, CI=1.07-2.42,). Furthermore, adults who were dissatisfied with their neighborhoods had a 34% lower odds of fair or poor mental health compared to adults who were satisfied with their neighborhood (OR=0.66, CI=0.44-0.98). The association between number of neighborhood resources and the odds of fair or poor mental health was not statistically significant (OR=0.94, CI=0.88-1.01). No statistically significant relationships were observed among the remaining neighborhood variables: racial composition of all Black neighborhood (OR=1.08, CI=0.54-2.15), racial composition of a half or mostly Black neighborhood (OR=0.77, CI=0.42-1.40), frequent neighborhood crime (OR=0.96, CI=0.61-1.50), and unsafe neighborhood (OR=1.30, CI=0.88-1.91).

Table 11 Odds Ratios from Logistic Regression for Fair or Poor Physical Health and Perceived Neighborhood Environment, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =1091.40; P<.0001		Model 2 (N=2,140) Wald X ² =3043.38; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Perceived Neighborhood Environment	Social Cohesion	1.14 (0.83-1.57)	0.40	1.07 (0.79-1.44)	0.64
	Neighborhood Resources	1.00 (0.94-1.05)	0.99	1.00 (0.95-1.05)	0.90
	Racial Composition				
	Mostly/All White	1.0		1.0	
	All Black	1.50 (0.71-3.16)	0.28	1.88 (0.90-3.95)	0.09
	Half/mostly Black	1.10 (0.58-2.10)	0.76	1.38 (0.72-2.61)	0.32
	Neighborhood Crime				
	Frequent Crime	0.91 (0.60-1.39)	0.67	0.89 (0.55-1.43)	0.64
	Infrequent Crime	1.0		1.0	
	Neighborhood Safety				
	Unsafe	1.20 (0.82-1.74)	0.33	1.09 (0.76-1.58)	0.61
	Safe	1.0		1.0	
	Neighborhood Drug Activity				
	High drug activity	1.04 (0.65-1.66)	0.84	0.92 (0.56-1.51)	0.75
	Low drug activity	1.0		1.0	
Ethnicity	Neighborhood Satisfact				
	Satisfaction	1.0		1.0	
	Dissatisfaction	0.96 (0.73-1.27)	0.81	0.85 (0.59-1.22)	0.39
Age (years)	African Caribbean	1.40(0.99-1.98)	0.05	1.43 (1.01-2.02)	0.04
	African American	1.0		1.0	
Gender	18-24	1.0		1.0	
	25-44	1.55 (0.91-2.66)	0.10	1.36 (0.77-2.38)	0.27
	45-64	2.49 (1.39-4.46)	0.002	1.42 (0.82-2.47)	0.20
	65+	1.57 (0.85-2.87)	0.14	0.76 (0.41-1.39)	0.37
Marital Status	Male	1.0		1.0	
	Female	0.91 (0.70-1.18)	0.50	0.88 (0.64-1.20)	0.43
	Married/cohabitating	1.0		1.0	
Education	Divorced/separ/widow	1.30 (0.96-1.76)	0.08	1.30 (0.94-1.80)	0.11
	Never married	0.85 (0.61-1.20)	0.38	0.99 (0.66-1.47)	0.95
	Less than high school	1.40(0.99-1.96)	0.05	1.12 (0.78-1.60)	0.53
	High school	1.0		1.0	
Household Income (\$)	Some college	0.92 (0.61-1.38)	0.71	0.87 (0.59-1.29)	0.50
	College graduate	0.63 (0.39-1.00)	0.05	0.59 (0.35-1.00)	0.05
	Less than 25,000	1.0		1.0	
	25,000-50,000	0.46 (0.30-0.70)	0.0003	0.54 (0.35-0.83)	0.005
	50,000-100,000	0.37 (0.20-0.69)	0.001	0.45 (0.24-0.85)	0.01
Health Insurance	More than 100,000	0.18(0.04-0.70)	0.01	0.15 (0.03-0.63)	0.01
	Uninsured	1.0		1.0	
Employment Status	Insured	1.21 (0.86-1.70)	0.25	1.05 (0.75-1.47)	0.74
	Employed	1.0		1.0	
	Unemployed	1.19 (0.80-1.77)	0.38	0.95 (0.61-1.49)	0.84
	Not in labor force	3.51 (2.61-4.73)	<.0001	2.63 (1.95-3.55)	<.0001
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.06 (0.79-1.42)	0.68	0.98 (0.71-1.37)	0.94
Physical Health Co-morbidities				1.70 (1.53-1.89)	<.0001
Mental Health Co-morbidities				1.40 (1.14-1.72)	0.001

Table 12 Odds Ratios from Logistic Regression for Fair or Poor Mental Health and Perceived Neighborhood Environment, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =720.02; P<.0001		Model 2 (N=2,140) Wald X ² =1579.31; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Perceived Neighborhood Environment	Social Cohesion	1.52 (1.01-2.30)	0.04	1.47 (0.99-2.18)	0.05
	Neighborhood Resources	0.95 (0.88-1.02)	0.20	0.94 (0.88-1.01)	0.13
	Racial Composition				
	Mostly/All White	1.0		1.0	
	All Black	0.95 (0.46-1.95)	0.90	1.08 (0.54-2.15)	0.81
	Half/mostly Black	0.71 (0.37-1.35)	0.30	0.77 (0.42-1.40)	0.39
	Neighborhood Crime				
	Frequent Crime	1.00 (0.62-1.61)	0.99	0.96 (0.61-1.50)	0.86
	Infrequent Crime	1.0		1.0	
	Neighborhood Safety				
	Unsafe	1.41 (0.95-2.10)	0.08	1.30 (0.88-1.91)	0.17
	Safe	1.0		1.0	
	Neighborhood Drug Activity				
	High drug activity	1.72 (1.10-2.66)	0.01	1.61 (1.07-2.42)	0.02
	Low drug activity	1.0		1.0	
Ethnicity	Neighborhood Satisfact				
	Satisfaction	1.0		1.0	
	Dissatisfaction	0.77 (0.52-1.14)	0.19	0.66 (0.44-0.98)	0.04
Age (years)	African Caribbean	1.98 (0.93-4.20)	0.07	1.82 (0.90-3.66)	0.09
	African American	1.0		1.0	
Gender	18-24	1.0		1.0	
	25-44	0.87 (0.46-1.66)	0.68	0.80 (0.38-1.70)	0.57
	45-64	1.20 (0.69-2.06)	0.51	1.11 (0.58-2.15)	0.73
	65+	0.48 (0.22-1.03)	0.05	0.54 (0.23-1.27)	0.16
Marital Status	Male	1.0		1.0	
	Female	1.15 (0.77-1.71)	0.49	1.29(0.84-1.97)	0.23
	Married/cohabitating	1.0		1.0	
Education	Divorced/separ/widow	1.36 (0.82-2.25)	0.22	1.28 (0.77-2.11)	0.33
	Never married	1.11 (0.60-2.05)	0.71	1.19 (0.62-2.30)	0.58
	Less than high school	1.63(1.11-2.39)	0.01	1.33 (0.92-1.94)	0.12
Household Income (\$)	High school	1.0		1.0	
	Some college	0.61 (0.36-1.03)	0.06	0.53 (0.30-0.94)	0.03
	College graduate	0.88 (0.46-1.07)	0.71	0.86 (0.45-1.63)	0.65
	Less than 25,000	1.0		1.0	
	25,000-50,000	0.60 (0.37-0.98)	0.04	0.71 (0.42-1.20)	0.20
Health Insurance	50,000-100,000	0.55 (0.25-1.20)	0.13	0.59 (0.29-1.20)	0.15
	More than 100,000	0.55(0.12-2.36)	0.42	0.53 (0.12-2.34)	0.40
Employment Status	Uninsured	1.0		1.0	
	Insured	1.01 (0.66-1.55)	0.93	0.93 (0.59-1.47)	0.76
	Employed	1.0		1.0	
Home Ownership Status	Unemployed	1.32 (0.80-2.18)	0.26	1.10 (0.65-1.84)	0.72
	Not in labor force	2.07 (1.38-3.11)	<.0001	1.66 (1.07-2.58)	0.02
	Own or buying it	1.0		1.0	
Physical Health Co-morbidities	Paying rent	1.21 (0.84-1.73)	0.29	1.08 (0.76-1.55)	0.64
				1.23 (1.08-1.41)	<.0001
Mental Health Co-morbidities					
				1.96 (1.63-2.35)	<.0001

Length of Neighborhood Exposure and Health Status

In this study, the number of years lived in the current neighborhood served as a proxy for the extent of exposure to the current environment in relation to the effect of that exposure on the odds of reporting fair or poor physical and mental health. Table 13 shows the results of regression models used in testing the association between the number of years lived in the current neighborhood and the odds of reporting fair or poor physical health is shown. In the bivariate analysis (Table 10), the odds of fair or poor physical health was 1.90 times as high among adults who lived in their neighborhood 21 years or more as compared to adults who lived in their neighborhood less than one year (OR=1.90, CI= 1.13-3.21). Differences in health status were not statistically significant for the remaining categories of years of residence, 1-5 years (OR= 1.35, CI= 0.79-2.31), 6-10 years (OR=1.20, CI= 0.69-2.09), 11-20 years (OR=1.49, CI=0.96-2.32). Once the model was adjusted for demographic and socioeconomic factors (Table 13, Model 1), the number of years lived in the neighborhood was not significant (OR= 1.49, CI=0.86-2.55) nor were the remaining categories of years of residence, 1-5 years (OR=1.32, CI= 0.75-2.33), 6-10 years (OR=1.19, CI= 0.68-2.08), and 11-20 years (OR=1.49, CI=0.86-2.55). Similarly in Model 2, no statistically significant association was revealed for either of the categories of years lived in the neighborhood, 1-5 years (OR=1.57, CI= 0.82-2.98), 6-10 years (OR= 1.26, CI= 0.68-2.33), 11-20 years (OR=1.59, CI= 0.93-2.71), and 20 or more years (OR=1.64, CI= 0.87-3.08).

As shown in Table 14, the association between the number of years lived in the current neighborhood and the odds of perceiving mental health as fair or poor, was not statistically significant in either the unadjusted or adjusted models that controlled for

demographic and socioeconomic factors. In the bivariate analysis (Model 10), the odds ratios for an adult living in their current neighborhood are as follows: 1-5 years (OR=0.67, CI= 0.38-1.17), 6-10 years (OR= 0.76, CI= 0.41-1.40), 11-20 years (OR= 0.68, CI=0.36-1.26), and 21 or more years (OR=0.86, CI= 0.44-1.65). The odds ratios shown in Model 1 (Table 14) are as follows: 1-5 years (OR=0.61, CI=0.33-1.13), 6-10 years (OR= 0.82, CI=0.41-1.63), 11-20 years (OR=0.79, CI=0.37-1.68), and 20 or more years (OR= 0.96, CI=0.43-2.17). No statistically significant associations were observed when adjusting for the presence of co-morbidities (Model 2), 1-5 years (OR=.78, CI= 0.39-1.57), 6-10 years (OR= 1.03, CI= 0.47-2.26), 11-20 years (OR=0.99, CI= 0.42-2.33), and 20 or more years (OR=1.25, CI= 0.52-2.98).

Table 13
Odds Ratios from Logistic Regression for Fair or Poor Physical Health and Number of Years Lived in the Current Neighborhood, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald $X^2=867.14$; $P<.0001$		Model 2 (N=2,140) Wald $X^2=2113.71$; $P<.0001$	
		OR (95% CI)	P	OR (95% CI)	P
Years Lived in Neighborhood	< 1 year	1.0		1.0	
	1-5 years	1.32 (0.75-2.33)	0.32	1.57 (0.82-2.98)	0.16
	6-10 years	1.19 (0.68-2.08)	0.53	1.26 (0.68-2.33)	0.44
	11-20 years	1.47 (0.92-2.34)	0.09	1.59 (0.93-2.71)	0.08
	21+ years	1.49 (0.86-2.55)	0.14	1.64 (0.87-3.08)	0.12
Ethnicity	African Caribbean	1.32 (0.87-2.01)	0.18	1.31 (0.86-2.00)	0.19
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	1.87 (1.12-3.12)	0.01	1.63 (0.97-2.71)	0.06
	45-64	2.77 (1.61-4.79)	0.0002	1.65 (1.01-2.70)	0.04
	65+	1.69 (0.93-3.05)	0.08	0.91 (0.53-1.56)	0.74
Gender	Male	1.0		1.0	
	Female	0.95 (0.73-1.23)	0.70	0.91(0.65-1.25)	0.56
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	1.17 (0.84-1.63)	0.34	1.17 (0.82-1.67)	0.37
	Never married	0.80 (0.57-1.13)	0.21	0.91 (0.62-1.33)	0.63
Education	Less than high school	1.50(1.08-2.09)	0.01	1.26 (0.88-1.80)	0.19
	High school	1.0		1.0	
	Some college	0.95 (0.63-1.44)	0.84	0.93 (0.63-1.37)	0.73
	College graduate	0.66 (0.45-0.97)	0.03	0.65 (0.42-1.00)	0.05
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.45 (0.30-0.67)	<.0001	0.53 (0.36-0.78)	0.001
	50,000-100,000	0.32 (0.18-0.57)	0.0001	0.38 (0.21-0.70)	0.001
	More than 100,000	0.15(0.04-0.59)	0.006	0.13 (0.03-0.54)	0.004
Health Insurance	Uninsured	1.0		1.0	
	Insured	1.09 (0.79-1.50)	0.56	0.96 (0.71-1.29)	0.79
Employment Status	Employed	1.0		1.0	
	Unemployed	1.24 (0.85-1.80)	0.24	1.02 (0.68-1.54)	0.89
	Not in labor force	3.32 (2.44-4.52)	<.0001	2.50 (1.84-3.39)	<.0001
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.18 (0.95-1.45)	0.11	0.98 (0.77-1.25)	0.92
Physical Health Co-morbidities Sum				1.65 (1.51-1.81)	<.0001
Mental Health Co-morbidities Sum				1.36 (1.17-1.59)	<.0001

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Table 14
Odds Ratios from Logistic Regression for Fair or Poor Mental Health and Number of Years Lived in the Current Neighborhood, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =469.27; P<.0001		Model 2 (N=2,140) Wald X ² =598.20; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Years Lived in Neighborhood	< 1 year	1.0		1.0	
	1-5 years	0.61 (0.33-1.13)	0.11	0.78 (0.39-1.57)	0.49
	6-10 years	0.82 (0.41-1.63)	0.58	1.03 (0.47-2.26)	0.93
	11-20 years	0.79 (0.37-1.68)	0.54	0.99 (0.42-2.33)	0.98
	21+ years	0.96 (0.43-2.17)	0.93	1.25 (0.52-2.98)	0.60
Ethnicity	African Caribbean	1.57(0.78-3.15)	0.20	1.44 (0.75-2.74)	0.26
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	1.02 (0.55-1.87)	0.94	0.91 (0.45-1.84)	0.81
	45-64	1.34 (0.78-2.31)	0.28	1.19 (0.65-2.18)	0.56
	65+	0.60 (0.29-1.22)	0.16	0.69 (0.33-1.44)	0.33
Gender	Male	1.0		1.0	
	Female	1.12 (0.77-1.65)	0.53	1.23(0.83-1.81)	0.29
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	1.13 (0.72-1.79)	0.58	1.11 (0.69-1.79)	0.65
	Never married	1.07 (0.61-1.88)	0.79	1.16 (0.62-2.14)	0.63
Education	Less than high school	1.43(1.02-2.01)	0.03	1.18 (0.84-1.65)	0.33
	High school	1.0		1.0	
	Some college	0.68 (0.39-1.18)	0.17	0.63 (0.35-1.13)	0.12
	College graduate	0.93 (0.50-1.71)	0.81	0.97 (0.52-1.79)	0.33
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.52 (0.35-0.67)	0.0001	0.59 (0.39-0.89)	0.01
	50,000-100,000	0.35 (0.16-0.73)	0.005	0.38 (0.19-0.77)	0.007
	More than 100,000	0.37(0.08-1.62)	0.18	0.35 (0.07-1.66)	0.18
Health Insurance	Uninsured	1.0		1.0	
	Insured	0.94 (0.68-1.31)	0.73	0.90 (0.62-1.31)	0.58
Employment Status	Employed	1.0		1.0	
	Unemployed	1.40 (0.88-2.21)	0.14	1.19 (0.75-1.88)	0.44
	Not in labor force	2.21 (1.47-3.32)	0.0001	1.79 (1.14-2.81)	0.01
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.50 (1.02-2.21)	0.03	1.21 (0.78-1.87)	0.38
Physical Health Co-morbidities Sum				1.21 (1.08-1.36)	0.0007
Mental Health Co-morbidities Sum				2.01 (1.73-2.34)	<.0001

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Experience with Neighborhood Related Discrimination

This study also examined the relationship between prior experiences with residence based discrimination and its association with perceptions of health status. Survey participants were asked whether or not they had a previous experience with being unfairly prevented from moving into a neighborhood or previous experience with neighbors making life difficult. As shown in Table 15, a higher proportion of African Caribbeans (12.7%) reported having an experience where they felt they were unfairly prevented from moving into a neighborhood compared to African Americans (9.6%). Although, both groups attributed the reason for being prevented from moving into a neighborhood to race, ancestry, or skin color, more African Caribbeans than African Americans perceived this to be the reason (92.8% and 87.9 %, respectively). In addition, a smaller proportion of African Caribbeans had an experience with neighbors who made life difficult for them (5.5%) compared to African Americans (7.7%). However, a larger proportion of African Caribbeans attributed the reason for difficulty with neighbors due to race, ancestry, or skin color (74.1%) compared to slightly more than half (58.5%) of African Americans.

The chi-square test of independence (Table 15) did not reveal a significant relationship between ethnicity and the experience with past lifetime experience with being prevented from moving into a neighborhood ($X^2=3.22$, $p=0.07$) or for previous lifetime experience with neighbors making life difficult ($X^2=1.91$, $p=0.16$). Also, the chi-square test did not reveal a significant relationship between ethnicity and the experience with past lifetime experience with being prevented from moving into a neighborhood due to race, ancestry, or skin color ($X^2=1.25$, $p=0.26$). However, a significant relationship

between ethnicity and previous lifetime experience with neighbors making life difficult due to race, ancestry, or skin color was statistically significant ($X^2=4.81$, $p=0.02$).

Table 15
Distribution of Experience with Neighborhood Related Discrimination by Ethnicity, NSAL 2001-2003 (N=2,827)

Variables		African Caribbean (N=687)		African American (N=2,140)		F^c (P)
		Freq. ^a	% ^b	Freq. ^a	% ^b	
Ever prevented from moving into a neighborhood	No	605	87.3%	1,936	90.4%	3.22 (0.07)
	Yes	70	12.7%	181	9.6%	
Neighbors made life difficult	No	638	94.5%	1,964	92.3%	1.91 (0.17)
	Yes	44	5.5%	161	7.7%	
Reason prevented from moving into a neighborhood	Race, Ancestry, Skin Color	62	92.8%	154	87.9%	1.25 (0.26)
	Other	7	7.2%	25	12.1%	
Reason neighbors made life difficult	Race, Ancestry, Skin Color	30	74.1%	78	58.5%	4.81 (0.03)
	Other	14	25.9%	71	41.5%	

^a Unweighted frequencies

^b Proportions are based on weighted frequencies

^c Associations between perceived neighborhood environment variables and ethnicity were tested with chi-square test of independence. F-value adjusts for complex sampling design of the NSAL

Logistic regression models were used to analyze the association between the effect of experience with residential based discrimination and the odds of fair or poor physical health, as shown in Table 16. Due to small cell size, variables pertaining to the reason for being prevented from moving into a neighborhood and reason neighbors made life difficult were not included in the overall models. A statistically significant relationship between perceived experience with discrimination and fair or poor physical health was not observed for either the unadjusted analysis (Table 10) with regard to the variables, prevented from moving into a neighborhood (OR= 1.07, CI= 0.76-1.50) and neighbors made life difficult (OR=1.40, CI=0.95-2.07) or the adjusted models that controlled for demographic and socioeconomic factors (Table 16, Model 1) for the

measure of ever being prevented from moving into a neighborhood (OR=1.23, CI=0.79-1.92). A marginally significant relationship with perceptions of neighbors making life difficult was revealed (OR=1.37, CI=0.96-1.94). No statistically significant associations were observed when adjusting for the presence of co-morbidities (Model 2), with regard to the variable, prevented from moving into a neighborhood (OR= 1.06, CI=0.65-1.72) and neighbors made life difficult (OR=1.09, CI=0.70-1.70).

The association between experience with discrimination and odds of fair or poor mental health, as shown in Table 17, was not found to be statistically significant for the unadjusted analysis (Table 10) with regard to the variable, prevented from moving into a neighborhood (OR= 0.90, CI=0.53-1.55) and neighbors made life difficult (OR=1.14, CI=0.56-2.31) or for the adjusted model after controlling for demographic and socioeconomic factors (Table 17, Model 1) (OR=1.01, CI= 0.61-1.67; OR=1.08, CI= 0.51-2.28, respectively). It must be noted that this measure of experience of residence based discrimination was not necessarily reflective of the current neighborhood, but asked respondents about their lifetime experience with either of the abovementioned circumstances. No statistically significant associations were observed when adjusting for the presence of co-morbidities (Model 2), with regard to the variable, prevented from moving into a neighborhood (OR= 0.86, CI=0.48-1.52) and neighbors made life difficult (OR=0.75, CI=0.31-1.79).

Table 16
Odds Ratios from Logistic Regression for Fair or Poor Physical Health and Experience with
Discrimination, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =478.16; P<.0001		Model 2 (N=2,140) Wald X ² =1080.74; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Perceived Experience with Discrimination	Not prevented from moving into a neighborhood	1.0		1.0	
	Prevented from moving into a neighborhood	1.23 (0.79-1.92)	0.34	1.06 (0.65-1.72)	0.81
	Neighbors did not make life difficult	1.0		1.0	
	Neighbors made life difficult	1.37 (0.96-1.94)	0.07	1.09 (0.70-1.70)	0.68
Ethnicity	African Caribbean	1.35(0.88-2.08)	0.16	1.37 (0.89-2.12)	0.14
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	1.88 (1.12-3.17)	0.01	1.67 (1.10-2.77)	0.04
	45-64	2.96 (1.78-4.91)	<.0001	1.85 (1.15-2.98)	0.01
	65+	1.87 (1.11-3.16)	0.01	1.08 (0.64-1.83)	0.75
Gender	Male	1.0		1.0	
	Female	0.95 (0.73-1.24)	0.73	0.92(0.66-1.28)	0.64
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	1.26 (0.91-1.72)	0.15	1.24 (0.87-1.76)	0.22
	Never married	0.99 (0.71-1.37)	0.95	1.12 (0.79-1.61)	0.50
Education	Less than high school	1.58(1.16-2.15)	0.008	1.32 (0.94-1.86)	0.10
	High school	1.0		1.0	
	Some college	0.97 (0.65-1.44)	0.90	0.97 (0.66-1.43)	0.90
	College graduate	0.64 (0.44-0.94)	0.02	0.63 (0.42-0.96)	0.03
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.45 (0.30-0.68)	0.0001	0.52 (0.35-0.77)	0.001
	50,000-100,000	0.38 (0.21-0.69)	0.001	0.46 (0.25-0.84)	0.01
	More than 100,000	0.16(0.04-0.60)	0.006	0.14 (0.03-0.57)	0.006
Health Insurance	Uninsured	1.0		1.0	
	Insured	1.09 (0.81-1.47)	0.52	0.95 (0.73-1.25)	0.75
Employment Status	Employed	1.0		1.0	
	Unemployed	1.07 (0.73-1.58)	0.70	0.90 (0.59-1.37)	0.63
	Not in labor force	3.25 (2.39-4.44)	<.0001	2.42 (1.76-3.34)	<.0001
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.05 (0.83-1.33)	0.65	0.92 (0.70-1.19)	0.53
Physical Health Co-morbidities Sum				1.63 (1.49-1.78)	<.0001
Mental Health Co-morbidities Sum				1.35 (1.14-1.59)	0.0003

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Table 17
Odds Ratios from Logistic Regression for Fair or Poor Mental Health and Experience with
Discrimination, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =342.77; P<.0001		Model 2 (N=2,140) Wald X ² =466.04; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Perceived Experience with Discrimination	Not prevented from moving into a neighborhood	1.0		1.0	
	Prevented from moving into a neighborhood	1.01 (0.61-1.67)	0.95	0.86 (0.48-1.52)	0.61
	Neighbors did not make life difficult	1.0		1.0	
	Neighbors made life difficult	1.08 (0.51-2.28)	0.83	0.75 (0.31-1.79)	0.52
Ethnicity	African Caribbean	1.56(0.80-3.03)	0.18	1.48 (0.82-2.65)	0.18
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	0.89 (0.48-1.64)	0.70	0.84 (0.40-1.74)	0.64
	45-64	1.27 (0.77-2.09)	0.33	1.23 (0.68-2.20)	0.48
	65+	0.60 (0.30-1.17)	0.13	0.74 (0.37-1.48)	0.39
Gender	Male	1.0		1.0	
	Female	0.95 (0.73-1.24)	0.73	0.92(0.66-1.28)	0.64
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	1.26 (0.80-1.98)	0.30	1.22 (0.77-1.93)	0.38
	Never married	1.28 (0.75-2.20)	0.35	1.41 (0.78-2.55)	0.24
Education	Less than high school	1.40(1.01-1.93)	0.03	1.15 (0.84-1.57)	0.37
	High school	1.0		1.0	
	Some college	0.61 (0.36-1.02)	0.06	0.58 (0.33-1.01)	0.05
	College graduate	0.79 (0.43-1.45)	0.45	0.83 (0.45-1.50)	0.54
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.55 (0.37-0.80)	0.001	0.62 (0.42-0.92)	0.01
	50,000-100,000	0.47 (0.23-0.97)	0.04	0.52 (0.26-1.03)	0.06
	More than 100,000	0.42(0.10-1.76)	0.24	0.43 (0.10-1.83)	0.25
Health Insurance	Uninsured	1.0		1.0	
	Insured	0.92 (0.64-1.33)	0.68	0.86 (0.57-1.29)	0.47
Employment Status	Employed	1.0		1.0	
	Unemployed	1.30 (0.80-2.12)	0.27	1.17 (0.72-1.90)	0.50
	Not in labor force	2.08 (1.48-2.93)	<.0001	1.69 (1.15-2.48)	0.006
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.33 (0.96-1.84)	0.08	1.07 (0.74-1.54)	0.69
Physical Health Co-morbidities Sum				1.24 (1.10-1.40)	0.0003
Mental Health Co-morbidities Sum				2.00 (1.72-2.35)	<.0001

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Nativity and Health Status

The association between nativity (U.S. born or non-U.S. born), and the odds of perceiving fair or poor physical health status is shown in Table 18. A statistically significant difference in the perception of physical health was observed before and after controlling for demographic and socioeconomic characteristics. Non-U.S. born individuals had a 62% lower odds of reporting fair or poor physical health as compared to their U.S. born counterparts (Table 10) (OR= 0.38, CI=0.28-0.51). As shown in Model 1 (Table 18), after controlling for demographic and socioeconomic factors, the association remained significant (OR= 0.38, CI= 0.21-0.67). After controlling for demographic and socioeconomic factors and the presence of co-morbidities (Model 2), a marginally significant relationship between nativity and odds of reporting fair or poor physical health was observed (OR=0.57, CI= 0.31-1.03), whereas non-U.S. born had a 43% lower odds of reporting fair/poor physical health..

The association between nativity and the odds of perceiving mental health as fair or poor is shown in Table 19. Differences in mental health status were not statistically significant as shown in bivariate analysis (Table 10) and Model 1 (Table 19) (OR=0.95, CI=0.47-1.93; OR=1.10, CI=0.31-3.91, respectively). After controlling for the presence of co-morbidities (Model 2), no statistically significant relationship was observed (OR=1.83, CI=0.55-6.13).

Table 18
Odds Ratios from Logistic Regression for Fair or Poor Physical Health and Nativity, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =406.66; P<.0001		Model 2 (N=2,140) Wald X ² =931.97; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Nativity	U.S. Born	1.0		1.0	
	Non-U.S. Born	0.38 (0.21-0.67)	.0001	0.57 (0.31-1.03)	0.06
Ethnicity	African Caribbean	2.10(1.17-3.76)	0.01	1.70 (0.91-3.16)	0.09
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	1.74 (1.07-2.83)	0.02	1.54 (0.97-2.46)	0.06
	45-64	2.63 (1.62-4.29)	.0001	1.64 (1.05-2.54)	0.02
	65+	1.60 (0.97-2.62)	0.06	0.91 (0.66-1.26)	0.72
Gender	Male	1.0		1.0	
	Female	0.95 (0.73-1.23)	0.70	0.91(0.66-1.26)	0.58
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	1.22 (0.89-1.66)	0.21	1.19 (0.84-1.70)	0.31
	Never married	0.90 (0.65-1.24)	0.54	1.04 (0.73-1.48)	0.81
Education	Less than high school	1.56(1.14-2.13)	0.008	1.31 (0.93-1.85)	0.11
	High school	1.0		1.0	
	Some college	0.99 (0.65-1.50)	0.97	0.98 (0.66-1.46)	0.95
	College graduate	0.65 (0.44-0.96)	0.03	0.64 (0.42-0.97)	0.03
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.46 (0.31-0.68)	.0001	0.52 (0.36-0.76)	0.0007
	50,000-100,000	0.39 (0.22-0.69)	0.001	0.46 (0.25-0.84)	0.01
	More than 100,000	0.16(0.04-0.61)	0.007	0.14 (0.03-0.57)	0.006
Health Insurance	Uninsured	1.0		1.0	
	Insured	1.15 (0.85-1.55)	0.36	0.99 (0.75-1.31)	0.99
Employment Status	Employed	1.0		1.0	
	Unemployed	1.17 (0.80-1.70)	0.40	0.97 (0.65-1.64)	0.90
	Not in labor force	3.33 (2.45-4.52)	.0001	2.54 (1.85-3.50)	.0001
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.10 (0.88-1.39)	0.37	0.96 (0.74-1.24)	0.76
Physical Health Co-morbidities Sum				1.63 (1.49-1.78)	.0001
Mental Health Co-morbidities Sum				1.34 (1.14-1.57)	0.0003

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Table 19
Odds Ratios from Logistic Regression for Fair or Poor Mental Health and Nativity, NSAL 2001-2003
(N=2,827)

Variables		Model 1 (N=687)		Model 2 (N=2,140)	
		Wald $X^2=3.34.26$; $P<.0001$		Wald $X^2=440.13$; $P<.0001$	
		OR (95% CI)	P	OR (95% CI)	P
Nativity	U.S. Born	1.0		1.0	
	Non-U.S. Born	1.10 (0.31-3.91)	0.88	1.83 (0.55-6.13)	0.32
Ethnicity	African Caribbean	1.42(0.42-4.73)	0.56	1.02 (0.32-3.21)	0.96
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	0.88 (0.48-1.61)	0.69	0.81 (0.40-1.64)	0.56
	45-64	1.20 (0.72-1.99)	0.47	1.12 (0.62-2.01)	0.69
	65+	0.56 (0.29-1.10)	0.09	0.68 (0.34-1.36)	0.28
Gender	Male	1.0		1.0	
	Female	1.18 (0.81-1.71)	0.38	1.30(0.88-1.91)	0.18
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	1.23 (0.77-1.95)	0.37	1.18 (0.73-1.91)	0.48
	Never married	1.21 (0.71-2.06)	0.48	1.33 (0.74-2.37)	0.32
Education	Less than high school	1.44(1.06-1.96)	0.01	1.19 (0.87-1.62)	0.25
	High school	1.0		1.0	
	Some college	0.68 (0.40-1.15)	0.15	0.64 (0.36-1.12)	0.12
	College graduate	0.83 (0.45-1.52)	0.55	0.87 (0.47-1.59)	0.66
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.58 (0.40-0.86)	0.008	0.66 (0.44-0.97)	0.03
	50,000-100,000	0.47(0.23-0.95)	0.03	0.51 (0.26-1.02)	0.05
	More than 100,000	0.42(0.10-1.83)	0.25	0.42 (0.09-1.92)	0.26
Health Insurance	Uninsured	1.0		1.0	
	Insured	0.96 (0.67-1.37)	0.83	0.88 (0.59-1.31)	0.54
Employment Status	Employed	1.0		1.0	
	Unemployed	1.36 (0.86-2.16)	0.18	1.19 (0.75-1.87)	0.45
	Not in labor force	2.26 (1.55-3.28)	.0001	1.87 (1.22-2.87)	0.004
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.37 (1.00-1.88)	0.04	1.10 (0.77-1.57)	0.59
Physical Health Co-morbidities Sum				1.24 (1.11-1.38)	.0001
Mental Health Co-morbidities Sum				1.98 (1.70-2.32)	.0001

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Interaction of Nativity and Length of Neighborhood Exposure

Results of the present study reveal a statistically significant association between nativity and perceptions of health status. Subsequently, the association between nativity and the odds of perceiving physical health as fair or poor was examined further to assess whether the association differed by number of years lived in the current neighborhood. As shown in Table 20, an interaction term (nativity*years in neighborhood) was introduced in Models 2 and 3. Nativity was the focal independent variable while number of years lived in the neighborhood served as the moderator. A statistically significant association for the interaction term was not observed in the unadjusted model or adjusted model, meaning there were no statistically significant differences between non-U.S. born and U.S. born individuals for any of the categories of number of years lived in the current neighborhood. Therefore, the length of exposure to the current neighborhood did not moderate the relationship between nativity and the odds of fair or poor physical health. As shown in Model 2, the odds ratios for non-U.S. born adults by level of years lived in the neighborhood were 1-5 years (OR= 0.24, $p=0.62$), 6-10 years (OR=0.39, $p= 0.96$), 11-20 years (OR=0.52, $p=0.75$), and more than 20 years (OR=1.01, $p=0.29$). As shown in Model 3, the odds ratios for non-U.S. born adults by level of years lived in the neighborhood were 1-5 years (OR= 0.36, $p=0.42$), 6-10 years (OR=0.69, $p= 0.90$), 11-20 years (OR=0.52, $p=0.68$), and more than 20 years (OR=1.34, $p=0.54$).

The association between nativity and the odds of perceiving mental health as fair or poor was examined further to assess whether the association differed by number of years lived in the current neighborhood. As shown in Table 21, an interaction term (nativity*years in neighborhood) was introduced in Models 2 and 3. Nativity was the

focal independent variable while number of years lived in the neighborhood served as the moderator. A statistically significant association for the interaction term was observed in Model 2 and Model 3, meaning there were statistically significant differences between non-U.S. born and U.S. born individuals for categories of number of years lived in the current neighborhood. Therefore, the length of exposure to the current neighborhood moderated the relationship between nativity and the odds of fair or poor physical health. As shown in Model 2, among adults who lived in their current neighborhood 6-10 years, non-U.S. born adults had a 79% lower odds of reporting fair or poor mental health compared to U.S. born adults (OR=0.21, $p=0.006$). Among adults who have lived in their current neighborhood 11-20 years, non-U.S. born adults had a 71% lower odds of reporting fair or poor mental health (OR=0.29, $p=0.01$). In Model 3, when adjusting for demographic and socioeconomic characteristics and the presence of physical and mental health co-morbidities, the number of years lived in the current neighborhood moderated the relationship between nativity and the odds of perceiving mental health as fair or poor for all categories of years of residence. Among adults who lived in their current neighborhood 1-5 years, the odds of reporting fair or poor mental health was 1.38 times as high among non-U.S. born adults compared to U.S. born adults (OR= 1.38, $p=0.02$). For individuals who lived in their current neighborhood 6-10 years, non-U.S. born adults had a 68% lower odds of reporting fair or poor mental health compared to U.S. born adults (OR=0.32, $p=0.0007$). Among individuals who lived in their current neighborhood 11-20 years, non-U.S. born adults had a 60% lower odds of reporting fair or poor mental health compared to U.S. born adults (OR=0.40, $p=0.01$). Among individuals who have lived in their current neighborhood more than 20 years, the odds of

reporting fair or poor mental health was 1.46 times as high among non-U.S. born adults compared to U.S. born adults (OR=1.46, $p=0.05$).

Table 20
Odds Ratios from Logistic Regression for Fair or Poor Physical Health and the Interaction Nativity and Length of Residence in the Current Neighborhood, NSAL 2001-2003 (N=2,827)

	Model 1			Model 2			Model 3		
	Odds Ratio	Estimate (calculated factor)	P-value	Odds Ratio	Estimate (Calculated factor)	P-Value	Odds Ratio	Estimate (Calculated factor)	P-Value
<i>Nativity</i>									
Ref= U.S. born									
Non-U.S. Born	0.40	-0.91 (0.40)	<.0001	0.41	-0.89 (0.41)	0.24	0.78	-0.24 (0.78)	0.76
<i>Years in Neighborhood</i>									
Ref= < 1 year									
1-5	1.32	0.28 (1.32)	0.28	1.34	0.30 (1.34)	0.28	1.59	0.47 (1.59)	0.16
6-10	1.18	0.17 (1.18)	0.10	1.18	0.17 (1.18)	0.55	1.25	0.23 (1.25)	0.48
11-20	1.44	0.37 (1.44)	0.54	1.43	0.36 (1.43)	0.12	1.59	0.47 (1.59)	0.10
20 or more	1.84	0.61 (1.84)	0.02	1.82	0.60 (1.82)	0.03	1.61	0.48 (1.61)	0.15
<i>Nativity* Years in Neighborhood</i>									
Non-U.S. born*									
1-5 years				0.24	-0.42 (0.65)	0.62	0.36	-0.75 (0.47)	0.42
Non-U.S. born*									
6-10 years				0.39	-0.04 (0.96)	0.96	0.69	-0.11 (0.89)	0.90
Non-U.S. born*									
11-20 years				0.52	0.26 (1.29)	0.75	0.52	-0.40 (0.67)	0.68
Non-U.S. born*									
20 or more years				1.01	0.91 (2.48)	0.29	1.34	0.55 (1.73)	0.54
<i>Overall Model Evaluation</i>									
Wald (p value)		47.74(<.0001)			57.32(<.0001)			2521.21(<.0001)	

Note: Model 2 introduced interaction term. Model 3 introduced controls for demographic factors (age, gender, ethnicity), socioeconomic factors (household income, employment status, marital status, education, health insurance, home ownership), and presence of physical and mental health co-morbidities. Estimates (calculated factor) is used to derive the odds ratio

Table 21
Odds Ratios from Logistic Regression for Fair or Poor Mental Health and the Interaction Nativity and Length of Residence in the Current Neighborhood, NSAL 2001-2003 (N=2,827)

	Odds Ratio	Model 1 Estimate (calculated factor)	P-value	Odds Ratio	Model 2 Estimate (Calculated factor)	P-Value	Odds Ratio	Model 3 Estimate (Calculated factor)	P-Value
<i>Nativity</i>									
Ref= U.S. born									
Non-U.S. Born	0.97	-0.02 (0.97)	0.94	2.71	1.00 (2.71)	0.09	8.16	2.10 (8.16)	0.006
<i>Years in Neighborhood</i>									
Ref= < 1 year									
1-5	0.64	-0.40 (0.64)	0.15	0.74	-0.29 (0.74)	0.24	0.93	-0.07 (0.93)	0.82
6-10	0.76	-0.27 (0.76)	0.37	0.88	-0.12 (0.88)	0.67	1.28	0.25 (1.28)	0.51
11-20	0.68	-0.38 (0.68)	0.22	0.78	-0.24 (0.78)	0.41	1.23	0.21 (1.23)	0.60
20 or more	0.86	-0.14 (0.86)	0.65	0.96	-0.04 (0.96)	0.88	1.50	0.41 (1.50)	0.32
<i>Nativity* Years in Neighborhood</i>									
Non-U.S. born* 1-5 years				0.81	-1.20 (0.30)	0.11	1.38	-1.74 (0.17)	0.02
Non-U.S. born* 6-10 years				0.21	-2.50 (0.08)	0.006	0.32	-3.05 (0.04)	.0007
Non-U.S. born* 11-20 years				0.29	-2.13 (0.11)	0.01	0.40	-3.01 (0.05)	0.01
Non-U.S. born* 20 or more years				1.11	-0.88 (0.41)	0.23	1.46	-1.71 (0.18)	0.05
<i>Overall Model Evaluation</i>									
Wald (p value)		5.81(0.32)			20.24(0.01)			963.80(<.0001)	

Note: Model 2 introduced interaction term. Model 3 introduced controls for demographic factors (age, gender, ethnicity), socioeconomic factors (household income, employment status, marital status, education, health insurance, home ownership), and presence of physical and mental health co-morbidities. Estimates (calculated factor) is used to derive the odds ratio

Interaction of Nativity and Perceived Neighborhood Environment (Social Cohesion)

Results of the present study reveal a statistically significant association between nativity and perceptions of health status. Subsequently, the association between nativity and the odds of perceiving physical health as fair or poor was examined further to assess whether the association differed by perceptions of the neighborhood environment, specifically social cohesion. As shown in Table 22, an interaction term (nativity*neighborhood social cohesion score) was introduced in the unadjusted and adjusted logistic regression models. Nativity was the focal independent variable while the neighborhood social cohesion score served as the moderator. A statistically significant association for the interaction term was not observed in the Model 2 (OR=0.73, $p=0.52$) or Model 3 (OR=0.64, $p=0.77$), meaning there were no statistically significant differences between non-U.S. born and U.S. born individuals for perceived degree of neighborhood social cohesion. Therefore, neighborhood social cohesion did not moderate the relationship between nativity and the odds of fair or poor physical health.

The association between nativity and the odds of perceiving mental health as fair or poor was examined further to assess whether the association differed by perceptions of the neighborhood environment, specifically social cohesion. As shown in Table 23, an interaction term (nativity*neighborhood social cohesion score) was introduced in Model 2 and Model 3. Nativity was the focal independent variable while the neighborhood social cohesion score served as the moderator. A statistically significant association for the interaction term was not observed in Model 2 (OR=0.39, $p=0.15$) or adjusted model, Model 3 (OR=0.27, $p=0.17$), meaning there were no statistically significant differences

between non-U.S. born and U.S. born individuals for perceived degree of neighborhood social cohesion. Therefore, neighborhood social cohesion did not moderate the relationship between nativity and the odds of fair or poor physical health.

Table 22
Odds Ratios from Logistic Regression for Fair or Poor Physical Health and the Interaction Nativity and Neighborhood Social Cohesion, NSAL 2001-2003 (N=2,827)

	Model 1			Model 2			Model 3		
	Odds Ratio	Estimate (calculated factor)	P-value	Odds Ratio	Estimate (Calculated factor)	P-Value	Odds Ratio	Estimate (Calculated factor)	P-Value
<i>Nativity</i>									
Ref= U.S. born									
Non-U.S. Born	0.37	-0.48 (0.37)	<.0001	0.83	-0.18 (0.83)	0.69	0.71	-0.33 (0.71)	0.74
<i>Perceived Neighborhood Environment</i>									
Social cohesion score	1.24	0.21 (1.24)	0.007	1.09	0.09 (1.09)	0.56	1.05	0.05 (1.05)	0.57
<i>Nativity* Perceived Neighborhood Environment</i>									
Non-U.S. born* Social Cohesion				0.73	-0.12 (0.88)	0.52	.64	-0.09 (0.91)	0.77
<i>Overall Model Evaluation</i>									
Wald (p value)		37.93(<.0001)			40.76(<.0001)			1430.94(<.0001)	

Note: Model 2 introduced interaction term. Model 3 introduced controls for demographic factors (age, gender, ethnicity), socioeconomic factors (household income, employment status, marital status, education, health insurance, home ownership), and presence of physical and mental health co-morbidities. Estimates (calculated factor) is used to derive the odds ratio

Table 23
Odds Ratios from Logistic Regression for Fair or Poor Mental Health and the Interaction Nativity and Neighborhood Social Cohesion, NSAL 2001-2003 (N=2,827)

		Model 1			Model 2			Model 3	
	Odds Ratio	Estimate (calculated factor)	P-value	Odds Ratio	Estimate (Calculated factor)	P-Value	Odds Ratio	Estimate (Calculated factor)	P-Value
<i>Nativity</i>									
Ref= U.S. born									
Non-U.S. Born	0.90	-0.04 (0.90)	0.77	0.25	-1.35 (0.25)	0.12	0.10	-2.25 (0.10)	0.24
<i>Perceived Neighborhood Environment</i>									
Social cohesion score	1.89	0.63 (1.89)	<.0001	2.91	1.07 (2.91)	0.002	1.37	0.32 (1.37)	0.01
<i>Nativity* Perceived Neighborhood Environment</i>									
Non-U.S. born* Social Cohesion				0.39	0.47 (1.59)	0.15	.27	2.74 (1.01)	0.17
<i>Overall Model Evaluation</i>									
Wald (p value)		32.83(<.0001)			31.53(<.0001)			562.21(<.0001)	

Note: Model 2 introduced interaction term. Model 3 introduced controls for demographic factors (age, gender, ethnicity), socioeconomic factors (household income, employment status, marital status, education, health insurance, home ownership), and presence of physical and mental health co-morbidities. Estimates (calculated factor) is used to derive the odds ratio

Exposure to U.S. Context and Health Status

The second objective of this study was to examine the relationship between perceived neighborhood environment and immigrant status variables and the influence of length of exposure to the environment in the U.S. as measured by age at migration and the number of years lived in the U.S. In addition, differences in health status by immigrant generation were examined.

Age at migration

As shown in Table 24 and 25, statistically significant associations between age at migration and perceptions of the neighborhood environment in terms of frequency of crime ($F=12.52$, $p<.0001$), sense of safety ($F=5.44$, $p=0.002$), drug use and selling ($F=7.43$, $p=.0002$), and satisfaction ($F=5.45$, $p=0.002$) were observed. In addition, a significant relationship between age at migration and social cohesion was observed ($F=7.61$, $p=0.01$). Adults who migrated at the age of 12 years or younger had, on average, higher social cohesion scores. In terms of associations between number of years lived in the U.S. and perceptions of the neighborhood environment, a statistically significant relationship with neighborhood racial composition was observed ($F=41.91$, $p<.0001$). In terms of associations between generation status and perceptions of the neighborhood environment, a statistically significant association with number of resources was observed ($t=2.15$, $p=0.04$). On average, second generation and higher African Caribbean adults reported fewer resources in their neighborhoods than first generation immigrants.

The association between age at migration and the odds of fair or poor physical health is shown in Table 26. The bivariate analysis (Table 10) reveals a statistically

significant association between age of migration and physical health status for specific age categories. Individuals who immigrated to the U.S. between age 18-34 years had a 61% lower odds of reporting fair or poor physical health as compared to individuals who emigrated at older ages, age 35 and older (OR=0.39, CI=0.23-0.67,). After adjusting for demographic and socioeconomic factors (Table 26, Model 1), the relationship between age at immigration and perceived health status was not significant for the 18-34 age group (OR=0.76, CI=0.35-1.64) nor after adjusting for the presence of co-morbidities (Model 2) (OR= 0.66, CI= 0.30-1.47).

The bivariate relationship between specific categories of age at immigration and the odds of reporting fair or poor mental health was statistically significant (Table 10). African Caribbean adults who immigrated to the U.S. between the age of 13 and 17 had an 83% lower odds of reporting fair or poor mental health as compared to adults who migrated at the age of 35 years and older (OR=0.17, CI=0.06-0.49). As shown in Model 1 (Table 27), after adjusting for demographic and socioeconomic factors, a significant relationship with the odds of perceiving mental health as fair or poor remained for this age group. Individuals who immigrated between the ages of 13-17 years old had 99% lower odds of perceiving their mental health as fair or poor (OR=0.007, CI= 0.001-0.48) and a similar odds after adjusting for the presence of co-morbidities in Model 2 (OR=0.007, CI= .001-0.04). In addition, in Model 1, individuals who migrated to the U.S. at ages under 12 years old had an 85% lower odds of fair or poor mental health as compared to those who emigrated at age 35 and older (OR=0.15, CI=0.03-0.75) and in Model 2, this age group had a 91% lower odds (OR=0.09, CI= 0.025-0.37).

Immigrant generation

The association between immigrant generation (first generation or successive generations) and the odds of perceiving physical health status as fair or poor is shown in Table 28. A statistically significant association was not observed in the bivariate analysis (Table 10) (OR= 1.77, CI= 0.75-4.16); however, after adjusting for demographic and socioeconomic factors (Table 28, Model 1), the relationship was statistically significant (OR= 2.60, CI= 1.48-4.57). Second generation and higher immigrants had an odds of fair or poor physical health 2.60 times higher than first generation immigrants. When adjusting the model for the presence of co-morbidities (Model 2), a marginally significant relationship was observed (OR= 1.74, CI= 0.96-3.13) whereas second generation immigrants had a 1.74 times higher odds of reporting fair/poor physical health than first generation.

The relationship between immigrant generation and the odds of perceiving mental health as fair or poor is shown in Table 29. A statistically significant association was not observed in either the bivariate analysis (Table 10) (OR= 1.04, CI= 0.51-2.11) or the adjusted model after controlling for demographic and socioeconomic factors in Model 1 (OR=0.90, CI=0.25-3.22) and the presence of co-morbidities in Model 2 (OR=0.54, CI= 0.16-1.82).

Table 24
Bivariate analysis of perceived neighborhood environment and immigrant status variables, NSAL 2001-2003

	Age at Migration ^a (N=467) <i>F (P)</i> ^c	Years in U.S. ^a (N=467) <i>F (P)</i> ^c	Generation ^b (N=467) <i>F (P)</i> ^c
Racial Composition	0.60 (0.72)	41.91 (<.0001)	0.26 (0.76)
All Black vs. All White			
Half/Mostly Black vs. All White			
Neighborhood Crime	12.52 (<.0001)	0.66 (0.51)	0.04 (0.84)
Frequent Criminal activity vs. Infrequent activity			
Neighborhood Safety	5.44 (0.002)	1.08 (0.34)	0.60 (0.44)
Unsafe vs. Not unsafe			
Neighborhood Drug Activity	7.43 (.0002)	0.40 (0.66)	0.38 (0.53)
High drug activity vs. Low drug activity			
Neighborhood Satisfaction	5.45 (0.002)	0.48 (0.62)	1.94 (0.17)
Dissatisfied vs. Satisfied			

^a Age at migration and years in the U.S. refers only to first generation African Caribbean immigrants

^b Generation uses the entire African Caribbean sample

^c Associations between perceived neighborhood environment variables and age at migration, years in the U.S. and generation were tested with chi-square test of independence. F-value adjusts for complex sampling design of the NSAL

Table 25
Means for Neighborhood Social Cohesion Score and Number of Neighborhood Resources, NSAL
2001-2003

Variables	Age at Migration ^a (N=467)		F-test ^c (P)
	Mean	SD	
Social Cohesion Score (Max. Score=4)			7.61
12 years old and less	2.53	0.08	(0.01)
13-17 years old	2.42	0.07	
18-34 years old	2.26	0.09	
35 years and older	2.22	0.05	
Number of Neighborhood Resources (Max. Score=7)			0.22
12 years old and less	6.08	0.26	(0.64)
13-17 years old	6.36	0.16	
18-34 years old	6.20	0.15	
35 years and older	5.84	0.38	
Variables	Years in U.S. ^a (N=467)		F-test ^c (P)
	Mean	SD	
Social Cohesion Score (Max. Score=4)			2.05
10 years old and less	2.43	0.06	(0.16)
11-20 years	2.27	0.03	
20 or more years	2.28	0.09	
Number of Neighborhood Resources (Max. Score=7)			0.42
10 years old and less	5.82	0.15	(0.52)
11-20 years	6.31	0.07	
20 or more years	6.16	0.28	
Variables	Generation ^b (N=687)		t-test (P)
	Mean	SD	
Social Cohesion Score (Max. Score=4)			0.23
1 st generation	2.33	0.05	(0.18)
2 nd generation	2.35	0.05	
Number of Neighborhood Resources (Max. Score=7)			2.15
1 st generation	6.06	0.14	(0.04)
2 nd generation	5.22	0.32	

^a Age at migration and years in the U.S. refers only to first generation African Caribbean immigrants

^b Generation uses the entire African Caribbean sample

^c Associations between perceived neighborhood environment variables and age at migration and years in the U.S. were tested with ANOVA. F-value adjusts for complex sampling design of the NSAL Anova

Table 26
Odds Ratios from Logistic Regression for Fair or Poor Physical Health and Age at Migration, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =410789.60; P<.0001		Model 2 (N=2,140) Wald X ² =7981.18; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Age at Migration	35 years and older	1.0		1.0	
	< 12 years old	2.30 (0.89-5.95)	0.08	1.28 (0.48-3.42)	0.61
	13-17 years old	1.94 (0.70-5.35)	0.19	1.14 (0.33-3.97)	0.83
	18-34 years old	0.76 (0.35-1.64)	0.49	0.66 (0.30-1.47)	0.31
Ethnicity	African Caribbean	5.90(2.52-13.08)	.0001	5.61 (2.38-13.20)	.0001
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	2.56 (0.72-9.13)	0.14	1.97 (0.28-13.86)	0.49
	45-64	7.19 (1.80-12.28)	0.005	5.41 (0.68-42.64)	0.10
	65+	8.88 (1.61-49.09)	0.01	6.95 (0.45-105.27)	0.16
Gender	Male	1.0		1.0	
	Female	0.94 (0.47-1.85)	0.86	0.90(0.43-1.88)	0.79
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	1.49 (0.60-3.69)	0.38	1.34 (0.50-3.63)	0.55
	Never married	0.60 (0.14-2.47)	0.48	0.57 (0.15-2.16)	0.41
Education	Less than high school	2.51(0.79-7.92)	0.11	3.04 (1.02-9.06)	0.04
	High school	1.0		1.0	
	Some college	1.78 (0.66-4.76)	0.24	2.23 (0.71-7.00)	0.16
	College graduate	1.62 (0.95-2.76)	0.07	2.35 (1.05-5.24)	0.03
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.32 (0.11-0.93)	0.03	0.46 (0.14-1.51)	0.20
	50,000-100,000	0.38(0.09-1.58)	0.18	0.36 (0.08-1.60)	0.18
	More than 100,000	.0001(.001-.001)	.0001	.0001(.001-.001)	.0001
Health Insurance	Uninsured	1.0		1.0	
	Insured	0.94(0.42-2.14)	0.90	1.02 (0.39-2.70)	0.95
Employment Status	Employed	1.0		1.0	
	Unemployed	1.28 (0.47-3.45)	0.61	0.88 (0.25-3.08)	0.84
	Not in labor force	2.86 (0.91-8.95)	0.06	1.23 (0.47-3.18)	0.66
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	2.53 (1.05-6.08)	0.03	2.11 (0.74-6.01)	0.15
Physical Health Co-morbidities Sum				1.74 (1.11-2.71)	0.01
Mental Health Co-morbidities Sum				2.48 (1.84-3.39)	.0001

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Table 27
Odds Ratios from Logistic Regression for Fair or Poor Mental Health and Age at Migration, NSAL
2001-2003 (N=2,827)

Variables		Model 1 (N=687)		Model 2 (N=2,140)	
		Wald X ² =5599.98; P<.0001		Wald X ² =87961.19; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Age at Migration	35 years and older	1.0		1.0	
	< 12 years old	0.15 (0.03-0.75)	0.02	0.09 (0.025-0.37)	0.0007
	13-17 years old	0.007 (0.001-0.48)	<.0001	0.007 (0.001-0.04)	<.0001
	18-34 years old	0.43 (0.14-1.36)	0.15	0.44 (0.11-1.80)	0.25
Ethnicity	African Caribbean	0.69(0.35-1.34)	0.27	0.82 (0.38-1.76)	0.62
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	1.10 (0.33-3.64)	0.87	0.98 (0.19-4.97)	0.98
	45-64	0.24 (0.05-1.16)	0.07	0.33 (0.05-1.88)	0.21
	65+	0.54 (0.06-4.62)	0.57	1.19 (0.11-12.69)	0.88
Gender	Male	1.0		1.0	
	Female	0.32 (0.12-0.86)	0.02	0.23(0.09-0.58)	<.0001
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	4.03 (1.18-13.69)	0.02	2.77 (0.67-11.45)	0.15
	Never married	7.45 (1.26-43.89)	0.02	6.78 (1.90-24.24)	0.003
Education	Less than high school	3.17(0.60-16.72)	0.17	2.55 (0.75-8.60)	0.13
	High school	1.0		1.0	
	Some college	0.58 (0.15-2.19)	0.43	0.60 (0.14-2.43)	0.47
	College graduate	0.12 (0.03-0.50)	0.008	0.17 (0.03-0.85)	0.03
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.09 (0.03-0.30)	<.0001	0.06 (0.01-0.42)	0.003
	50,000-100,000	0.36(0.04-2.84)	0.33	0.28 (0.03-2.69)	0.27
	More than 100,000	0.001(.001-.001)	<.0001	.001(.001-.001)	<.0001
Health Insurance	Uninsured	1.0		1.0	
	Insured	0.89(0.35-2.23)	0.81	1.22 (0.41-3.56)	0.71
Employment Status	Employed	1.0		1.0	
	Unemployed	0.75 (0.21-2.66)	0.66	0.39 (0.08-1.71)	0.21
	Not in labor force	0.56 (0.09-3.42)	0.52	0.46 (0.07-2.91)	0.41
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	0.86 (0.27-2.76)	0.80	1.08 (0.33-3.51)	0.89
Physical Health				1.05 (0.74-1.49)	0.75
Co-morbidities Sum					
Mental Health					
Co-morbidities Sum				3.40 (1.76-6.55)	.0002

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Table 28. Odds Ratios from Logistic Regression for Fair or Poor Physical Health and Immigrant Generation, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =406.66; P<.0001		Model 2 (N=2,140) Wald X ² =931.97; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Immigrant Generation	1 st generation	1.0		1.0	
	2nd generation	2.60 (1.48-4.57)	0.0009	1.74 (0.96-3.13)	0.06
Ethnicity	African Caribbean	0.47(0.26-0.85)	0.01	0.58 (0.31-1.09)	0.09
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	1.74 (1.07-2.83)	0.02	1.54 (0.97-2.46)	0.06
	45-64	2.63 (1.62-4.29)	.0001	1.64 (1.05-2.54)	0.02
	65+	1.60 (0.97-2.62)	0.06	0.91 (0.56-1.49)	0.72
Gender	Male	1.0		1.0	
	Female	0.95 (0.73-1.23)	0.70	0.91(0.66-1.26)	0.58
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	1.22 (0.89-1.66)	0.21	1.19 (0.84-1.70)	0.31
	Never married	0.90 (0.65-1.24)	0.54	1.04 (0.73-1.48)	0.81
Education	Less than high school	1.56(1.14-2.13)	0.005	1.31 (0.93-1.85)	0.11
	High school	1.0		1.0	
	Some college	0.99 (0.65-1.50)	0.97	0.98 (0.66-1.46)	0.95
	College graduate	0.65 (0.44-0.96)	0.03	0.64 (0.42-0.97)	0.03
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.46 (0.31-0.68)	.0001	0.52 (0.36-0.76)	0.0007
	50,000-100,000	0.39(0.22-0.69)	0.001	0.46 (0.25-0.84)	0.01
	More than 100,000	0.16(0.04-.061)	0.007	0.14 (0.03-0.57)	0.006
Health Insurance	Uninsured	1.0		1.0	
	Insured	1.15(0.85-1.55)	0.36	0.99 (0.75-1.31)	0.99
Employment Status	Employed	1.0		1.0	
	Unemployed	1.17 (0.80-1.70)	0.40	0.97 (0.65-1.46)	0.90
	Not in labor force	3.33 (2.45-4.52)	.0001	2.54 (1.85-3.50)	.0001
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.10 (0.88-1.39)	0.37	0.96 (0.74-1.24)	0.76
Physical Health Co-morbidities Sum				1.63 (1.49-1.78)	.0001
Mental Health Co-morbidities Sum				1.34 (1.14-1.57)	.0003

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Table 29. Odds Ratios from Logistic Regression for Fair or Poor Mental Health and Immigrant Generation, NSAL 2001-2003 (N=2,827)

		Model 1 (N=687)		Model 2 (N=2,140)	
		Wald $X^2=334.26$; $P<.0001$		Wald $X^2=440.13$; $P<.0001$	
	Variables	OR (95% CI)	P	OR (95% CI)	P
Immigrant Generation	1 st generation	1.0		1.0	
	2nd generation	0.90 (0.25-3.22)	0.88	0.54 (0.16-1.82)	0.32
Ethnicity	African Caribbean	0.70(0.21-2.34)	0.56	0.97 (0.31-3.04)	0.96
	African American	1.0		1.0	
Age (years)	18-24	1.0		1.0	
	25-44	0.88 (0.48-1.61)	0.69	0.81 (0.40-1.64)	0.56
	45-64	1.20 (0.72-1.99)	0.47	1.12 (0.62-2.01)	0.69
	65+	0.56 (0.29-1.10)	0.09	0.68 (0.34-1.36)	0.28
Gender	Male	1.0		1.0	
	Female	1.18 (0.81-1.71)	0.38	1.30(0.88-1.91)	0.18
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	1.23 (0.77-1.95)	0.37	1.18 (0.73-1.91)	0.48
	Never married	1.21 (0.71-2.06)	0.48	1.33 (0.74-2.37)	0.32
Education	Less than high school	1.44(1.06-1.96)	0.01	1.19 (0.87-1.62)	0.25
	High school	1.0		1.0	
	Some college	0.68 (0.40-1.15)	0.15	0.64 (0.36-1.12)	0.12
	College graduate	0.83 (0.45-1.52)	0.55	0.87 (0.47-1.59)	0.66
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.58 (0.40-0.86)	0.006	0.66 (0.44-0.97)	0.03
	50,000-100,000	0.47(0.23-0.95)	0.03	0.51 (0.26-1.02)	0.05
	More than 100,000	0.42(0.10-1.83)	0.25	0.42 (0.09-1.92)	0.26
Health Insurance	Uninsured	1.0		1.0	
	Insured	0.96(0.67-1.37)	0.83	0.88 (0.59-1.31)	0.54
Employment Status	Employed	1.0		1.0	
	Unemployed	1.36 (0.86-2.16)	0.18	1.19 (0.75-1.87)	0.45
	Not in labor force	2.26 (1.55-3.28)	.0001	1.87 (1.22-2.87)	0.48
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	1.37 (1.00-1.88)	0.04	1.10 (0.77-1.57)	0.59
Physical Health Co-morbidities Sum				1.24 (1.11-1.38)	0.0001
Mental Health Co-morbidities Sum				1.98 (1.70-2.32)	.0001

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Years in the U.S. and health status

The association between the number of years lived in the U.S. among first generation African Caribbean immigrants and the odds of perceiving physical health as fair or poor is presented in Table 30. In the bivariate analysis, (Table 10) first generation immigrants who lived in the U.S. 10 years or less had a 76% lower odds of fair or poor physical health relative to first generation immigrants who lived in the U.S. more than 20 years (OR=0.24, CI= 0.10-0.61). A statistically significant relationship remained after adjusting for demographic and socioeconomic factors as shown in (Table 30, Model 1). First generation African Caribbean immigrants who lived in the U.S. 10 years or less had a 74% lower odds of fair or poor physical health relative to first generation immigrants who lived in the U.S. more than 20 years (OR= 0.26, CI= 0.10-0.67). As shown in Model 2, after adjusting for demographic, socioeconomic factors, and the presence of other co-morbidities, differences in perceptions of physical health status were observed in relation to the number of years lived in the U.S. First generation African Caribbean immigrants who lived in the U.S. 10 years or less had a 60% lower odds of fair or poor physical health relative to immigrants who lived in the U.S. more than 20 years (OR= 0.40, CI=0.17-0.97).

The association between years lived in the U.S. and the odds of perceiving mental health as fair or poor is shown in Table 31. In the bivariate analysis (Table 10), a statistically significant relationship was not observed (OR= 0.39, CI=0.14-1.08). However, after adjusting for demographic and socioeconomic factors (Table 31, Model 1), a statistically significant relationship was observed. First generation African Caribbean immigrants who lived in the U.S. 10 years or less had a 76% lower odds of fair

or poor mental health as compared to first generation immigrants who lived in the U.S. more than 20 years (OR= 0.24, CI= 0.06-0.91). After adjusting for the presence of co-morbidities (Model 2), a statistically significant association was no longer observed.

Table 30
Odds Ratios from Logistic Regression for Fair or Poor Physical Health and Number of Years Lived in the U.S. Among 1st Generation African Caribbean Immigrants, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =6704.67; P<.0001		Model 2 (N=2,140) Wald X ² =138666.44; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Years Lived in the U.S.	>20 years	1.0		1.0	
	10 years or less	0.26(0.10-0.67)	0.004	0.40 (0.17-0.97)	0.04
	11-20 years	0.69 (0.27-1.76)	0.44	0.85 (0.30-2.40)	0.75
Age (years)	18-24	1.0		1.0	
	25-44	1.10 (0.34-3.57)	0.86	1.17 (0.22-6.02)	0.84
	45-64	1.46 (0.38-5.55)	0.57	1.36 (0.25-7.43)	0.71
	65+	3.24 (0.058-17.93)	0.17	3.12 (0.42-23.18)	0.26
Gender	Male	1.0		1.0	
	Female	1.49 (0.73-3.04)	0.26	1.41(0.66-2.98)	0.36
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	0.68 (0.20-2.28)	0.53	0.70 (0.21-2.28)	0.55
	Never married	0.61 (0.16-2.35)	0.47	0.57 (0.15-2.05)	0.39
Education	Less than high school	2.55(1.01-6.41)	0.04	3.06 (1.25-7.47)	0.01
	High school	1.0		1.0	
	Some college	0.92 (0.30-2.82)	0.88	1.05 (0.28-3.99)	0.93
	College graduate	1.61 (0.97-2.66)	0.06	2.11 (0.94-4.72)	0.06
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.39(0.13-1.17)	0.09	0.53 (0.16-1.75)	0.30
	50,000-100,000	0.35(0.08-1.41)	0.14	0.34 (0.08-1.50)	0.15
	More than 100,000	0.001(.0010-.001)	.0001	0.001(.0010-.001)	.0001
Health Insurance	Uninsured	1.0		1.0	
	Insured	0.58(0.23-1.34)	0.25	0.65 (0.23-1.80)	0.41
Employment Status	Employed	1.0		1.0	
	Unemployed	1.22 (0.47-3.16)	0.67	0.78 (0.23-2.62)	0.69
	Not in labor force	2.11 (0.77-5.74)	0.14	1.03 (0.41-2.60)	0.93
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	2.09 (0.87-5.05)	0.09	1.59 (0.60-4.21)	0.35
Physical Health Co-morbidities Sum				1.73(1.21-2.49)	0.002
Mental Health Co-morbidities Sum				2.05 (1.51-2.77)	.0001

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Table 31
Odds Ratios from Logistic Regression for Fair or Poor Mental Health and Number of Years Lived in the U.S. Among 1st Generation African Caribbean Immigrants, NSAL 2001-2003 (N=2,827)

Variables		Model 1 (N=687) Wald X ² =41000.04; P<.0001		Model 2 (N=2,140) Wald X ² =1787809.35; P<.0001	
		OR (95% CI)	P	OR (95% CI)	P
Years Lived in the U.S.	>20 years	1.0		1.0	
	10 years or less	0.24 (0.06-0.91)	0.03	0.42 (0.11-1.58)	0.20
	11-20 years	0.29 (0.07-1.08)	0.06	0.50 (0.13-1.99)	0.33
Age (years)	18-24	1.0		1.0	
	25-44	1.63 (0.41-6.52)	0.48	2.54 (0.51-12.62)	0.25
	45-64	0.67 (0.15-2.93)	0.59	1.20 (0.19-7.36)	0.83
	65+	2.48 (0.18-33.63)	0.49	7.82 (0.60-100.59)	0.11
Gender	Male	1.0		1.0	
	Female	1.02 (0.41-2.49)	0.96	1.08(0.44-2.66)	0.85
Marital Status	Married/cohabitating	1.0		1.0	
	Divorced/separ/widow	0.82 (0.18-3.73)	0.80	1.22 (0.24-6.20)	0.80
	Never married	1.09 (0.26-4.54)	0.90	1.24 (0.38-3.99)	0.71
Education	Less than high school	3.90(1.08-13.97)	0.03	5.00 (1.55-16.11)	0.0007
	High school	1.0		1.0	
	Some college	0.92 (0.27-3.16)	0.90	1.41 (0.42-4.75)	0.57
	College graduate	0.20 (0.04-0.86)	0.03	0.26 (0.07-1.00)	0.05
Household Income (\$)	Less than 25,000	1.0		1.0	
	25,000-50,000	0.41(0.11-1.46)	0.17	0.80 (0.18-3.51)	0.77
	50,000-100,000	1.21(0.19-7.41)	0.83	2.60 (0.32-20.77)	0.02
	More than 100,000	0.001(.0010-.001)	.0001	0.001(.0010-.001)	.0001
Health Insurance	Uninsured	1.0		1.0	
	Insured	0.24(0.09-0.62)	0.0003	0.26 (0.09-0.75)	0.01
Employment Status	Employed	1.0		1.0	
	Unemployed	0.18 (0.04-0.86)	0.19	0.16 (0.03-0.77)	0.02
	Not in labor force	0.99 (0.22-4.45)	0.99	0.77 (0.13-4.54)	0.77
Home Ownership Status	Own or buying it	1.0		1.0	
	Paying rent	3.64 (0.87-15.14)	0.07	2.51 (0.56-11.28)	0.22
Physical Health Co-morbidities Sum				1.18(0.78-1.78)	0.42
Mental Health Co-morbidities Sum				2.96 (1.78-4.93)	.0001

Note: Model 1 adjusts for demographic and socioeconomic factors. Model 2 adjusts for demographic and socioeconomic factors and physical and mental health co-morbidities.

Chapter 7

Discussion

This research contributes four main findings: (1) Specific groups of African descent, African American and African Caribbean, do not differ in their overall odds or reporting fair or poor physical or mental health, rather, these groups share a similar health outlook; (2) African Americans and African Caribbeans have a higher odds of fair or poor mental health when exposed to neighborhoods where there is a stronger sense of social cohesion, satisfaction, and more frequent drug activity; (3) Among first generation African Caribbeans, in general, those who lived longer in the U.S. and in their current neighborhood, have a higher odds of fair or poor mental health than those with a shorter duration and their U.S. born counterparts; (4) Among first generation African Caribbeans, those with a longer duration in the U.S., and second generation and higher immigrants have a higher odds of fair or poor physical health than those with a shorter duration in the U.S. and first generation counterparts.

Ethnicity and Health Status

A statistically significant difference in health status by ethnicity was not observed. This finding suggests greater convergence of health status among African Caribbeans and African Americans and that the idea that immigrant populations are very different from African Americans is not fully substantiated. As a consequence of being exposed to the same racially constituted neighborhoods, both groups are likely to experience the same stressors related to features of the environment such as number of resources or level of drug activity that are inherent in these neighborhoods as a result of institutionalized

inequality. The findings from this study shed light on the similarities rather than differences between these two groups.

Neighborhood Environment and Health Status

Perceptions of some neighborhood features such as social cohesion, drug activity, and satisfaction influenced self-rated mental health. Contrary to what is in the literature (Echeverria, et al., 2004), social cohesion is expected to have a buffering effect, but the findings of this study reveal that higher social cohesion was not associated with positive mental health. However, the present study supports the implication of the literature from a perspective of racial/ethnic differences in the association between community level social cohesion and health outcomes among African Americans compared to other groups. A similar direction for the association may not be demonstrated among different groups (Gary, Stark & LaVeist, 2007). This finding poses several questions. Components of social cohesion may have a different impact on mental health given the social contexts that African Americans and African Caribbeans are exposed, suggesting the need to investigate the mechanism and factors associated with the formation of social cohesion within similar racially constituted neighborhoods. The present study observed that a fair degree of social cohesion exists within Black communities; however, social cohesion may not, translate to increased capacity to overcome historical and systematic processes that progressively compromise social structures supportive of well-being (Sampson, Raudenbush, & Earls, 1997). Wilson (1978) has written that in poor Black communities, social networks comprised mostly of strong ties among kin and co-ethnics with limited ability to promote socioeconomic mobility of the group. He suggested the need for weak ties, those ties with non-kin groups that may be able to establish wider social connections

for economic mobility. The types of networks and nature of bonds (positive and negative) between residents and outside resources drive the potential health outcomes influenced by neighborhood level contexts (Sampson, 2004). Blacks continue to be the most segregated compared to other racial/ethnic groups. Formalized measures of residential segregation have consistently shown that predominately Black communities more spatially and socially isolated compared to poor White communities (Frey, 2010; Iceland & Scopilliti, 2008; Massey & Denton, 1993; Scopilliti & Iceland, 2008). Spatial isolation is one mechanism that shapes the strength and nature of social ties that could otherwise be conducive to health status.

Another finding of the study that contradicts the literature is the lack of correspondence between neighborhood satisfaction and favorable ratings of mental health. The idea of “satisfaction” is quite complex. Because of differences in the social experiences of people of African descent who reside within the U.S. social context, a deeper understanding of the mechanisms that drive degrees of satisfaction with the environment in which they are embedded is important to consider. A subjective assessment of satisfaction is drawn from many dimensions that are specific and unique to individuals and populations. The degree of satisfaction that is experienced is also predicated on history and the nature of the types of interactions, either positive or negative, that groups have had in relation to the broader society. In response to these interactions, individuals and groups identify needs, expectations, and define the standards by which environments are assessed. It is plausible that African Americans and African Caribbeans may use different criteria for assessing social cohesion and satisfaction within their environment emphasizing a sense of belonging to the group or being accepted in the

neighborhood. Although objective assessments of the presence of certain physical features of the environment, such as presence of resources, may be an important factor in overall satisfaction, however, the socio-cultural and psychosocial dynamics of residing in a neighborhood and racial composition may be more important than material resources (Leventhal & Brooks-Gunn, 2003). Historically, communal reliance on kin and co-ethnics in response to institutionalized forces may be a reason for the trend in increasing social cohesion and satisfaction in lieu of external factors that deleteriously influence health status. Furthermore, the neighborhood level context cannot be separated from the larger social environmental context of living in the U.S. because this overarching U.S. context is part of the mechanism that shapes the settlement patterns of Black people into areas that are adversely affected by economic disinvestment and social conditions resulting from such disinvestment. For future research, extracting information that pertains to sense of belonging may add to the current understanding of social cohesion and neighborhood satisfaction.

Nativity, Immigration Related Variables and Health Status

The study findings revealed that nativity did not have a significant association with mental health status, after the presence of co-morbidities was controlled; however, when nativity was factored in with neighborhood exposure a significant effect on the mental health status of non-U.S. born African Caribbeans was observed relative to U.S. born African Americans and African Caribbeans. The findings revealed that the greatest odds of fair or poor mental health among non-U.S. born adults were among those who lived in their current neighborhood less than five years and those who lived in their current neighborhood more than 20 years. It is possible that immigrants experience greater

stressors associated with loss of familiar culture, and acculturative stress in integrating into a new neighborhood level context and broader societal context. These transitional stressors are expected to dissipate in succeeding years. However, the finding of increased odds of fair to poor mental health after living 20 years or more in the neighborhood suggests alternative explanations. It is plausible that as temporal transitional stressors related to the process of immigration dissipate, non-US born become increasingly aware of permanent structural realities that are beyond their control. The impact of living in racially segregated neighborhoods is realized as part of an institutionalized pattern rather than temporal acculturative adaptation or ethnic differences (Laguerre, 1984). While non-US born Africans initially saw themselves as uniquely different from US born African Americans, the reality of residential segregation exposes both groups to similar neighborhood characteristics that create convergence in mental health status even when SES and co-morbidities were controlled.

Age of migration had the most profound association with the odds of fair or poor mental health status. Adults who emigrated during their formative years, under the age of 17, had significantly lower odds of fair or poor mental health compared to individuals who emigrated as adults. Older adult immigrants bear the stressors from environmental and socio-cultural changes more than younger immigrants who rely on adult members for survival in the host society. Fullilove (2004) has identified the phenomenon of “root shock “ as the physical and mental state of sudden and disillusioning distress associated with displacement from environments with strong ties, networks, and familial roots. However, this study found no significant associations between age of migration and physical health status suggesting that mental health may be an earlier indicator of stress

stemming from migration and acculturation to the neighborhood environment. Physical health is generally attached to one's ability to function and work which is not compromised especially among immigrants who have been identified and pre-selected by their families and immigration requirements to have better life chances in the new society (Laguerre, 1984; 1998).

In terms of the relationship between immigration and physical health, years lived in the U.S. and immigrant generation were significant factors. Poorer health status was associated with longer duration in the U.S. and among second and higher immigrant generations. These study findings support the phenomenon of downward assimilation reported in the immigrant health literature (Acevedo-Garica, et al., 2010; Hamilton & Hummer, 2011). Succeeding generations of immigrants are more likely to be assimilated and have looser ties to traditional cultural perspectives shared by their parents, and sensitized to the cultural and social milieu of the host society as their reality. Succeeding generations may not have the protective cultural perspective and practices of first generation immigrants that may temper the embodiment of racialized social hierarchies experienced in the new physical and social environments. This finding implies the role of social status or cultural evolution in creating convergence of physical health status of US born and non-US born African descendants (Collins, Wu & David, 2000).

This research illuminates the importance of exposure to both, neighborhood physical and social context and the overall U.S. social context toward explicating the mechanism that influences health disparities among African American and African Caribbean populations. The role of the neighborhood environment is a microcosm of the effect that the U.S. social context has on populations of African descent. The neighborhood

environment cannot be considered in isolation of the manner in which individuals perceive and interact within the U.S. social milieu. The loss of immigrant health advantage with increased exposure, using proxies such as age at migration, years lived in the U.S., and immigrant generation illustrates the mechanism that creates convergence of health status between non US born African Caribbean and U.S. born African Americans. This finding sheds light on how exposure to neighborhood level features in similarly racially constituted neighborhoods and to the broader US social context eliminates the initial health advantage of African Caribbean immigrants. African Caribbean immigrants provide a more recent documentation of a similar phenomenon that US born Africans experience in their lifetime and for several generations mediated by exposures to neighborhood level and broader social contexts of the U.S. Such finding raises the possibility that the health of these two groups of African descent maybe impacted by their social position in the the US social hierarchy that transcend ethnic, nativity and SES differences (Adler, et al., 2008; Babones, 2010).

Consideration for socioeconomic position (SEP) advances theoretical perspectives that address other factors that individual-level variables commonly used in research, such as SES have not measured. SEP is related to racialized social hierarchy that would make for a more comprehensive analysis of the social contexts that SES does not address. It is important to consider the long term effects of exposure to systematic consequences of SEP by living within similarly racially constituted environments and the structural challenges of being a Black immigrant in the US. The findings illustrate the process of embodiment of the social environment throughout the life-course and increased health vulnerability. Population data reveals that regardless of SES, people of African descent

are less likely to be residentially differentiated by SES or class as compared to population patterns of other racial and ethnic groups. Future research is needed to ascertain the extent to which SEP moderates the relationship between exposure to features of the neighborhood environment and the broader U.S. social context and health status of other African immigrant groups.

Chapter 8

Conclusion

This study sought to contribute to the understanding of pathways that influence the creation or persistence of health disparities experienced by populations of African descent residing in the U.S. by examining the relationship between physical and mental health status and exposure to neighborhood level and overall societal contexts. These findings offer possible explanations, pathways, strategies, and constructs that need further research for understanding mechanisms that may influence the health trajectory of groups living with social, economic, and residential inequity through the examination of two specific groups-African Americans and African Caribbeans.

Although it is well known that a gap in health outcomes exists between Black populations and those of other racial and ethnic groups, intra-group differences between U.S. born and non-U.S. born Blacks have not been well studied. The findings of the present study reveal that U.S. born and non-U.S. born Blacks are not significantly different in terms of self-reported health status associated with similar exposures to racially constituted neighborhood environment, and the U.S. social context. Contrary to studies suggesting immigrant health advantage because of ethnic and cultural differences, or socioeconomic differences, the findings of this study reveal that environments have a stronger influence on self-reported health outcomes for people of African descent. A growing proportion of immigrants and succeeding generations have an increased risk for deteriorating health. The projected health status of immigrants along the life-course converges with that of their U.S. born counterparts after longer exposure to the social and ecological context in the U.S., which point to the consequences of factors that contribute

to racial residential segregation. Exposure to these environments at the neighborhood and societal level ultimately affect health status.

Emphasis on socioeconomic status (SES) defined by income, education, or occupation, is often regarded as a primary social determinant of health; however, the findings from this study suggest socioeconomic position (SEP) or social status is a significant force that influences neighborhood settlement patterns, and quality of life in predominantly Black neighborhoods. SEP is among the many social mechanisms that shape the identities and worldview of those living within segregated communities as well as the quality of interactions and relationships between individuals embedded within these types of neighborhoods and the manner in which their neighborhoods are impacted by the larger societal context. African Caribbeans, succeeding generations of Caribbean immigrants, and African Americans all encounter challenges associated with negotiating life between two environmental contexts (Waters & Eschbach, 1995; Waters, 1999), resulting in a convergence of health status rather than a perpetuation of the health gap between immigrant and non-immigrant groups.

Convergence of health status between African Americans and African Caribbeans can be explained from an eco-social perspective (Krieger, 2001) that recognizes the effect of exposure to social and physical environments, including the accumulation of stressors, at the neighborhood and broader societal levels on the creation of certain pathways and trajectories throughout the life-course. Life's circumstances become embodied, including but not limited to the socially constructed identities that are assumed, ascribed social status and position within a racialized social hierarchy, physical surroundings of neighborhoods, and the substance of social, educational, and economic opportunities.

The connection between the individual self, the environment, the life-course, and health outcomes can be summarized by way of the following mechanism. Social environments shape one's sense of self, one's sense of self in relation to others, and subsequently the ability to mitigate social and material conditions in order to achieve an ideal level of health. A process of adaptation to the environmental context, both physical and social, may create added stressors, resulting in elevated allostatic loads that increase vulnerability to adverse physical and mental health states. Exposure, by way of longer duration of being immersed within these environmental contexts through measures as age at migration, number of years lived in the U.S. and immigrant generation, is a pathway to the accumulation of allostatic load over the life-course.

Historical factors include a host of cumulative events and circumstances that surround the immigration experience, particularly pre-migration conditions in the native country and post migration process of acculturation or assimilation into neighborhoods (Guruge & Khanlou, 2004; Portes & Rumbaut, 2006; Portes & Zhou, 1993). Societies often formulate views about populations based upon the history of political, economic, or socio-cultural relationships that position populations within social hierarchies, thus differentially ascribing individual and group social status.

Because experiences of people of African descent, whether U.S. born or not, may be different from that of other groups, different social mechanisms and the magnitude of the effect of those mechanisms may find the health status of people of African descent to be particularly vulnerable as a result of persistent and unmitigated social inequity. Drawing from the findings of the present study, Figure 2a, illustrates the process of health convergence as it relates to African Americans and African Caribbeans. While these

groups initially differed by ethnicity and nativity, their common exposure to racially constituted neighborhoods and wider societal contexts is central to the shared process of embodiment of social inequities manifested in similar patterns of poor health. The pathway of embodiment leads to the convergence in their health status. Figure 2b, illustrates the synthesis of this process of embodiment and convergence of health outcomes between U.S. born and non-U.S. born African descent groups. The synthesized model depicts the pathway of embodiment of unequal social statuses objectively measured by environmental exposures within the lifecourse of two groups of African descent in the U.S. The constructs are built on the tenets of eco-social, allostatic load and lifecourse theories that are revealed in the patterning of health outcomes of African groups. It adds credence to the theory of race as a fundamental cause of health disparities because of particular exposures of these groups to environmental stressors that are subsequently manifested in patterned health status.

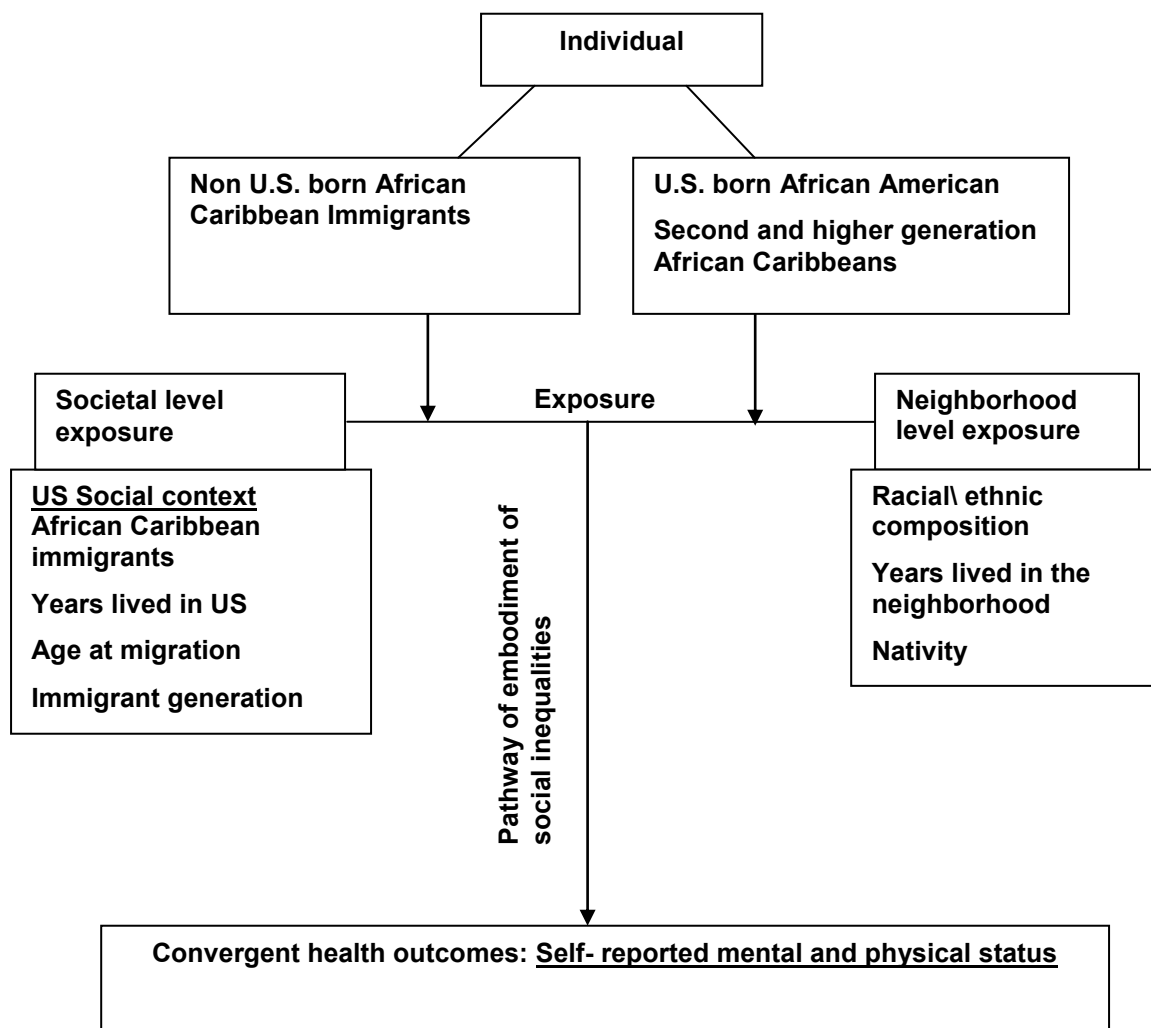


Figure2a. Framework for understanding convergence of health status among populations of African descent

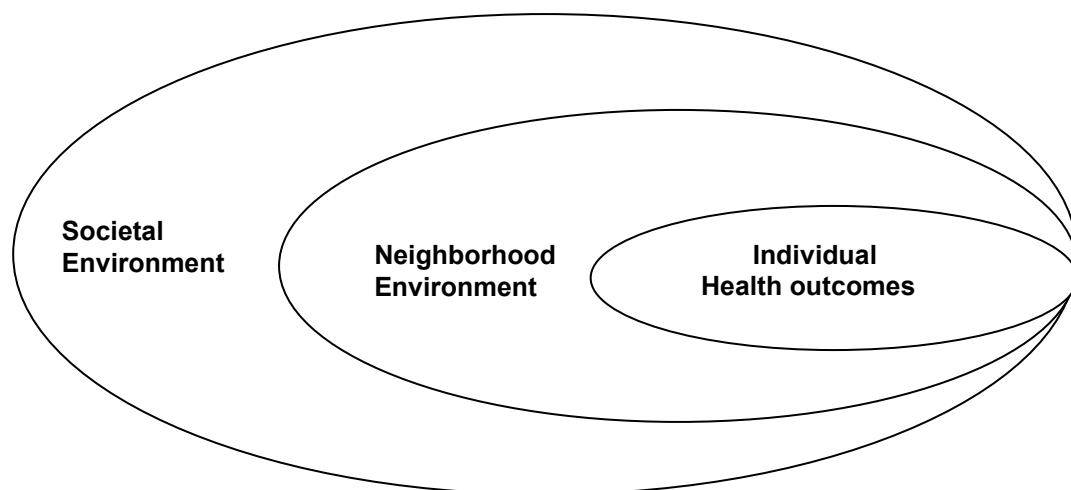


Figure 2b. Multi-level exposure to social inequality: a framework for the convergence of health among populations of African descent

Limitations of the Study

Limitations of this study must be taken into consideration when interpreting findings and future implications. The cross-sectional design of the NSAL limited the ability to explore the longitudinal associations between the neighborhood environment and health status. A cumulative context from which health trajectories and outcomes are understood can further illuminate social and generational gradients. Additional immigrant populations of African descent, such as those from the continent of Africa, or Europe could not be studied to assess whether similar associations between neighborhood and societal contexts and health status occur. Uniformity in the geographical boundaries by which respondents conceptualized and assessed their neighborhood environment was not established, therefore, individual responses could be based on different geographic assumptions of what is considered their “neighborhood.” Access to “neighborhood level” census block or census tract geographic identifiers would be useful for identifying

ethnic/racial composition gradients and their relation to health status as well as cross reference self-reported data about the neighborhood environment with objective information about the area. However, due to restricted access, these data were not obtainable for the present study.

Contribution to research

This study makes several contributions toward extending knowledge of the dimensions of the neighborhood social environment associated with the odds of poor health perceptions. The present study adds to the understanding intra-group differences and similarities that influence the degree to which individual and neighborhood characteristics affect health status of Black populations in the U.S. To the author's knowledge, there are no nationally representative quantitative studies published, on the comparative perceptions of neighborhood environments and self-reported health status by immigrant and U.S. born peoples of African Caribbean and African American descent. No prior studies have examined exposure to the neighborhood environment, nor perceptions of specific features of the neighborhood environment as factors that moderate the purported immigrant health advantage. The present study is able to determine migration factors associated with higher or lower odds of fair or poor physical and mental health using measures of exposure that illustrate the point of convergence in health between the two groups during the lifecourse.

Future Research

Future research should be directed toward qualitative and quantitative studies that examine more closely the process of health promotion or deterioration as a consequence of the physical and social environment, particularly among recent immigrants of African descent. What is known about culture, the process of acculturation, and the relevance of Black identities in the U.S. from existing qualitative studies must be extrapolated to the issue of health. An explicit examination of how acculturation, Black identities, and health status are related marks the future of health disparities research. The quantification of health outcomes is an important basis from which assertions about the existence of disparities are established; however, in order to move toward an understanding of how Black immigrants are specifically affected, their stories must be told. Narrations of the lived experience and processes of negotiation and adaptation will inform questions and suppositions such as the physical, behavioral, mental, or environmental effects of racial stratification and transnationalism on the life-course. Such analyses may reveal what social or cultural factors are considered to be health protective. Qualitative studies that explore health as it relates to life in an ethnic enclave, social cohesion and social networks within predominantly Black neighborhoods are important. Such studies present the potential for understanding the context from which non-U.S. born adults draw their conclusions about their perceived health status in relation to the expectations of health status compared to the country of origin. A careful analysis of the socialization process of successive generations within the context of features of the neighborhood environment will help to extend existing theories that explain associations

between nativity and physical health or perceived neighborhood environment and mental health.

Quantitative methods using multi-level hierarchical analyses to identify associations between characteristics of specific residential contexts where African Americans and African Caribbeans live would contribute to the understanding of the environmental influences on health. From these data, programs and policies may be informed to better suit the needs of the populations in greatest need by illustrating or testing the equity of the distribution of resources.

Stress and allostatic load are among the most recent areas of study that have been used to explain trends in immigrant health and the effects of institutionalized social structures on African American health, that are less easily quantified. “Status syndrome” offers another line of research whereby an analysis of social position may give insight on the mechanisms that contribute to the culmination of stressors that lead to poorer health status.

An important aim of future research in lieu of the varied factors, processes, and measures that shape the way health is perceived is to acknowledge the diversity of populations and the resulting diverse social contexts that influence health. Out of this acknowledgement, ways of conceptualizing linkages, measuring relevant factors that are culturally reflective of populations to be studied, can more aptly address implications that broader social contexts have on neighborhoods and individuals, rather than framing health and well being from a paradigm of meritocracy. Strategies to improve health status must be informed by institutionalized social structures that marginalize groups, and unique historical experiences of individuals and populations.

Policy Implications and Urban Development

The findings of the present study illuminate several potential implications for social and physical environments that impact on the health status of people of African descent. Rather than focusing on individual level behaviors, institutionalized progenitors of health disparities may be addressed by way of policy, urban development practices, and other strategic interventions. The first recommendation is to consider the value that neighborhood social and physical contexts hold, including those that may perpetuate social inequity. The history of urban renewal projects has demonstrated how the quest for improvements to the built environment can tear apart an essential component of emotional support and tangible resources that neighborhoods provide. Urban planning projects are not just about brick and mortar, but zoning policies, redistricting, and economic practices imply certain values and beliefs about communities and its people and have the potential for promoting inequitable distribution of resources. A fair distribution of resources regardless of census block, socioeconomic status, socioeconomic position, or racial composition of the neighborhood should be achieved. Careful consideration of the cost and benefits of planning projects should consider the social ramifications on quality of life. An authentic process of community engagement and partnership, along with policies and practices that allow people to thrive where they live are vital to the creation of sustainable and flourishing cities.

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APPENDIX A

Table A1
Cronbach's Alpha for Neighborhood Composite and Constructs

Composites and Their Components	Cronbach's Alpha
Social Cohesion	.80
People willing to help neighbors	
Close-knit neighborhood	
People in neighborhood can be trusted	
People in the neighborhood get along	
People in the neighborhood share same values	
Neighborhood Resources	.81
Park, playground, or open space	
Big supermarket	
Medical clinic or health service	
Bank or credit union	
Check cashing outlet	
Police station or substation	
Public library	

Note: Cronbach Alpha for Neighborhood Problems (neighborhood crime frequency, drug activity, and safety) was .35, thus showing no correlation

APPENDIX B

Table B1
Lifetime Mental Health Co-Morbidities, NSAL (2001-2003)

Co-morbidities
<p><u>Mood</u> (11)</p> <p>DSM_IED- Intermittent Explosive Disorder</p> <p>DSM_IEDH- Intermittent Explosive Disorder with hierarchy</p> <p>DSM_BIPOLARI – DSM IV Bipolar I</p> <p>DSM_BIPOLARII- DSM IV Bipolar II</p> <p>DSM_BIPOLARSUB- Bipolar Subthreshold</p> <p>ICD_DYS- Dysthymia</p> <p>ICD_DYSH- Dysthymia with hierarchy</p> <p>ICD_HYP- Hypomania</p> <p>DSM_MAN- Mania</p> <p>ICD_MDE- Severe Depressive Episode</p> <p>DSM_MDDH- Major Depressive Disorder with hierarchy</p> <p><u>Anxiety</u> (11)</p> <p>DSM_AGO- Agoraphobia without Panic Disorder</p> <p>DSM_AGP- Agoraphobia with Panic Disorder</p> <p>DSM_ASA- Adult Separation Anxiety Disorder</p> <p>DSM_SAD- Separation Anxiety Disorder</p> <p>ICD_PAT- Panic Attack</p> <p>DSM_PDS- Panic Disorder</p> <p>DSM_PTS- Posttraumatic Stress Disorder</p> <p>ICD_SO- Social Phobia</p> <p>DSM_GAD- General Anxiety Disorder</p> <p>DSM_GADH- General Anxiety Disorder with hierarchy</p> <p>DSM_SP- Specific phobia</p> <p><u>Substance Use</u> (6)</p> <p>DSM_ALA- Alcohol Abuse</p> <p>DSM_ALD- Alcohol Dependence</p> <p>DSM_ALAH- Alcohol Abuse with hierarchy</p> <p>DSM_DRA- Drug Abuse</p> <p>DSM_DRD- Drug Dependence</p> <p>DSM_TBD- Nicotine Dependence</p> <p><u>Other</u> (4)</p> <p>ICD_ADD- Attention Deficit Disorder</p> <p>ICD_CD-Compulsive Disorder</p> <p>ICD_ODD-Oppositional Defiance Disorder</p> <p>DSM_ODDH- Oppositional Defiance Disorder with hierarchy</p>

APPENDIX C

Table C1
Research Questions and Statistical Tests by Objective

	Research Questions	Statistical Test
Objective 1 Describe population differences in subjective assessments of neighborhood environment and self-reported health status by race/ethnicity	<p>1.1. What are the differences between African American, African Caribbean, and White respondents by a) self-rated physical and mental health status, and b) perceived neighborhood environment?</p> <p>1.2. Is there an association between a) perceived neighborhood environment and self-rated physical and mental health status, and b) how long respondents have lived in their neighborhood and self-rated physical and mental health status?</p> <p>1.3 Is the association between how long respondents have lived in their neighborhood and self-rated physical and mental health status moderated by a) race and ethnicity, and/or b) perceived neighborhood environment?</p>	<p>Descriptive statistics (frequency distribution, mean, median and standard deviation); logistic regression</p> <p>Bivariate analyses (chi-square, t-test, anova); logistic regression</p> <p>Logistic regression; interaction analysis</p>
Objective 2 Analyze population difference in subjective assessments of neighborhood environment and self-rated physical and mental health status among African Caribbean respondents by immigrant generational status	<p>2.1 What are the differences in a) perceived neighborhood environment, and b) self-rated physical and mental health status among African Caribbean respondents by immigrant generation status?</p>	<p>Descriptive statistics (frequency distribution, mean, median and standard deviation); chi-square; Logistic regression</p>

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