NEIGHBORHOOD DISORDER AND HEALTH: 
THE MEDIATING EFFECTS OF POWERLESSNESS AND DISTRESS

A dissertation submitted to Kent State University in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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May 2012
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ACKNOWLEDGEMENTS

An old proverb says “it takes a village to raise a child.” I think it also takes a village to complete a dissertation! The mentors, colleagues, friends, and family members who have helped me complete this journey were invaluable and plentiful. I graciously acknowledge my committee members: Dr. Elaine Hall, Dr. Stephen Webster, Dr. Richard Adams, Dr. Valerie Callanan, and Dr. David Hussey. Your understanding and patience with my extended dissertation timeline is sincerely appreciated.

I must specifically acknowledge three mentors. Elaine Hall improved my writing style and understanding of social inequalities immeasurably. I am forever grateful for her weekly encouragement and guidance. Dick Adams guided me through the neighborhood literature and greatly expanded my knowledge of neighborhoods and health. He also graciously took the reigns as my dissertation chair, making the shift seamless. Steve Webster contributed to my dissertation beyond expectation. Alongside with providing statistical guidance to a student far-removed from her statistical days, Steve stepped in as a leader when needed. I am so thankful for his kindness, patience, and endless support.

Dr. Roger Wojtkiewicz, Chair of Sociology at Ball State University, and Dr. Richard Serpe, Chair of Sociology at Kent State University were instrumental in helping me get my dissertation process back on track. Both gentlemen have also
continued to be champions for me throughout the dissertation process as well as in my other scholarly endeavors.

I am thankful for the support of my friends. Missy Fesler volunteered childcare when I needed extra work time. Monica Dunn helped me wade through path analysis calculations. My sister/friend, Hilary Casstevens’, contributions are too plentiful to list. Hilary’s invaluable help and unending support began long ago and continued through the day my document was completed.

My family has been an essential source of support for me. My sons, Ben and Sam, were patient with their oft working mom but also provided many welcome diversions to keep me feeling needed. My husband, Ty, kept our household running smoothly and supported me unconditionally throughout my long hours, meltdowns, and milestones. Most importantly, my mother, Carol, has supported me emotionally, financially, and every other way possible through this journey. I could not have completed my degree without her. I consider my graduation to be as much her accomplishment as mine.
CHAPTER 1

INTRODUCTION

Sociology has a long history of explaining the relationship between social factors and mental and physical health (Bloom 2002). A particular area of interest has been the impact of neighborhood characteristics on health. While the roots of environmental study can be traced back for hundreds of years, American study of the influence of neighborhoods began in earnest with the work of Chicago School scholars, such as Park, Burgess, and McKenzie (1925), Faris and Dunham (1939), and Wirth (1964). In recent years, medical sociology has had a resurgence of interest in the relationship between neighborhood conditions and health. My research is grounded in this resurgence.

How do perceived neighborhood conditions impact a person’s mental and physical health? Research shows that people living in neighborhoods that they perceive to be dangerous or high in neighborhood disorder have poorer mental and physical health outcomes than people living in neighborhoods they believe are safe or less disorganized (Browning, Cagney, and Wen 2003; Ellen et al. 2001; Hill, Ross, and Angel 2005; Hood 2005; Kim 2010; Matheson et al. 2006; Robert 1998; Ross and Mirowsky 2001; Wen et al. 2006). However, a direct relationship between neighborhood conditions and physical health has remained
weak (Dies Roux et al. 1997; Hill, Ross, and Angel 2005; LeClere et al. 1997; Robert 1998). Other mechanisms appear to play a significant role in explaining how neighborhood conditions affect the health of their residents. A better way to explain this association is by examining the mediating factors between neighborhood conditions and physical health. Specifically, I propose that perceived powerlessness and psychological distress mediate the relationship between perceived neighborhood disorder and self-reported physical health.

My research is a replication and extension of two exemplar articles that address the impact of neighborhood disorder on health. First, Hill, Ross, and Angel (2005) found that the effect of perceived neighborhood disorder on self-reported physical health was mediated by psychological distress and physiological response to stress. My research replicates their work by examining the relationship between perceived neighborhood disorder and self-reported physical health with the inclusion of psychological distress as a mediating variable. I am extending their work by utilizing multiple measures of self-reported physical health, both objective and subjective; adding an additional mediating variable, perceived powerlessness; and by using a more representative sample. Second, Downey and Van Willigen (2005) found that perceived neighborhood disorder and personal powerlessness increased levels of psychological distress. My research replicates their work by using the same dataset to examine the relationship between perceived neighborhood disorder, perceived powerlessness and psychological distress. I am extending their work by adding self-reported
physical health outcomes to their model and by measuring perceived internal and external powerlessness separately.

The first portion of my research is an examination of the mediating effects of perceived powerlessness and psychological distress on the relationship between perceived neighborhood disorder and self-reported physical health. Specifically, I employ the classic stress model framework (Pearlin et al. 1981) for my framework and use path analysis to examine the direct and indirect effects of my variables. I begin by reviewing past research on the sociological study of health. I continue by reviewing research on the relationship between neighborhood conditions and mental and physical health. Next, I explain the data collection and analytic methods used in this research. I then present my findings.

The second portion of my research shifts to the examination of whether the impact of perceived neighborhood disorder on health operates differently for minority and majority groups. In other words, what are the moderating effects of minority/majority social group membership on my model? A long-standing body of literature illustrates the many minority/majority differences in experiences, opportunities and outcomes, including differences in mental and physical health (see House 2001; Robert and House 2000; and Williams and Collins 1995 for reviews). Less research has examined whether health models operate differently between groups (Stafford et al. 2005). The social groups I have chosen to examine are race, class, and gender. Each group has been shown to have variation in health outcomes between the majority and minority subgroups.
I present the second portion of my research by reviewing past research on minority and majority subgroup differences in health. I focus on overall health differences for each minority subgroup, and then explore the literature on the moderating effects of each subgroup within the parameters of the paths in my model. Next, I explain the analytic methods used in this portion of the research. I then present my path model subgroup comparisons. I end by discussing overall conclusions from my research.
Sociologists have long been interested in the social aspects of health. From as far back as the writings of Marx and Engels (1848), Virchow (1849, in Bloom 2002), and Durkheim (1897), discussions of factors such as social group, poverty, and the environment have been linked to health outcomes. To this day, medical sociologists continue to expand and refine how we understand the ongoing disparities in health outcomes for various social groups. Because these disparities persist among groups, the understanding of the differences is as important today as ever.

Researchers interested in health continue to find variation in rates of illness and disease among social strata and social groups. For example, being poor is clearly linked with a variety of negative health outcomes such as obesity and increased heart disease. Women tend to live longer, but suffer from more illnesses in their lifetime. Minority racial groups, such as African Americans, are found to experience higher rates of hypertension.

The classic contribution of sociology is to help understand the links between broad social factors and individual experiences. The health disparities by group are well established; therefore, our role is to examine how the social
world impacts the individual experiences of physical health. To accomplish this goal, an expanding body of literature examines the impact of neighborhood environment on the health of its residents. To date, ample research suggests that residents in poorer, or disadvantaged, neighborhoods have worse health outcomes overall. Researchers are currently attempting to identify the means in which neighborhood environments impact health. Further, a growing area of research is now shifting beyond a simple direct relationship to explore more complex pathways to better explain the association between neighborhoods and health. In keeping with this growing and ever important area of medical sociology, I will explore how the social environment of one’s neighborhood impacts the physical well-being of its residents. Additionally, I will examine the literature concerning how the mediating effects of powerlessness and psychological distress influence the relationship between neighborhoods and health.

I begin by briefly explaining how medical sociologists understand health and the reasons it is important to maintain focus on social issues over individual actions that impact health outcomes. Following, I will discuss the sociological literature concerning the relationship between neighborhoods and health. In addition, I will outline two exemplary articles whose research I plan to replicate and expand. I will next explain the approach often used in current day research of health issues, known as the “stress model.” I will outline the basic structure of the stress model, and then expand to show how I will apply the model to my
research. Lastly, I will explore the literature concerning the basic concepts in my explanatory model.

**Overview of Understanding Health**

While the examination of the relationship between social factors and health has a long history, dating back prior to Hippocrates' work in 400BC, medical sociology often traces its beginnings to the mid-1800s. For example, Chadwick's *Report on Sanitation Conditions of the Laboring Population of Great Britain*, written in 1842 examined the public conditions of squalor and its impact on health (Bloom 1965). In 1848, Virchow claimed that medicine was a "social science" while researching the typhus fever epidemic (Bloom 2002). The foundation of modern epidemiology is often dated back to Snow's systematic study of the origins of a Cholera epidemic, where he found a contaminated water source to be the cause (Bloom 2002; Cockerham 2010). The term "medical sociology" was first used in 1894 by McIntire, when he defined the field as a science of "the social phenomena" of physicians, the regulation of the medical profession, and the interaction with human society (1894).

In the United States, medical sociology developed in earnest throughout the 1950s following World War II. While U.S. research had begun earlier on the relationship between communities and mental and physical health (Park, Burgess, and McKenzie 1925; Faris and Dunham 1939; Wirth 1945, each to be discussed in more depth later in the chapter), Parsons’ development of “the sick
role” (1951) provided new theoretical groundwork for understanding health. Parsons’ outlined expected behaviors and obligations of people who are sick, based firmly in structural functionalism, and how they must quickly seek medical attention in order to return to productive social lives. Hollingshead and Redlich’s Social Class and Mental Illness (1958) linked people’s social class with specific types of mental disorders.

The years that followed (1960s-1980s) saw a rise in a more social psychological approach to examining health. In much research, the focus had shifted to individual choices and lifestyles and the impact on their health. For example, a popular framework was the Health Behaviors Model (Rosenstock 1966) which outlined a flowchart containing a series of personal choices and behaviors (risky or healthy options), which ultimately led to one’s health to date. Cockerham (2007) stated that by that time period in medical sociology, the focus had shifted from “societal stressors” to “interpersonal stressors”. Similarly, Thoits’ (1995) review of stress research noted the lack of attention given to the links between macro and micro factors. Pescosolido and Kronenfeld (1995) called for a return to the examination of larger social forces in health. Link and Phelan (1989) argued for a return to the study of “fundamental” social causes of health problems such as socioeconomic status, but said that macrosociological factors had taken a backseat to more immediate, individual behavioral health issues, such as alcohol use or diet.
Although an individual focus persists in medical sociological work (Turner and Avison 2003; Pearlin et al. 2005), new research is emerging that examines macro social forces and their impact on individual mental and physical health. Medical sociologists have more recently gone beyond models explaining individual factors and health, by shifting their focus to understanding the complexities of pathways in which social factors influence physical health (Kronenfeld 2006; Phelan et al. 2004). For example, a growing body of literature has examined the impact of neighborhood disadvantage on mental and physical well-being (Browning and Cagney 2003; Downey and VanWilligen 2005; Hill, Ross, and Angel 2005). I will next explore the ongoing research on neighborhoods and health.

**Neighborhoods and Health**

The influence of neighborhoods upon their residents has a longstanding history within sociological research (Park, Burgess, and McKenzie 1925; Wirth 1945). Within the past twenty years, however, sociology has experienced a revival of interest in the influence of neighborhoods, especially on both mental and physical health of its residents (Kawachi and Berkman 2003). I next provide an overview of the historical roots of sociological study of neighborhoods as it pertains to health. I conclude by examining current day applications of neighborhoods in health research.
Neighborhoods and urban areas were actively researched in the early days of the Chicago School, and are characterized by the formative work of Park and colleagues (1925) and Wirth (1945), among others who recognized the impact of living environments upon the residents. Faris and Dunham (1939) conducted a pioneering study on the relationship between neighborhoods and mental health by examining the rates and types of mental disorder, as identified through pre-admission into private and public psychiatric hospitals, within specific regions of Chicago. Faris and Dunham found that more serious forms of mental illness, such as schizophrenia, occurred more frequently in disorganized communities where interactions with family and neighbors was low and social isolation was high. While critiqued for the simple methodology (Silver, et al. 2002), their investigation brought attention to the relationship between neighborhood and mental health and laid the groundwork for future research.

While today’s study of neighborhoods and mental health is more robust than the days of Faris and Dunham, researchers continue to find a significant relationship between the environment in which one lives and their mental health (see Sampson et al. 2002 for a detailed summary of current research). In many studies, residents of economically and socially disadvantaged neighborhoods are shown to experience higher anxiety, feelings of powerlessness, and depression (Aneshensel and Sucoff 1996; Downey and VanWilligen 2005; Geis and Ross 1998; Hill, Ross, and Angel 2005; Ross 2000; Ross and Mirowsky 2001; Wen Browning and Cagney 2003; Wilson and Kelling 1982) than residents of more
stable and/or affluent neighborhoods. For example, Aneshensel and Sucoff (1996) found that adolescents living in neighborhoods filled with crime and social disorder were more likely to suffer from depression. Geis and Ross (1998) found that adults living in disadvantaged neighborhoods had higher levels of perceived powerlessness.

Sociological research in this area has also expanded to explore the impact of neighborhood environment on physical health. For example, Diez Rouz and colleagues (2001) found that people living in neighborhoods characterized by low aggregate socioeconomic status (SES) had higher incidences of coronary heart disease. Similarly, Mahasin and colleagues (2008) found that people in areas with low walkability and less social cohesion had higher levels of arteriosclerosis. Cohen and colleagues (2000) examined areas with poor housing quality and high physical disarray, finding increased diagnoses of gonorrhea in these areas.

Looking at the recent literature on neighborhoods and both mental and physical health, I found two primary approaches to the operationalization of neighborhoods: objective measures and subjective measures of neighborhood advantage/disadvantage. Both objective and subjective measures of neighborhood environments have been found to have an impact on health. Some studies utilizing objective measures of neighborhood have examined the effects of neighborhood socioeconomic conditions on its residents (Diez Rouz et al. 2001; Franzini et al. 2005; Hood 2005; Kirby and Kaneda 2005; Mahasin et al. 2008).
2008; Massey 1996; Robert 1998; Wen Browning and Cagney 2003) as a proxy for neighborhood disadvantage. Neighborhood socioeconomic conditions are often measured by using census data to ascertain concentrations of poverty or affluence (Diez Rouz et al. 2001; Hill, Ross, and Angel 2005; Ross and Mirowsky 2001; Wen, Browning, and Cagney 2003). In general, residents of economically disadvantaged neighborhoods tend to have poorer overall health outcomes than those who live in affluent neighborhoods (Franzini et al. 2005; Ross and Mirowsky 2001). Research has uncovered various explanations for the difference in health outcomes. Those living in impoverished neighborhoods have fewer social and financial resources with which to address health issues, such as access to health care (Kirby and Kaneda 2005; Prentice and Pizer 2006; Robert 1998). Ross and Mirowsky (2001) found that residing in an impoverished neighborhood exposes residents to chronic stressors that lead to poor health.

Another objective approach to neighborhood research, called “broken windows,” (Wilson and Kelling 1982) determines the extent to which physical disarray is present. The “broken windows” approach asserts that people surrounded by visual cues of urban decay will be negatively impacted by these cues (Harcourt 2001; Sampson and Raudenbush 2004; Taylor 2001; Wilson and Kelling 1982) because residents view the unrepaired windows as indicators of loss of social control. Regardless of crime reduction, research has found that residents of areas with obvious urban decay feel less safe (Sampson and Raudenbush 1999; Wilson and Kelling 1982).
The second approach in the examination of neighborhoods has focused on the impact of the subjective perceptions of a neighborhood by its residents. For example, Skogan (1990) discussed how physical and social “incivilities” in a neighborhood, such as dilapidated houses and graffiti (physical) and drug use and noisiness (social), can create feelings of uncertainty and fear in the residents. Ross (2000) defined a nearly identical concept called “neighborhood disorder,” which is defined as a breakdown of social order and is recognized by the residents through perceived visual cues, both social and physical mechanisms. Physical disorder is categorized as observable physical deterioration within the neighborhood, such as graffiti, litter, or abandoned buildings. Social disorder is categorized as observable negative behaviors within the neighborhood, such as drug and alcohol use, loitering, and crime. To determine subjective perceptions of neighborhood disorder, or incivilities, researchers simply ask residents the extent to which these circumstances exist in their neighborhood. While a few studies have indicated that objective measures of neighborhood are more significant than subjective measures (MacIntyre and Ellaway 2003), evidence is growing that residents’ perceptions of neighborhood disorder also impact health. Recent studies have found neighborhood disorder to be detrimental to both mental and physical health (Downey and Van Willigen 2005; Hill, Ross, and Angel 2005; Hood 2005; Ross and Mirowsky 2001).

Two recent shifts in neighborhood and health research are the increase of multilevel analysis (Aneshensel 2009; Diez Roux 1998; Downey and VanWilligen
and combining both mental and physical health in research models (Hill, Ross, and Angel 2005). While the relationship of neighborhood with mental and physical health has been established, researchers have moved beyond the simplistic models to better understand the pathways from neighborhood environmental factors and health outcomes (Browning and Cagney 2003). For example, combining aggregate with subjective measures of neighborhood disadvantage has shown the unique effects of each (Robert 1999, Wen et al. 2006). Wen and colleagues (2006) found that neighborhood socioeconomic status (SES) impacts self-reported physical health through the pathways of individual SES and perceptions of neighborhood quality. Additionally, application of Pearlin and colleagues’ (1981, Pearlin 1989) classic “stress model” (as discussed previously) to this relationship has also elucidated the pathways between neighborhoods and health (Aneshensel 2009; Hill, Ross, and Angel 2005). For example, Hill, Ross and Angel (2005) found that perceived neighborhood disorder and self-reported health were mediated by psychosocial factors (fear and anxiety) and physiological responses (stress from fear and anxiety).

The future of neighborhood and health will clearly be focused on exploring the complex pathways in which neighborhood environments directly, as well as indirectly, impact the health of its residents. Application of multivariate and multilevel analysis will continue to clarify our understanding of this relationship.
Replication and Extension

Examining the recent health literature, I focused upon two articles that are excellent models of the current trends in neighborhood and health research. The articles by Hill, Ross and Angel (2005) and Downey and Van Willigen (2005) provided significant contributions to the understanding of the relationship between neighborhood disorder and physical health. In my dissertation, I plan to both replicate and extend their findings. I further discuss each article and associate them with my anticipated contributions.

Hill, Ross, and Angel

Hill, Ross, and Angel (2005) provided a complex examination of the relationship between neighborhood disorder and physical health. They hypothesized that the impact of neighborhood disorder on physical health was mediated by two factors. First, they hypothesized that the stresses of living in a disordered neighborhood led to psychological distress in the form of fear and anxiety. Second, they hypothesized that people reacted to the psychological distress through physiological responses. They proposed the resultant long-term exposure to the physiological responses of psychological distress caused the actual physical health problems. Therefore, it is not a direct link between disordered neighborhoods and physical health, but is mediated by both psychological stress and subsequent physiological responses.
To test their hypotheses, Hill, Ross, and Angel (2005) utilized a sample of disadvantaged women within the Welfare, Children, and Families Survey. They found that psychological and physiological distress served as mediating variables for the relationship between perceived neighborhood disorder and self-reported physical health. First, they demonstrated that perceived neighborhood disorder, in general, is negatively associated with self-reported health. Second, they introduced the mediating variables, psychological and physiological distress, into the model. Having both psychological and physiological distress variables present, the influence of disorder on self-reported health was reduced from its initial explanatory impact by 87%. Therefore, Hill, Ross, and Angel concluded that psychological and physiological distress appears to mediate the relationship between disorder and health. Further, the addition of physiological distress also reduced the explanatory impact of psychological distress on health. Depression and fearful anxiety both became insignificant predictors of health once physiological distress was included into the model.

**Downey and Van Willigen**

Downey and Van Willigen (2005) hypothesized that living near industrial activity has a negative impact on mental health. The impact is both direct and
mediated by perceived neighborhood disorder and perceived powerlessness.

Downey and Van Willigen (2005) extended the argument of Ross and colleagues (2000) by proposing that industrial activity is another contributor to perceived neighborhood disorder, similar to neighborhood crime or violence. Considering industrial activity as a contributor to perceived neighborhood disorder is important because perceived neighborhood disorder has been shown to increase psychological distress (Ross et al. 2000). Additionally, they hypothesized that the impact is more pronounced for racial minorities and the poor than for whites and the wealthy.

**Figure 2.2 Downey and VanWilligen (2005) Model**

To test their hypotheses, Downey and Van Willigen (2005) combined individual-level data from the 1995 Community, Crime, and Health Survey (CCH), tract-level data from the 1990 U.S. Census, and the 1995 Toxic Release Inventory data. Downey and Van Willigen (2005) found that respondents living in areas with a high number of industrial facilities perceived more neighborhood disorder, reported having less power over their lives and indicated more depressive symptoms than those with fewer facilities in their neighborhoods. Testing for the mediating effects of perceived neighborhood disorder and perceived powerlessness on the relationship between industrial activity and
depression, they found that each was significant and equally contributed to explaining the relationship between industrial activity and depression. Lastly, industrial activity produced fewer feelings of perceived powerlessness and fewer depressive symptoms among whites and people with higher incomes than for Hispanics, blacks and people with lower incomes.

Relevance to my Research

Hill, Ross, and Angel (2005) found that psychological and physiological distress served as mediating variables for the relationship between perceived neighborhood disorder and self-reported physical health. I replicate their study by also using perceived neighborhood disorder as my independent variable, psychological distress as my mediating variable, and self-reported physical health as my outcome variable. I extend their research by using perceived powerlessness as an additional mediating variable. Also, Hill, Ross, and Angel utilized a single question as their measure of health. I incorporate a second health variable to capture more objective elements of one’s physical well-being—the number of diagnoses one possesses.

Hill, Ross, and Angel’s (2005) sample was entirely comprised of disadvantaged females. Additionally, there was limited racial variation, with an overrepresentation of blacks and Hispanics. While their purpose was to examine variations within this population, I use a more diverse sample to increase the generalizability to the larger population and for social subgroup comparisons.
Downey and Van Willigen (2005) found that the impact of living near industrial activity on mental distress is mediated by perceived neighborhood disorder and perceived powerlessness. In my research, I use a portion of their model to expand our understanding of the relationship between perceived neighborhood disorder and self-reported physical health. Additionally, they found that perceived neighborhood disorder had a direct effect on perceived powerlessness. Further, perceived powerlessness had a direct effect on psychological distress. Using perceived neighborhood disorder as my independent variable, I replicate the examination of direct effects on perceived powerlessness and psychological distress. In addition, I expand their model by introducing self-reported health as the outcome variable. They adequately established the explanatory impact of perceived neighborhood disorder and perceived powerlessness on psychological distress. Therefore, I elaborate on the model by testing for the mediation of perceived powerlessness and psychological distress when exploring the effects of perceived neighborhood disorder on self-reported health.

Downey and Van Willigen (2005) utilized the Crime, Community, and Health Survey data for their study. I, too, plan to utilize this dataset. The CCH dataset will allow me to replicate their variables of perceived neighborhood disorder, perceived powerlessness, and psychological distress while expanding the model to find explanations of poor self-reported health—a variable not examined by Downey and Van Willigen.
As discussed in the previous sections, medical sociologists are turning to more complex models to better understand the relationships between social factors and health. A current approach being widely applied to both mental and physical health research is Pearlin and colleagues’ (1981, Pearlin1989) “stress model.” I, too, have chosen to utilize the stress model in this study. I will describe the structure and rationale of this model.

**Stress Model**

The classic stress model (Pearlin et al. 1981) has become a commonly used framework of incorporating mediating variables to explain direct and indirect relationships among social factors and health (see figure 2.3). While traditionally used to explain mental health, this model can easily be utilized to explain physical health outcomes as well. Pearlin and colleagues’ explanation of the stress process is a classic path model for understanding the manner in which stress manifests itself and impacts lives of those experiencing it. The model outlines the relationship between the sources of stressors, factors that mediate stressors, and the manifestations of stressors. Next, I will discuss each element of the stress model.

**Figure 2.3 Classic Stress Model**

<table>
<thead>
<tr>
<th>Stressors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Events</td>
</tr>
<tr>
<td>Chronic Strains</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mediating Factors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping</td>
</tr>
<tr>
<td>Social Support</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Manifestations:</th>
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<tbody>
<tr>
<td>Emotional</td>
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<tr>
<td>Physical</td>
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</tbody>
</table>
Stressors. The sources of stressors can be separated into two categories—life-events and chronic strains (Pearlin et al. 1981). Life events are discrete events or experiences that lead to stress because they require immediate readjustment for the individual experiencing them, such as divorce. Chronic strains are generally understood as persistent and ongoing stressful life circumstances, such as poverty or discrimination. Research supports the argument that chronic strains are more damaging to both mental and physical health than life events (Avison and Turner 1988; Pearlin 1989; Thoits 1995; Wheaton 1991). Because my dissertation will focus on a chronic strain type of stressor, I will now discuss chronic strains in more detail.

Chronic strains can exist in various areas of one’s life. Ongoing strain is often associated with role demands, such as role overload within the family or at work (Karasek 1979; Pearlin et al. 1981). Chronic strain can also result from ongoing lack of resources resultant from poverty (Wijnberg et al. 2006). Chronic strains more strongly impact psychological distress than individual life events due the uncertainties associated with the strain (Repetti and Wood 1997; Serido, Almeida, and Wethington 2004). People exposed to chronic strains typically do not know when or whether the condition will be remedied (Repetti and Wood 1997). Also, chronic strains are particularly distressing because individuals often feel powerless to change their stress-inducing circumstances (Downey and Van Willigen 2005; Pearlin 1983; Turner and Turner 2005). Environmental factors can be considered chronic strains when they are coupled with the lack of ability
to remove oneself from the environment. Downey and Van Willigen (2005) cited exposure to neighborhood disorder, living in areas rife with crime or decay, as a chronic strain due to its ongoing treacherous nature. I also consider neighborhood disorder to be a chronic strain.

*Mediating Factors.* It is not merely exposure to stressful events that can cause distress. In general, the presence of mediating factors may serve to buffer the stressful experience. Specifically, the two primary mediating factors outlined in the original stress model are coping and social support (Pearlin et al. 1981). In my research, I am focusing on coping mechanisms, which are the most widely researched mediating factor of (Downey and VanWilligen 2005; Pearlin 1983; 1989; Pearlin et al. 1981; Thoits 1995; 2006; Wheaton 1980). An individual’s ability to cope with stressful situations incorporates his ability to modify the situation, modify its meaning, or manage remaining in the stressful situation. For example, when used in stress models one’s sense of control over his environment has been shown to reduce distress (Downey and Van Willigen 2005; Pearlin et al 1981; Thoits 2006; Wheaton 1980). I will be examining the mediating effects of perceived powerlessness and psychological distress.

*Manifestations.* Within the stress model, manifestations of stress are the resultant emotional and physical responses to life events and chronic strains, after mediating factors have been taken into account (Pearlin 1989; Pearlin et al. 1981). Emotional response to stress exposure has most widely been researched through depressive symptomology, showing that the more stressors one
encounters the more depressive symptoms one will report (Downey and Van Willigen 2005; Hill, Ross, and Angel 2005; Pearlin 1989; Pearlin et al. 1981; Ross 2000; Ross and Mirowsky 2001). Equally important yet less rigorously researched is the link between stressors and physical health, which shows stress impacts physical health through psychological distress (Hill, Ross, and Angel 2005; Thoits 1995).

**My Explanatory Model**

To contribute to the current research on the relationship between neighborhoods and health, I am examining the mediating effects of perceived powerlessness and psychological distress on the relationship between perceived neighborhood disorder and self-reported physical health. My model is built from variables that have been shown to impact physical health. I have incorporated both mental and physical health measures in my model. I examine not only the direct, but the indirect effects of perceived neighborhood disorder on physical health. Lastly, I utilized new configurations of some of the variables employed by Ross, Hill and Angel (2005) and Downey and VanWilligen (2005) to facilitate my replication and extension of their articles. I will discuss my variables in more detail.
**Self-Reported Health**

My dependent variable is self-reported physical health. Early research models examined how social factors impacted either mental or physical health. Today, many models incorporate the relationship *between* mental and physical health. For example, whereas the stress model initially utilized mental health as the dependent variable, much research has shifted mental health to a mediating position with physical health being the dependent variable (Hill, Ross, and Angel 2005). Within sociological research, a commonly used measure of physical health is self-rated health (Hill, Ross, and Angel 2005; Wen and Cagney 2003). One’s own perception of health can be more telling than actual measures of health outcomes because it captures the actual experience of the individual (Wen and Cagney 2003). I include self-reported overall health as my first health indicator. In addition, I plan to expand my measures of health by including an index of the number of physical health diagnoses one possesses. Past research found a significant relationship between the number of diseases one has and neighborhood disadvantage (Robert 1998). Utilizing these specific two measures of health enables me to incorporate both a subjective and an objective measure of physical health into my research.
**Perceived Neighborhood Disorder**

My independent variable is perceived neighborhood disorder. As previously discussed, neighborhood disorder is defined as a breakdown of social order and is recognized by the residents through perceived visual cues, both social and physical (Geis and Ross 1998; Ross 2000; Ross and Mirowsky 2001; Skogan 1990). Neighborhood disorder exists when visible signs of social order are absent. Alternatively, neighborhood order is characterized by observably safe and lawful areas. Both order and disorder are measured by resident perceptions of their surroundings (Ross 2000). Neighborhood disorder is identified through both physical and social mechanisms (Downey and Van Willigen 2005; Hill, Ross, and Angel 2005; Ross 2000). Physical disorder is categorized as observable physical deterioration within the neighborhood, such as graffiti, litter, or abandoned buildings. Social disorder is categorized as observable negative behaviors within the neighborhood, such as drug and alcohol use, loitering, and crime. Studies have found neighborhood disorder to be detrimental to both mental and physical health (Hill, Ross, and Angel 2005; Hood 2005; Ross and Mirowsky 2001).

Continual exposure to the threats and fear associated with neighborhood disorder can directly and indirectly impact physical health through the physiological reactions to the perceived disorder. The ongoing physiological response to psychological distress can create detrimental physical health outcomes for those exposed to long-term stressors, such as neighborhood
disorder (Hill, Ross, and Angel 2005; Hood 2005; Ross and Mirowsky 2001; Taylor, Repetti, and Seeman 1997). Medical research shows that threatening environments can directly weaken physical health by creating negative immediate response symptoms, reducing immunities to illnesses, and exacerbating chronic illnesses (Hill, Ross, and Angel 2005). In response to the fear associated with neighborhood disorder, residents experience psychological distress, oftentimes remaining in a “fight or flight” physical state. During a fight or flight response, the parasympathetic nervous system is stimulated to encourage quick reaction to physical threats. The body experiences acceleration of heart and lungs, slowing of the digestion processes, and blood vessel dilation to ready for physical response. Even though this state might be a useful reaction to immediate physical threats, continually experiencing a fight or flight response can cause deterioration to physical health. People who are regularly in the fight or flight response can experience immunity suppression, stomach ailments, diarrhea, anxiety disorders, and insomnia.

**Perceived Powerlessness**

Rooted in the longstanding sociological concept of alienation, perceived powerlessness has been widely researched and associated with multiple social and individual outcomes, predominantly psychological well-being (Fischer 1973; Pearlin et al 1981; Seeman and Anderson 1983; Seeman and Seeman 1983; Pearlin 1989; Mirowsky and Ross 1990; Geis and Ross 1998; Ross and
Mirowsky 2002; Downey and Van Willigen 2005; Fiori et al. 2006). I will briefly explain the sociological history of the conceptualization of perceived powerlessness, discuss similar terms that are utilized in sociology, psychology, and social psychology, then specifically define my conceptualization of perceived powerlessness.

While simply defined as the experience of disassociation or detachment from society, considerable debate concerning how to best clarify and measure alienation has persisted (Seeman 1959; Fischer 1976). A primary early quandary concerning the measurement of alienation was whether it was single or multidimensional in nature. Seeman effectively argued that it was imperative to separate different components of alienation to avoid conceptual confusion and to improve unique empirical measures. Specifically, he distinguished five distinct types of alienation: powerlessness, meaninglessness, normlessness, self-estrangement, and isolation. Each type captures a particular aspect of the larger concept (for a detailed explanation of each, see Seeman 1959). For my purposes, I focus on powerlessness.

Seeman defined powerlessness as “the expectancy or probability held by the individual that his or her own behavior cannot determine the occurrence of the outcomes, or reinforcements, he seeks” (p. 784). He clearly distinguished his notion of perceived powerlessness from the Marxian idea of alienation by focusing solely on the perception of powerlessness from the actor’s perspective. Whether one truly has control over a situation is irrelevant to his or her
perception of powerlessness. For example, residents might not have the power to block a hazardous plant from relocating nearby; they are truly powerless to stop the political process of zoning and building. However, it is not until they hold the belief that they are powerless to change events in their life that perceived powerlessness potentially affects their mental well-being. It is this personal belief that connects objective conditions with emotional responses (Downey and Van Willigen 2005; Geis and Ross 1998; Mirowksy and Ross 2003).

Rotter (1966) built upon the work of Seeman by developing the “locus of control” theory which has been widely used in both sociological and psychological research. In general, locus of control refers to a person’s belief in what controls events in his or her life. Rotter’s locus of control incorporated two dimensions of control—internal and external. Internal locus of control is understood as the belief that one holds the power to change or determine outcomes in one’s life. Alternatively, external locus of control is the extent to which a person believes that external forces control the outcomes in one’s life. For example, Rotter’s locus of control scale includes items such as asking whether a respondent agrees with the statement, “People's misfortunes result from the mistakes they make.” Those with an internal locus of control would agree with the statement, whereas those with an external locus of control would disagree. Rotter’s theory of internal and external locus of control is the basis for my conceptualization of internal and external powerlessness, having both been
an expansion of Seeman’s general concept of powerlessness and operationalized as a two-dimensional measure.

Concepts similar to powerlessness are found in various forms within sociological and psychological research. For example, akin to control and powerlessness are the concepts of mastery (Pearlin 1983), instrumentalism (Wheaton 1980), and self-efficacy (Bandura 1986; Gecas 1989). When examining how the concepts are defined, utilized within models, and measured, the differences among them are sometimes indiscernible (Mirowsky, Ross, Van Willigen 1996; Fiori et al. 2006). This complex conceptual landscape makes the literature confusing and difficult to navigate. To exacerbate the confusion, some interpretations of powerlessness are unidimensional in their framework (Bandura 1986; Gecas 1989; Pearl 1983), while others are multidimensional (Downey and VanWilligen 2005; Mirowsky and Ross 1990; Ross et al. 2001; Ross and Geis 1998; Rotter 1966). I will briefly explore each approach to powerlessness.

Within social psychological research, a trend is to examine only the internal dimension of powerlessness. Again, while the terminology is not the same, the conceptualization is quite similar to perceived internal powerlessness. For example, Pearl (1983; 1989) has extensively researched the concept of mastery, which is the level to which one has control over his life. Pearl has found that low levels of mastery are rooted in exposure to stressful life events—the more stressful events someone experiences, the less apt he is to have a sense of mastery. Similarly, Bandura (1977) and Gecas (1989) have both
researched the concept of self-efficacy, which is defined as belief that one has the ability to produce specific results in events that affect his life. More focused upon cognitive theories, Gecas built his conceptualization of self-efficacy upon Rotter’s (1966) internal locus of control.

More closely applying Rotter’s (1966) theory of locus of control, another recent approach is to expand the conceptualization of perceived powerlessness to two dimensions—internal and external. For example, Wheaton’s (1980) construction of instrumentalism and fatalism incorporates both dimensions of powerlessness. Similar to internal powerlessness, fatalism is the belief that one is powerless to change circumstances. Similar to external powerlessness, instrumentalism is the notion that one can be instrumental in changing life circumstances. Also, Mirowsky and Ross (1990) combined Rotter’s control theory with Beck’s (1972) defense theory, to incorporate both an internal and external measure of perceived powerlessness. They and others have continued to utilize this conceptualization of perceived powerlessness to capture both aspects of powerlessness (Downey and VanWilligen 2005; Dunn 2007; Ross and Geis 1998; Neff and Suizzo 2006; Yves et. al. 2007). In sum, whether the term is utilized to examine both the internal and external dimensions of powerlessness or solely internal powerlessness, the research continues to inform us about the impact of perceived powerlessness on people’s lives.

In my research, I incorporate the two dimensions of powerlessness by differentiating between internal and external powerlessness. Perceived internal
powerlessness is generally defined as the extent to which people believe they have the power to change or determine their life circumstances. Perceived external powerlessness is generally defined as the extent to which people believe that forces beyond their control have the power to change or determine their life circumstances.

**Psychological Distress**

My second mediating variable, psychological distress is simply defined as an unpleasant subjective mental state (Mirowsky and Ross 2003). The ongoing physiological response to psychological distress creates detrimental physical health outcomes, such as reduced immunities (Hill, Ross, and Angel 2005). Continued exposure to social and/or personal stressors has been shown to increase psychological distress (Downey and Van Willigen 2005; Hill, Ross, and Angel 2005; Pearlin et al. 1981; Turner 2003). The social stressor of interest to my research is perceived neighborhood disorder. The chronic strain of being regularly exposed to perceived neighborhood disorder is psychologically distressing, leading to higher levels of depression (Downey and Van Willigen 2005; Hill, Ross, and Angel 2005; Hood 2005; Ross and Mirowsky 2001; Taylor, Repetti, and Seeman 1997; Turner 2003).
Hypotheses and Model

In my model (Figure 2.4), I am using the classic stress model (Pearlin, et al 1981) to examine the impact of the chronic stressor, perceived neighborhood disorder, on the manifestation of self-reported physical health. The two mediators I consider to be important are perceived powerlessness and psychological distress. Therefore, I propose that the chronic strain of perceived neighborhood disorder has a direct negative impact on self-reported physical health. The chronic strain of perceived neighborhood disorder also has a direct positive impact on feelings of powerlessness and subsequent psychological distress. Lastly, the relationship between perceived neighborhood disorder and self-reported physical health is mediated by perceived powerlessness and psychological distress.

In summation, below I list my research question and hypotheses.

Research Question:

How do feelings of powerlessness and psychological distress mediate the effects of perceived neighborhood disorder on self-reported physical health?
Hypotheses:

Direct Effects:

1. People who perceive greater neighborhood disorder are more likely to experience poorer self-reported physical health than people who perceive less disorder.

2. People who perceive greater powerlessness are more likely to experience poorer self-reported physical health than people who perceive less powerlessness.

3. People who perceive greater psychological distress are more likely to experience poorer self-reported physical health than people who perceive less distress.

4. People who perceive greater neighborhood disorder are more likely to experience greater perceived powerlessness than people who perceive less disorder.

5. People who perceive greater neighborhood disorder are more likely to experience psychological distress than people who perceive less disorder.

6. People who perceive greater perceived powerlessness are more likely to experience psychological distress than people who perceive less perceived powerlessness.

Indirect Effects:

7. The impact of perceived neighborhood disorder on self-reported physical health is mediated by perceived powerlessness.

8. The impact of perceived neighborhood disorder on self-reported physical health is mediated by psychological distress.

9. The impact of perceived neighborhood disorder on psychological distress is mediated by perceived powerlessness.

10. The impact of perceived powerlessness on self-reported physical health is mediated by psychological distress.

11. The impact of perceived neighborhood disorder on self-reported physical health is mediated by perceived powerlessness and psychological distress.
CHAPTER 3

METHODS

This chapter contains five sections to discuss the preparation of my data and my analysis plan. I begin by describing the sample I utilized in my research. Next, I outline the specific items I used to create my model variables. I then describe the control variables I plan to use in the research. Further, I spend time explaining the factor analysis I performed to create variables. I then explain the indices and scales I created. I conclude by explaining my analysis plan.

Sample

For my research, I utilized the 1995 wave of the 1995/1998 Survey of Community, Crime, and Health (further referred to as CCH) dataset for my research (Ross and Britt 1995). I obtained this publicly accessible dataset from the Interuniversity Consortium for Political and Social Research (ICPSR). The Survey Research Laboratory at the University of Illinois conducted the research, with Catherine Ross and Chester Britt serving as co-principal investigators. The research was funded by a grant from the National Institute of Health (Grant Number RO1 MH51558). According to the co-principal investigators, the purpose of study was to “examine the relationship between neighborhood disadvantage
and physical and mental health, (over and above individual socio-economic characteristics), in order to develop a measure of perceived neighborhood disorder and to explore its role in explaining that relationship, (Ross and Britt 1995).

I used a series of closed-ended, individual-level questions from the first wave of data within the CCH survey. The whole dataset contains two waves of individual-level variables, collected in 1995 and 1998, as well as community-level variables created from 1990 Census data. I have chosen to limit my research to this first wave of the dataset for two reasons. First, I wanted the largest sample size possible to maximize overall statistical power and wave one had a significantly larger sample size (n=2482) than wave two (n=1332). Second, I wanted to ensure that the size of subgroups was proportional to their size in the larger population. For example, I was concerned about the low number of African Americans in the second wave. Wave one contained two hundred and twenty African American respondents (8.9 %), whereas wave two only contained ninety-two African American respondents (6.9%).

Telephone surveys, completed by 2,482 respondents, were limited to English speaking adults, age 18 and over. Households were selected by a random-digit dialing Waksberg method (1978). To further ensure random selection, the adult in the household with the most recent birthday was selected as the respondent. A maximum of ten callbacks were allowed to complete the
interview after initial contact was made. Seventy-three percent of the selected respondents completed the survey.

Variables and Operational Definitions
In this section, I discuss the variables utilized in my research. Here I describe the items from the CCH dataset (Ross and Britt 1995) in their original form. For my analysis, however, I transformed some of these items into an index or scale. I will give details concerning my index and scaling procedures in the following section. I begin this latter section with an explanation of the dependent variable, continue with the independent variable, and conclude with an explanation of the mediating variables in my model.

Dependent Variable — Self-Reported Physical Health
For my dependent variable, I used two measures of self-reported physical health. For my first measure, I included a global subjective measure of self-reported overall health. Respondents were asked, “Would you say your health is…” (1) “very good,” (2) “good,” (3) “satisfactory,” (4) “poor,” or (5) “very poor.” See the table below for detailed statistics (Table 3.1)
Table 3.1 Descriptive Statistics for Self-Reported Overall Health (N=2473)

<table>
<thead>
<tr>
<th>Question/Response</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good (1)</td>
<td>1057</td>
<td>43</td>
</tr>
<tr>
<td>Good (2)</td>
<td>1008</td>
<td>41</td>
</tr>
<tr>
<td>Satisfactory (3)</td>
<td>319</td>
<td>13</td>
</tr>
<tr>
<td>Poor (4)</td>
<td>70</td>
<td>3</td>
</tr>
<tr>
<td>Very Poor (5)</td>
<td>19</td>
<td>1</td>
</tr>
</tbody>
</table>

Mean=1.78, Standard Deviation=.831

For my second health measure, I used the number of health conditions with which the respondent had been diagnosed. I utilized a series of yes/no questions that inquired whether the respondent had ever been diagnosed with heart disease, high blood pressure, lung disease, breast cancer, unspecified cancer, diabetes, arthritis rheumatism, osteoporosis, allergies/asthma, and/or digestive problems. I used these items to create a summative index, to be discussed in the "Indices and Scales" section.

**Independent Variable — Perceived Neighborhood Disorder**

I used the items that are utilized in the Ross-Mirowsky Perceived Neighborhood Disorder Scale (Ross and Mirowsky 1999) to determine respondents' perceptions of disorder in their neighborhood. These measures include items for both perceived physical and social disorder. To measure perceived physical disorder, respondents were asked the extent they agreed or disagreed with the statements: (1) “There is a lot of graffiti in my neighborhood”; (2) “My neighborhood is noisy”; (3)"Vandalism is common in my neighborhood”; (4) “There are a lot of abandoned buildings in my neighborhood”; (5) “My
neighborhood is clean”; and (6) “People in my neighborhood take good care of their houses and apartments.” To measure perceived social disorder, respondents were asked the extent they agreed or disagreed with the statements: (1) “There are too many people hanging around on the streets in my neighborhood”; (2) “There is a lot of crime in my neighborhood”; (3) “There is too much drug use in my neighborhood”; (4) “There is too much alcohol use in my neighborhood”; (5) “I’m always having trouble with my neighbors”; (6) “In my neighborhood people watch out for each other”; (7) “My neighborhood is safe”; (8) “I can trust most people in my neighborhood”; and (9) “Police protection is adequate.” All statements had response categories on a four point Likert scale ranging from (1) “strongly agree” to (4) “strongly disagree.” I utilized factor analysis to create a neighborhood disorder scale, to be discussed in the “Indices and Scales” section.

**Mediating Variables — Perceived Powerlessness and Psychological Distress**

*Perceived Powerlessness.* To measure perceived powerlessness, I used a series of items in which respondents were given statements that claimed or refuted personal control over good or bad outcomes (Mirowsky and Ross 1991). Respondents were asked the extent they agreed or disagreed with the statements: (1) “The really good things that happen to me are mostly luck”; (2) “There’s no sense planning a lot—if something good is going to happen it will”;
(3) “Most of my problems are due to bad breaks”; (4) “I have little control over the bad things that happen to me”; (5) “I am responsible for my own successes”; (6) “I can do just about anything I really set my mind to”; (7) “My misfortunes are the result of mistakes I have made”; and (8) “I am responsible for my failures.”

Response categories provided were on a four point Likert scale ranging from (1) “strongly agree” to (4) “strongly disagree.” I utilized factor analysis to create two powerlessness scales, to be discussed in the “Indices and Scales” section.

Psychological Distress. To measure psychological distress, I utilized the items contained in a modified version of the Center for Epidemiological Studies Depression (CES-D) scale (Radloff 1977; Ross and Mirowsky 1984). Respondents were asked: “How many days (0-7) during the past week have you…” (1) “felt you couldn’t get going,” (2) “felt sad,” (3) “had trouble getting to sleep or staying asleep,” (4) “felt that everything was an effort,” (5) “felt lonely,” (6) “felt you couldn’t shake the blues,” (7) “had trouble keeping your mind on what you were doing,” (8) “enjoyed life,” (9) “felt happy,” and (10) “felt hopeful.” I used these items to create a summative index to be discussed in the “Indices and Scales” section.

Individual/Family Control Variables

I included the following eight individual and family level control variables because each has been shown to have an influence on mental and physical health outcomes in previous research (Hill et al. 2005; Horwitz and Scheid 1999;
Mirowsky and Ross 2003; Ross and Bird 1994; Seeman, Seeman, and Budros 1988; Williams and Collins 1995; Williams and Collins 2001). Additionally, the control variables I selected are the same individual and family level control variables used by Downey and Van Willigen (2005) which further enables me to replicate their findings. The variables are:

1) Sex responses were 1 for male and 2 for female. I created a dummy variable coding sex to 0 for female and 1 for male.

2) Age responses were given as year of birth. I recoded the variable to reflect actual age in years at the time of survey, by subtracting the year of birth from the year of survey completion.

3) Education was measured by asking the highest year of education completed.

4) Race was measured by asking the respondents “Are you…” (1) “White,” (2) “Black or African American,” (3) “Asian or Pacific Islander,” (4) “Native American or Alaskan Native,” (5) “Something else,” or (6) “Hispanic/Spanish/Puerto Rican/Latin American.” Because only 158 respondents cumulatively reported being a race other than European American (1-White) or African American (2-Black or African American); therefore, I omitted them from my analysis.

5) Family Income was measured as the amount earned before taxes, recorded in dollars. Respondents who did not give an exact amount were asked a series of more than/less than questions in increments of ten thousand dollars, up to $50,000 when they asked if the family income was higher than $50,000, higher than $70,000 (if needed), and then (if needed) higher than $100,000 . From
these questions, I computed an income variable with the categories, (1) “$10,000 or less,” (2) “$10,001 to $20,000,” (3) “$20,001 to $30,000,” (4) “$30,001 to $40,000,” (5) “$40,001 to $50,000,” (6) “$50,001 to $75,000,” (7) “$75,001 to $100,000,” and (8) “over $100,000.” I then collapsed the variable that contained actual dollar amounts to match these same categories. Lastly, I combined the two variables to create a single income variable with the previously mentioned categories.

6) Marital Status was measured by asking the respondent “Are you…” (1) “Married,” (2) “Living together with someone as married,” (3) “Widowed,” (4) “Divorced,” (5) “Separated,” or (6) “Never been married.” I collapsed the categories of this variable into “never married” (6), “married or living as married” (1 or 2), and “previously married” (3, 4, or 5), which included widowed, divorced, and separated. I created three dummy variables for never married coded as 1(else 0), married coded as 1 (else 0), and previously married coded as 1 (else 0).

7) Number of Children in the Household was measured by asking how many children under the age of 18 are living in their home.

8) Employment Status was measured by asking the respondents for their current employment status. Responses were given as (1) “Disabled,” (2) “Retired,” (3) “Student,” (4) “Unemployed,” (5) “Keeping House,” (6) “Employed Full-time,” or (7) “Employed Part-time.” I collapsed the categories into “employed full time” (6)
and “not employed full time” (1, 2, 3, 4, 5, or 7) which included all other responses. I created a dummy variable coded 1 for employed full-time (else 0).

Table 3.2 Descriptive Statistics for the Discrete Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European American</td>
<td>2087</td>
<td>85%</td>
</tr>
<tr>
<td>African American</td>
<td>220</td>
<td>9%</td>
</tr>
<tr>
<td>Other</td>
<td>158</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>1015</td>
<td>41%</td>
</tr>
<tr>
<td>Women</td>
<td>1467</td>
<td>59%</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>1324</td>
<td>54%</td>
</tr>
<tr>
<td>Living as Married</td>
<td>70</td>
<td>3%</td>
</tr>
<tr>
<td>Widowed</td>
<td>229</td>
<td>9%</td>
</tr>
<tr>
<td>Divorced</td>
<td>284</td>
<td>11%</td>
</tr>
<tr>
<td>Separated</td>
<td>56</td>
<td>2%</td>
</tr>
<tr>
<td>Never Married</td>
<td>506</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10,000 or less</td>
<td>172</td>
<td>8%</td>
</tr>
<tr>
<td>$10,001-$20,000</td>
<td>283</td>
<td>13%</td>
</tr>
<tr>
<td>$20,001-$30,000</td>
<td>356</td>
<td>17%</td>
</tr>
<tr>
<td>$30,001-$40,000</td>
<td>331</td>
<td>16%</td>
</tr>
<tr>
<td>$40,001-$50,000</td>
<td>251</td>
<td>12%</td>
</tr>
<tr>
<td>$50,001-$75,000</td>
<td>415</td>
<td>20%</td>
</tr>
<tr>
<td>$75,001-$100,000</td>
<td>181</td>
<td>9%</td>
</tr>
<tr>
<td>$100,001 and over</td>
<td>124</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disabled</td>
<td>62</td>
<td>3%</td>
</tr>
<tr>
<td>Retired</td>
<td>379</td>
<td>15%</td>
</tr>
<tr>
<td>Student</td>
<td>74</td>
<td>3%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>49</td>
<td>2%</td>
</tr>
<tr>
<td>Keeping House</td>
<td>215</td>
<td>9%</td>
</tr>
<tr>
<td>Employed Full Time</td>
<td>1407</td>
<td>57%</td>
</tr>
<tr>
<td>Employed Part Time</td>
<td>259</td>
<td>10%</td>
</tr>
</tbody>
</table>
Table 3.3 Descriptive Statistics for the Continuous Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>St. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in Years</td>
<td>2454</td>
<td>18</td>
<td>92</td>
<td>45.1</td>
<td>17.112</td>
</tr>
<tr>
<td>Education in Years</td>
<td>2464</td>
<td>1</td>
<td>20</td>
<td>13.8</td>
<td>2.544</td>
</tr>
<tr>
<td>Children under 18 in HH</td>
<td>2480</td>
<td>0</td>
<td>10</td>
<td>0.8</td>
<td>1.168</td>
</tr>
</tbody>
</table>

Indices and Scales

For my analyses, I completed index and scaling procedures for four variables. While my Number of Diagnoses and Psychological Distress measures are summated indices, I utilized factor analysis to create the Perceived Neighborhood Disorder and Perceived Powerlessness scales. I will next explain the procedures I used in the creation of the indices and scales in more detail.

Diagnoses Index

For my second measure of self-reported physical health (the first measure is self-reported overall health), I created a summated index to assess the number of diagnosed health problems for the respondents within my sample. My dataset contains questions concerning whether the respondent had been diagnosed with specific ailments. Respondents were asked a series of yes/no questions, inquiring whether they had been diagnosed with heart disease, high blood pressure, lung disease, breast cancer, a different cancer, diabetes, arthritis rheumatism, osteoporosis, allergies/asthma, or digestive problems. Because I am simply capturing the total number of diagnoses, combining the responses into
a summated index best suited my purposes. I combined the nine diagnoses items, except “breast cancer,” into the index. I excluded “breast cancer” because there were five hundred and thirty one missing cases; one respondent refused to answer and five hundred and thirty respondents were listed as “missing - male respondent.”

The respondents ranged from having no diagnosed illnesses (1125 respondents, 46%) to having seven diagnosed illnesses (2 respondents). See Table 3.4 for the distribution of all diagnosed illnesses. Considering the number of diagnosed ailments the respondents possessed, 46% of the respondents reported having no diagnosed illnesses, 30% had one illness, 15% had two illnesses, and 9% had three or more illnesses (see table 3.5 for a detailed distribution).

**Table 3.4 Percentage with Diagnoses within the Diagnoses Index (N=2442)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you been diagnosed with...</td>
<td></td>
</tr>
<tr>
<td>allergies/asthma?</td>
<td>25%</td>
</tr>
<tr>
<td>high blood pressure?</td>
<td>20%</td>
</tr>
<tr>
<td>Arthritis rheumatism?</td>
<td>18%</td>
</tr>
<tr>
<td>digestive problems?</td>
<td>13%</td>
</tr>
<tr>
<td>diabetes?</td>
<td>5%</td>
</tr>
<tr>
<td>heart disease?</td>
<td>5%</td>
</tr>
<tr>
<td>different cancer?</td>
<td>4%</td>
</tr>
<tr>
<td>osteoporosis?</td>
<td>3%</td>
</tr>
<tr>
<td>lung disease?</td>
<td>2%</td>
</tr>
</tbody>
</table>
Table 3.5 Number and Percentage with Multiple Diagnoses (N=2442)

<table>
<thead>
<tr>
<th>Number of Diagnoses</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1125</td>
<td>46%</td>
</tr>
<tr>
<td>One</td>
<td>720</td>
<td>30%</td>
</tr>
<tr>
<td>Two</td>
<td>376</td>
<td>15%</td>
</tr>
<tr>
<td>Three</td>
<td>126</td>
<td>5%</td>
</tr>
<tr>
<td>Four</td>
<td>58</td>
<td>2%</td>
</tr>
<tr>
<td>Five</td>
<td>25</td>
<td>1%</td>
</tr>
<tr>
<td>Six</td>
<td>10</td>
<td>.4%</td>
</tr>
<tr>
<td>Seven</td>
<td>2</td>
<td>.1%</td>
</tr>
</tbody>
</table>

Mean=.946, Standard Deviation=1.165

Psychological Distress Index

In my analysis, I replicated the Center for Epidemiologic Studies Depression Scale, or CES-D, (Downey and Van Willigen 2005; Hill, Ross, and Angel 2005; Radloff 1974), a well-established and widely used indicator of depressive symptoms among individuals. To create the summated index, I added the responses from the 10 previously mentioned items known to characterize depressive symptoms. The higher a respondent scored on the summated index, the more distress he experienced. The descriptive statistics for each item are provided in Table 3.6.
Table 3.6 Descriptive Statistics for Depression Scale (N=2300)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Question</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GETGO</td>
<td>Couldn't get going?</td>
<td>.787</td>
<td>1.665</td>
</tr>
<tr>
<td>SAD</td>
<td>Felt sad?</td>
<td>.870</td>
<td>1.657</td>
</tr>
<tr>
<td>SLEEP</td>
<td>Trouble with sleep?</td>
<td>1.063</td>
<td>2.017</td>
</tr>
<tr>
<td>EFFORT</td>
<td>Everything was an effort?</td>
<td>.523</td>
<td>1.464</td>
</tr>
<tr>
<td>LONELY</td>
<td>Felt lonely?</td>
<td>.579</td>
<td>1.543</td>
</tr>
<tr>
<td>BLUES</td>
<td>Couldn't shake blues?</td>
<td>.401</td>
<td>1.251</td>
</tr>
<tr>
<td>MIND</td>
<td>Trouble mind on task?</td>
<td>.714</td>
<td>1.602</td>
</tr>
<tr>
<td>ENJOY*</td>
<td>Enjoy life?</td>
<td>.965</td>
<td>1.795</td>
</tr>
<tr>
<td>HAPPY*</td>
<td>Felt happy?</td>
<td>1.043</td>
<td>1.761</td>
</tr>
<tr>
<td>HOPEFUL*</td>
<td>Hopeful about the future?</td>
<td>1.337</td>
<td>2.226</td>
</tr>
</tbody>
</table>

Mean=8.283  Standard Deviation=11.058  Range=0-70

*Items are reverse coded

Factor Analyses Overview

I performed factor analyses to create my measures of Perceived Powerlessness and Perceived Neighborhood Disorder. I selected factor analysis to determine the extent to which the items measuring each concept clustered into a unidimensional or multidimensional measure for the respondents in my dataset. Also, factor analysis is a useful data reduction technique combining multiple items into a single factor “score” or value.

The factor analysis procedure was, in general, similar for each measure. I began by examining the correlation matrix of the items to be used in the scales to assess whether the items were adequately correlated. If items are not adequately correlated and do not share enough variance, unique factors are produced for each item. If the items are too highly correlated, they share too much variance and are assumed to be measuring nearly identical aspects of the same concept.
I am using the standard criteria of looking for correlations between $r \geq .30$ and $r \leq .80$, as suggested by Pett, Lackey, and Sullivan (2003). I also examined the determinant of each correlation matrix, to ensure that the determinant fell between the criteria of 0 and 1 (also suggested by Pett and colleagues), which indicated that the items were neither uncorrelated (each item measuring an unrelated concept) nor too highly correlated (multiple items measuring the same concept).

I used Bartlett’s test of sphericity (Bartlett 1950), the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser 1974), and the individual item measure of sampling adequacy (MSA) (Pett, Lackey, and Sullivan 2003) derived from the anti-image covariance matrix to determine whether my data was appropriate for factoring. Bartlett’s test of sphericity determines whether the correlation matrix is an identity matrix, meaning no correlations exist among the items. The test is in the form of a chi-square test and a high probability ($p \geq .01$) is used to reject the null hypothesis, or to be sure the variables are appropriately correlated for factoring. The KMO measure of sampling adequacy is used to determine whether the sample size is adequate for factoring, considering the number of items being used. KMOs range from 0 to 1. Kaiser (1974) suggested the criteria of any KMO value less than .5 is unacceptable for factoring. The anti-image covariance matrix measure of sampling adequacy (MSA) determines whether the correlations among the items are strong enough to justify factoring. The criterion for factoring is the same as the KMO, which is any value less than
.5 is unacceptable (Pett, Lackey, and Sullivan 2003). I used these criteria when examining each test to determine whether my items were suitable for factoring.

Next, I decided upon the method of factor extraction and what type of factor rotation to utilize in the analysis. I selected the Principal Axis Factoring (PAF) method of factor extraction over the Principal Components Analysis (PCA) method for each factor analysis because it gives a more accurate measure of variance explained by the factors. PAF assumes that the variance is unique to each factor. It does not attempt to explain all of the variance in the items, and is, therefore, less apt to inflate the strength of the relationships among the items (Cattell 1965; Pett, Lackey, and Sullivan 2003).

I decided to rotate the factors for all scales using Direct Oblimin rotation. Considering that the items used in each factor analysis were assessing similar concepts, it was reasonable to assume the resultant factors would be correlated. Because I assumed the factors would be correlated, an oblique method of rotation was appropriate.

After completing the analysis, I used factor loadings and conceptual considerations to determine the number of resultant factors within the scales. Once items were assigned to a factor, I assessed the internal consistency of each factor by conducting a series of reliability tests. Beginning my assessment, I generated a Cronbach’s coefficient alpha (α) for each factor. This measure shows the proportion of total variance on a scale that is attributed to a common source (DeVellis 1991; Pett, Lackey, and Sullivan 2003). Additionally, I examined
the inter-item correlation among the items in each factor to determine adequate, yet not excessive, correlation for all items. I also assessed whether alphas for each factor were reduced when any item within the factor was removed.

The last step within each factor analysis was to generate factor scores for each factor. Factor scores are single estimated, linear scores for each respondent for each factor. By using factor scores, I effectively reduced multiple variables into a single factor score. I will next discuss each scale in more detail.

**Perceived Neighborhood Disorder Scale**

To create my perceived neighborhood disorder scale, I used the fifteen items from the Ross-Mirowsky Neighborhood Disorder Scale (Ross and Mirowsky 1999). This scale includes measures for both perceived physical disorder (6 items) and social disorder (9 items). Specific items used in this scale were discussed in the previous section. I reverse coded the negative response items, “There is a lot of graffiti in my neighborhood”; “My neighborhood is noisy”; "Vandalism is common in my neighborhood"; “There are a lot of abandoned buildings in my neighborhood”; “There are too many people hanging around on the streets in my neighborhood”; “There is a lot of crime in my neighborhood”; “There is too much drug use in my neighborhood”; “There is too much alcohol use in my neighborhood”; “I'm always having trouble with my neighbors”; so all items were uniformly coded higher for higher levels of perceived neighborhood disorder. See Table 3.7 for the descriptive statistics for each item.
Table 3.7 Descriptive Statistics for Perceived Neighborhood Disorder Scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>Question</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRAFFITI(^b)</td>
<td>There is a lot of graffiti in my neighborhood.</td>
<td>1.64</td>
<td>.660</td>
</tr>
<tr>
<td>NOISY(^b)</td>
<td>My neighborhood is noisy.</td>
<td>1.91</td>
<td>.737</td>
</tr>
<tr>
<td>VANDALS(^b)</td>
<td>Vandalism is common in my neighborhood.</td>
<td>1.78</td>
<td>.675</td>
</tr>
<tr>
<td>ABANBLDG(^b)</td>
<td>There are a lot of abandoned buildings in my neighborhood.</td>
<td>1.57</td>
<td>.592</td>
</tr>
<tr>
<td>CLEAN</td>
<td>My neighborhood is clean.</td>
<td>1.77</td>
<td>.603</td>
</tr>
<tr>
<td>CAREHOME</td>
<td>People in my neighborhood care for their house/apt.</td>
<td>1.71</td>
<td>.580</td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HANGOUT(^b)</td>
<td>There are too many hanging out in my neighborhood.</td>
<td>1.85</td>
<td>.785</td>
</tr>
<tr>
<td>CRIME(^b)</td>
<td>There is a lot of crime in my neighborhood.</td>
<td>1.82</td>
<td>.708</td>
</tr>
<tr>
<td>DRUGUSE(^b)</td>
<td>There is too much drug use in my neighborhood.</td>
<td>1.94</td>
<td>.807</td>
</tr>
<tr>
<td>ALCOHUSE(^b)</td>
<td>There is too much alcohol use in my neighborhood.</td>
<td>2.06</td>
<td>.789</td>
</tr>
<tr>
<td>WATCHOUT</td>
<td>In my neighborhood people watch out for each other.</td>
<td>1.86</td>
<td>.702</td>
</tr>
<tr>
<td>SAFE</td>
<td>My neighborhood is safe.</td>
<td>1.82</td>
<td>.675</td>
</tr>
<tr>
<td>NEITRUST</td>
<td>I can trust most people in my neighborhood.</td>
<td>1.83</td>
<td>.688</td>
</tr>
<tr>
<td>POLICE</td>
<td>There is adequate police protection in my neighborhood.</td>
<td>1.89</td>
<td>.685</td>
</tr>
<tr>
<td>TROUBLE(^b)</td>
<td>I have trouble with my neighbors.</td>
<td>1.64</td>
<td>.645</td>
</tr>
</tbody>
</table>

\(^a\)Range 1-4, \(^b\)Reverse Coded, \(^c\)Standard Deviation

Using these standard items for the Perceived Neighborhood Disorder Scale, I performed a factor analysis. I examined the correlation matrix for all the items (Table 3.5). As is indicated in the table, most of the items were appropriately correlated (.3 < r < .8). Two items, however, appeared to be weakly correlated with many other items. First, the item assessing “adequate police protection” has no correlation over .454 (with safe neighborhood) with all other items falling below .345. Four out of the fifteen items (“trouble with neighbors,” “too many people hanging out,” “lots of graffiti,” and “lots of abandoned buildings”) were all correlated below the criteria of r ≥ .3. Second, the item assessing “trouble with neighbors” had no correlation over .336 (“too many
people hanging out”) and the correlation with nine out of the fifteen items fell beneath the $r > .3$ criteria. With these two items in the correlation matrix the determinant was .000. The determinant fell below the criteria of being between 0 and 1, indicating that these items were not suited for scaling. Due to their lack of sufficient correlation with the remaining items, I decided to remove both. When I created a correlation matrix without the two questionable items, all variables appeared to be adequately correlated (Table 3.8). The determinant rose to .001, which fell within the criteria of 0 and 1. Overall, only one correlation fell below .3 and none were above .8. Therefore, I determined that these correlations showed that the remaining items could be scaled.
Table 3.8 Correlation Matrix for Neighborhood Disorder Scale: Selected Variables (N=1999)\textsuperscript{a}

\begin{tabular}{cccccccccccc}
1 & 1 & & & & & & & & & & & \\
2 & .486 & 1 & & & & & & & & & & \\
3 & .484 & .506 & 1 & & & & & & & & & \\
4 & .448 & .466 & .430 & 1 & & & & & & & & \\
5 & .421 & .423 & .356 & .666 & 1 & & & & & & & \\
6 & .500 & .434 & .373 & .436 & .416 & 1 & & & & & & \\
12 & .469 & .405 & .382 & .469 & .414 & .548 & .582 & .528 & .490 & .570 & .614 & 1 \\
\hline
\end{tabular}

Determinant=.001

\textsuperscript{a} All significant at \(p<.01\)

Next, I evaluated whether my data was appropriate for factoring. The Bartlett’s test was significant (\(\chi^2=14576.688, p=.000\)) meaning that the correlation matrix was not an identity matrix. The KMO statistic (.939) was acceptable, using Kaiser’s (1974) criteria of KMO \(\geq .5\), meaning that these items
were factorable. When checking the MSAs (not shown), I found that none fell below .904 indicating that the items were appropriate for scaling, using the standard MSA ≥.5.

Although the factor analysis yielded two factors, using the eigenvalue ≥ 1 as the standard indicator for an acceptable factor, I decided to limit the perceived neighborhood disorder scale to one factor. The first factor was clearly strong, with an eigenvalue of 6.857. The second acceptable factor had an eigenvalue of 1.057. The variance explained by the first factor was 53%. Including a second factor only increased the variance explained by 8%. Additionally, I examined the factor loadings within the structure matrix (Table 3.9). Even after dropping the two items with the lowest correlations, the two dimensions of physical and social disorder did not load distinctly on two factors as I had anticipated. The majority of the items loaded strongly on the first factor and moderately on the second. The only exceptions were two items that loaded more strongly on the second factor--the items asking if the respondents’ neighborhood is clean and if neighbors care for their homes. Because it is inappropriate to only have two items in a factor and the factor loadings for these two items were so weak, my decision was to limit the scale to one factor.
Table 3.9 Factor Loadings for Two Factors for Perceived Neighborhood Disorder Scale

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood is Safe</td>
<td>.666</td>
<td>.077</td>
</tr>
<tr>
<td>Trust People</td>
<td>.605</td>
<td>.191</td>
</tr>
<tr>
<td>Watch Out for Each Other</td>
<td>.544</td>
<td>.187</td>
</tr>
<tr>
<td>Neighborhood is Clean</td>
<td>.698</td>
<td>.420</td>
</tr>
<tr>
<td>Care for Homes</td>
<td>.638</td>
<td>.389</td>
</tr>
<tr>
<td>Too Many Hanging Out</td>
<td>.717</td>
<td>-.107</td>
</tr>
<tr>
<td>Lots of Crime</td>
<td>.826</td>
<td>-.188</td>
</tr>
<tr>
<td>Too Much Drug Use</td>
<td>.774</td>
<td>-.252</td>
</tr>
<tr>
<td>Too Much Alcohol Use</td>
<td>.700</td>
<td>-.233</td>
</tr>
<tr>
<td>Lots of Graffiti</td>
<td>.750</td>
<td>-.075</td>
</tr>
<tr>
<td>Vandalism is Common</td>
<td>.787</td>
<td>-.162</td>
</tr>
<tr>
<td>Neighborhood is Noisy</td>
<td>.714</td>
<td>-.067</td>
</tr>
<tr>
<td>Lots of Abandoned Buildings</td>
<td>.661</td>
<td>.010</td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>6.857</td>
<td>1.057</td>
</tr>
<tr>
<td><strong>% Variance</strong></td>
<td>52.75%</td>
<td>8.13%</td>
</tr>
</tbody>
</table>

I next assessed the internal consistency of my perceived neighborhood disorder factor. The alpha was sufficiently strong (.924), meaning the items fit consistently with one another. Additionally, the alpha for the factor was reduced when any item within the factor was removed, directing me to keep all of the items. This assessment led me to conclude that the factor derived from the perceived disorder items was internally consistent and reliable (Table 3.10).
Factor scores are single estimated, linear scores for each respondent for each factor. By using factor scores, I have effectively reduced multiple items into a single factor score. In my case, one factor has resulted in a single score for perceived neighborhood disorder for each respondent. To estimate factor score coefficients for each respondent, I used the regression method. This popular method creates a standardized score for each factor for each respondent similar to regression coefficients. I used this factor score in my regression analysis as the indicator of perceived neighborhood disorder.

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lots of Crime</td>
<td>.825</td>
</tr>
<tr>
<td>Vandalism is Common</td>
<td>.788</td>
</tr>
<tr>
<td>Too Much Drug Use</td>
<td>.768</td>
</tr>
<tr>
<td>Lots of Graffiti</td>
<td>.753</td>
</tr>
<tr>
<td>Too Many Hanging Out</td>
<td>.719</td>
</tr>
<tr>
<td>Neighborhood is Noisy</td>
<td>.716</td>
</tr>
<tr>
<td>Too Much Alcohol Use</td>
<td>.697</td>
</tr>
<tr>
<td>Neighborhood is Clean</td>
<td>.678</td>
</tr>
<tr>
<td>Neighborhood is Safe</td>
<td>.668</td>
</tr>
<tr>
<td>Lots of Abandoned Buildings</td>
<td>.663</td>
</tr>
<tr>
<td>Care for Homes</td>
<td>.622</td>
</tr>
<tr>
<td>Trust People</td>
<td>.603</td>
</tr>
<tr>
<td>Watch Out for Each Other</td>
<td>.543</td>
</tr>
</tbody>
</table>

| Eigenvalue                       | 6.857    |
| % Variance                       | 0.53     |
**Perceived Powerlessness Scale**

To measure perceived power/powerlessness, I used the items from the Mirowsky and Ross 2 x 2 index (1991) combining statements that either claim or refute personal control over good or bad outcomes. This index is widely used (Geis and Ross 1998; Ross, Geis, and Reynolds 2000; Ross and Mirowsky 2002; Downey and Van Willigen 2005) and is structured to eliminate both defense and agreement biases found in other measures of powerlessness and similar concepts. To do this, the index utilizes four items structured to measure perceived internal powerlessness and four to measure perceived external powerlessness. Additionally, four items were asked so the “strongly disagree” response of the four point Likert scale indicated high levels of perceived power whereas four items were asked so the “strongly disagree” category indicated high levels of perceived powerlessness. The specific items were discussed in the previous section.

For my analysis, I recoded the items, “The really good things that happen to me are mostly luck”; “There’s no sense planning a lot—if something good is going to happen it will”; “Most of my problems are due to bad breaks”; and “I have little control over the bad things that happen to me”. Therefore, all items were uniformly coded so higher values indicated higher levels of perceived powerlessness. The descriptive statistics for each item are provided in Table 3.11.
Using these standard items for the perceived powerlessness index, I performed a factor analysis. First, I examined the correlation matrix of the items (Table 3.12). As is indicated in the table, most correlations were statistically significant, but many of the items were not sufficiently correlated to merit further analysis. The determinant of this matrix, however, was .333, which falls between 0 and 1, indicating that the variables are neither too highly correlated (multiple items measuring the same concept) nor uncorrelated (each item measuring an unrelated concept). Due to the necessity of including all items for proper replication of the perceived powerlessness index, I decided to proceed with my factor analysis using all of the items.

Table 3.11 Descriptives for the Perceived Powerlessness Items (N=2254)

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Meana</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FATLUCKb</td>
<td>The good things that happen to me are luck.</td>
<td>2.040</td>
<td>.676</td>
</tr>
<tr>
<td>FATGOODb</td>
<td>There is no sense in planning things.</td>
<td>2.328</td>
<td>.829</td>
</tr>
<tr>
<td>FATPROBb</td>
<td>Most of my problems are due to bad breaks.</td>
<td>2.010</td>
<td>.672</td>
</tr>
<tr>
<td>FATBADb</td>
<td>I have little control over bad things that happen to me.</td>
<td>2.125</td>
<td>.695</td>
</tr>
<tr>
<td>RESPSUC</td>
<td>I am responsible for my own successes.</td>
<td>1.686</td>
<td>.587</td>
</tr>
<tr>
<td>RESPANY</td>
<td>I can do anything I set my mind to.</td>
<td>1.739</td>
<td>.598</td>
</tr>
<tr>
<td>RESPMIS</td>
<td>My misfortunes are from my mistakes.</td>
<td>2.336</td>
<td>.646</td>
</tr>
<tr>
<td>RESPFAIL</td>
<td>I am responsible for my failures.</td>
<td>2.045</td>
<td>.517</td>
</tr>
</tbody>
</table>

aData = 1-4
bReverse Coded
Table 3.12 Correlation Matrix for the Powerlessness Scale (N=2254)

Variables:
1. No Sense in Planning
2. Good Things Mostly Luck
3. Problems are Bad Breaks
4. Little Control Over Bad
5. Responsible for Failures
6. Misfortunes from my Mistakes
7. I Can Do Anything
8. Responsible for Successes

\[
\begin{array}{cccccccc}
 & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
1 & 1 & & & & & & \\
2 & .438 ** & 1 & & & & & \\
3 & .289 ** & .334 ** & 1 & & & & \\
4 & .259 ** & .261 ** & .438 ** & 1 & & & \\
5 & .098 ** & .141 ** & .151 ** & .166 & 1 & & \\
6 & .001 & -.005 & .017 & .121 ** & .339 ** & 1 & \\
7 & .060 ** & .148 ** & .142 ** & .207 ** & .202 ** & .101 ** & 1 \\
8 & .112 ** & .116 ** & .146 ** & .176 ** & .203 ** & .071 ** & .437 ** \\
\end{array}
\]

Determinant = .333

Next, I determined whether my data was appropriate for factoring. The Bartlett’s test was significant ($\chi^2=2476.079, p=.000$) meaning that the correlation matrix was not an identity matrix. The KMO statistic (.678) was acceptable, using Kaiser’s (1974) criteria of KMO $\geq .5$, meaning that these items were factorable. When checking the MSAs (not shown), I found they ranged from .541 to .728, indicating that the items were appropriate for scaling using the standard MSA $\geq .5$ criteria.
Table 3.13 Factor Loadings for 3 Factors

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Sense in Planning</td>
<td>.461</td>
<td>-.337</td>
<td>.072</td>
</tr>
<tr>
<td>Good Things Mostly Luck</td>
<td>.520</td>
<td>-.317</td>
<td>.038</td>
</tr>
<tr>
<td>Problems are Bad Breaks</td>
<td>.550</td>
<td>-.253</td>
<td>.052</td>
</tr>
<tr>
<td>Little Control Over Bad</td>
<td>.546</td>
<td>-.111</td>
<td>.071</td>
</tr>
<tr>
<td>Responsible for Failures</td>
<td>.393</td>
<td>.301</td>
<td>.232</td>
</tr>
<tr>
<td>Misfortunes from my Mistakes</td>
<td>.229</td>
<td>.444</td>
<td>.473</td>
</tr>
<tr>
<td>I Can Do Anything</td>
<td>.479</td>
<td>.350</td>
<td>-.358</td>
</tr>
<tr>
<td>Responsible for Successes</td>
<td>.449</td>
<td>.295</td>
<td>-.329</td>
</tr>
</tbody>
</table>

| Eigenvalue | 2.352 | 1.391 | 1.098 |
| % Variance | 29%   | 17%   | 14%   |

The initial factor analysis yielded three factors (Table 3.13), using the eigenvalue $\geq 1$ as a standard indicator for an acceptable factor. The first factor was clearly strong, with an eigenvalue of 2.352. The second was an acceptable factor, with an eigenvalue of 1.391. The cumulative variance explained by the first and second factor was 46%. A third factor yielded by my analysis had an eigenvalue of 1.098, which is only slightly above the standard for an acceptable eigenvalue for a factor. Therefore, after examining the structure matrix and taking conceptual considerations into account, I decided to limit the scale to two factors. I will discuss this in more detail.

By examining the factor loadings in the structure matrix, (Table 3.14), I have assigned the items to two factors. For each item, their loading was sufficiently strong on one factor to indicate into which factor the item belonged. None loaded too strongly or weakly on both factors. The first factor contained the items measuring perceived external powerlessness. The second factor contained...
the items measuring perceived internal powerlessness. Conceptually, these two factors were appropriate for the two facets of perceived powerlessness they were measuring. Two items with particularly low factor loadings were "responsible for my own failures" (.434) and "misfortunes are from my own mistakes" (.291). Upon considering these items, I decided they were important to retain in order to keep the factors balanced and prevent defense and agreement bias. The items were also conceptually appropriate within the perceived internal powerlessness factor. Additionally, although the loadings for both items were low for both factors, the loadings were highest for the perceived internal powerlessness factor. The factor correlation matrix showed that the two factors were sufficiently correlated (.325) to indicate they were measuring two dimensions of powerlessness, but not too highly correlated to suggest they were measuring the same dimension.

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Sense in Planning</td>
<td>.613</td>
<td>.173</td>
</tr>
<tr>
<td>Good Things Mostly Luck</td>
<td>.600</td>
<td>.247</td>
</tr>
<tr>
<td>Problems are Bad Breaks</td>
<td>.533</td>
<td>.336</td>
</tr>
<tr>
<td>Little Control Over Bad</td>
<td>.577</td>
<td>.107</td>
</tr>
<tr>
<td>Responsible for Failures</td>
<td>.215</td>
<td>.608</td>
</tr>
<tr>
<td>Misfortunes from my Mistake</td>
<td>.216</td>
<td>.565</td>
</tr>
<tr>
<td>I Can Do Anything</td>
<td>.212</td>
<td>.434</td>
</tr>
<tr>
<td>Responsible for Successes</td>
<td>.048</td>
<td>.291</td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>2.352</td>
<td>1.391</td>
</tr>
<tr>
<td><strong>% Variance</strong></td>
<td>29%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Factor Correlation=.325
I performed the reliability tests to assess the internal consistency of each factor. The alpha for the perceived external powerlessness factor was sufficiently strong (.661). The alpha for the perceived internal powerlessness factor was lower (.529). Even so, I decided each was high enough to indicate that the variance could be considered reliable variance, or the items fit consistently with one another. The alphas for the factors were reduced when any item within the factor was removed, directing me to keep all of the items. This assessment led me to conclude that the two factors within the perceived powerlessness scale were internally consistent and reliable.

To estimate factor score coefficients for each respondent, I used the regression method, as I did with the perceived neighborhood disorder factor. Because the coefficients were standardized measures, the means for the two factors were 0. However, the standard deviation was not one, but .826 for the perceived external powerlessness factor and .775 for the perceived internal powerlessness factor. This result is due to my selection of Principal Axis Factoring, over Principal Components Analysis, which does not attempt to explain all the variance within the factor.

Analysis

I will next discuss my analyses plans. The intent of my statistical analyses was to answer the primary question: How do feelings of powerlessness and psychological distress mediate the effects of perceived neighborhood disorder on
self-reported physical health? Using the variables discussed in this chapter, I completed four stages of statistical analysis—sample representativeness, bivariate correlations, multiple regression, and path analyses.

First, I compare my sample demographics to both Illinois and U.S. population demographics. This will allow me to assess whether my findings are generalizable to Illinois and/or the larger U.S. population. Second, I discuss the bivariate correlations among the variables in my model to assess whether my model variables are significantly associated in the predicted direction, whether my control variables were associated with my health variables, and to examine the possibility of multicollinearity problems in my multivariate regression analyses. Third, I discuss the multivariate regression analysis to evaluate the explanatory power of my model. Fourth, I examine the path models to better understand the direct and indirect effects of my model variables on self-reported physical health.
CHAPTER 4

WHOLE SAMPLE FINDINGS

In this chapter, I report the statistical findings from my analysis of the mediating effects of perceived internal and external powerlessness and psychological distress on the relationship between perceived neighborhood disorder and self-reported physical health. With this analysis, I intend to clarify the pathways within the model to provide a better understanding of the relationship between neighborhoods and health.

In the first section, I examine the generalizability of my findings to the larger population by comparing my sample demographics to both Illinois and U.S. population demographics. In the second section, I discuss the bivariate correlations among the variables in my model. Specifically, I assess whether my model variables were associated in the anticipated direction and their level of significance, determine whether my control variables were associated with my health variables, and examine the extent of multicollinearity among my variables. In the third section, I discuss my multivariate regression analysis in order to assess the significance and contributions of my individual model variables, as well as, the overall predictive power of my model. In the last section, I examine the path models derived from my theoretical model to better understand the direct and indirect effects of the model variables on physical health.
Sample Representativeness

In this section, I compare the distribution of respondents from the 1995 Community, Crime, and Health (CCH) survey with the distribution of respondents from 2000 Illinois Census data (the state in which the CCH was conducted) and with 2000 United States Census data to determine whether my sample was representative of the larger Illinois and United States populations. I used Chi Square analysis to judge the representativeness of my sample. If my Chi Square values were small and non-significant, it is evidence that my sample distributions were statistically similar to, or representative of, the same distributions in the larger populations. By determining the representativeness of the sample I could be more confident my data were generalizable, or appropriate to be used as predictors of the experiences of the larger populations (Table 4.1).
Table 4.1 Whole Sample Demographics, Illinois Census, United States Census

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in Years</td>
<td>2454</td>
<td>9,173,842&lt;sup&gt;a&lt;/sup&gt;</td>
<td>209,128,094&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>18 - 24</td>
<td>253 10%</td>
<td>1,210,898 13%</td>
</tr>
<tr>
<td></td>
<td>25 - 34</td>
<td>484 20%</td>
<td>1,811,674 20%</td>
</tr>
<tr>
<td></td>
<td>35 - 44</td>
<td>608 25%</td>
<td>1,983,870 22%</td>
</tr>
<tr>
<td></td>
<td>45 - 54</td>
<td>400 16%</td>
<td>1,626,742 18%</td>
</tr>
<tr>
<td></td>
<td>55 - 64</td>
<td>272 11%</td>
<td>1,020,633 11%</td>
</tr>
<tr>
<td></td>
<td>65 and over</td>
<td>427 17%</td>
<td>1,500,025 16%</td>
</tr>
<tr>
<td>Race</td>
<td>2585</td>
<td>12,419,293</td>
<td>281,421,906</td>
</tr>
<tr>
<td>European American</td>
<td>2087</td>
<td>9,125,471 73%</td>
<td>211,460,626 75%</td>
</tr>
<tr>
<td>African American</td>
<td>220</td>
<td>1,876,875 15%</td>
<td>34,658,190 12%</td>
</tr>
<tr>
<td>Other</td>
<td>158</td>
<td>1,417,048 11%</td>
<td>35,303,090 13%</td>
</tr>
<tr>
<td>Gender</td>
<td>2482</td>
<td>12,419,293</td>
<td>281,421,906</td>
</tr>
<tr>
<td>Men</td>
<td>1015</td>
<td>6,080,336 49%</td>
<td>138,053,563 49%</td>
</tr>
<tr>
<td>Women</td>
<td>1467</td>
<td>6,338,957 51%</td>
<td>143,368,343 51%</td>
</tr>
<tr>
<td>Children in HH</td>
<td>2480</td>
<td>3,105,513&lt;sup&gt;b&lt;/sup&gt;</td>
<td>71,787,347&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>None</td>
<td>1436</td>
<td>1464407 47%</td>
<td>34,336,033 48%</td>
</tr>
<tr>
<td>One or More</td>
<td>1044</td>
<td>1,641,106 53%</td>
<td>37,451,314 52%</td>
</tr>
<tr>
<td>Marital Status</td>
<td>2469</td>
<td>9,707,837&lt;sup&gt;c&lt;/sup&gt;</td>
<td>221,148,671&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>1394</td>
<td>5,206,193 54%</td>
<td>120,231,273 54%</td>
</tr>
<tr>
<td>Widowed</td>
<td>229</td>
<td>1,417,048 11%</td>
<td>35,303,090 13%</td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>340</td>
<td>1,043,171 11%</td>
<td>26,329,528 12%</td>
</tr>
<tr>
<td>Never Married</td>
<td>506</td>
<td>2,804,684 29%</td>
<td>59,913,370 27%</td>
</tr>
<tr>
<td>Education</td>
<td>2464</td>
<td>7,973,671&lt;sup&gt;d&lt;/sup&gt;</td>
<td>182,211,639&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Less than HS Degree</td>
<td>196</td>
<td>1,480,443 19%</td>
<td>35,715,625 20%</td>
</tr>
<tr>
<td>HS Degree/GED</td>
<td>846</td>
<td>2,212,291 28%</td>
<td>52,168,981 29%</td>
</tr>
<tr>
<td>Some College</td>
<td>634</td>
<td>1,720,386 22%</td>
<td>38,351,595 21%</td>
</tr>
<tr>
<td>AS, BA, or BS Degree</td>
<td>485</td>
<td>1,799,684 23%</td>
<td>28,317,792 27%</td>
</tr>
<tr>
<td>Graduate School/Degree</td>
<td>303</td>
<td>760,867 10%</td>
<td>16,144,813 9%</td>
</tr>
<tr>
<td>Household Income</td>
<td>2113</td>
<td>4,592,740&lt;sup&gt;e&lt;/sup&gt;</td>
<td>105,539,122&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td>$10,000 or less</td>
<td>172</td>
<td>383,299 8%</td>
<td>10,067,027 9%</td>
</tr>
<tr>
<td>$10,001-$50,000</td>
<td>1221</td>
<td>2,061,439 45%</td>
<td>51,159,707 48%</td>
</tr>
<tr>
<td>$50,001-$75,000</td>
<td>415</td>
<td>952,940 21%</td>
<td>20,540,604 19%</td>
</tr>
<tr>
<td>$75,001-$100,000</td>
<td>181</td>
<td>531,760 12%</td>
<td>10,799,245 10%</td>
</tr>
<tr>
<td>$100,001 and over</td>
<td>124</td>
<td>663,302 14%</td>
<td>12,972,539 12%</td>
</tr>
<tr>
<td>Employment Status</td>
<td>2445</td>
<td>9,530,946&lt;sup&gt;f&lt;/sup&gt;</td>
<td>217,168,077&lt;sup&gt;f&lt;/sup&gt;</td>
</tr>
<tr>
<td>In Labor Force</td>
<td>1666</td>
<td>5,855,202 61%</td>
<td>130,873,649 60%</td>
</tr>
<tr>
<td>Not in Labor Force</td>
<td>779</td>
<td>3,675,741 39%</td>
<td>86,294,428 40%</td>
</tr>
</tbody>
</table>

<sup>a</sup>Total population 18 and over
<sup>b</sup>Total Families
<sup>c</sup>Total population 15 and over
<sup>d</sup>Total population 25 and over
<sup>e</sup>Total households
<sup>f</sup>Total population 16 and over
The CCH respondents ranged in age from 18 years old to 92 years old, with a mean age of 45 years old. For comparative purposes, I collapsed age into a categorical variable containing the categories “18-24,” “25-34,” “35-44,” “45-54,” “55-64,” and “65 and over.” Examining the percentages in each category, the age distribution appeared very similar to those in the Illinois and U.S. census data. Further, my Chi Square test supported the claim that the age distribution of my sample is similar to that of both the Illinois and U.S. populations ($\chi^2=.68$, $p=.95$ and $\chi^2=.92$, $p=.07$, respectively).

Comparing racial distributions, 85% of my sample respondents were European American, 9% were African American, and 6% identified themselves as another race. European Americans were slightly overrepresented in my sample compared to the Illinois and U.S. populations, which reported 73% and 75% European Americans, respectively. Alternatively, African Americans were slightly underrepresented compared to the Illinois and U.S. populations, which reported 15% and 12% African Americans, respectively. As mentioned in a previous chapter, I chose to use the first wave of the CCH dataset because, while African Americans are slightly underrepresented in this data, the problem was considerably worse in the second wave of the dataset. Additionally, the Chi Square test showed that the differences between my sample distribution and those of the Illinois ($\chi^2=.388$, $p=.14$) and the U.S. populations ($\chi^2=3.63$, $p=.16$) were statistically non-significant.
Females comprised 59% of the respondents in my data and were also slightly over-represented in comparison to the Illinois and U.S. populations, in which 51% were female. I attribute this small over-representation to telephone survey effects in which women tend to answer home telephones, and therefore phone surveys, more often than men (Groves 1989). Additionally, the Chi Square test showed that the differences between my sample distribution and those of the Illinois and the U.S. population distributions ($\chi^2=0.99$, $p=0.32$) were statistically non-significant.

While the data were reported per family in the census data, the percentages showed that my sample had slightly fewer children under 18 years old within households. Forty-two percent of the respondents in my sample reported having one or more children under 18 years old in their household; whereas the Illinois census data reported 53% and U.S. census data reported 52% of households having one or more children under 18 years old. However, the Chi Square test showed that the differences between my sample distribution and the Illinois ($\chi^2=2.01$, $p=0.16$) and the U.S. population distributions ($\chi^2=1.63$, $p=0.20$) were statistically non-significant.

Fifty-seven percent of the respondents in the CCH data were married, which is very similar to both the Illinois and U.S. populations (54%). The sample had a noticeably lower percentage of respondents who have never been married (20%) than in the Illinois (29%) and U.S. populations (27%) The discrepancy in percentages was most likely due to the census in Illinois and the U.S. including
individuals aged 15 and over, whereas the CCH included only people aged 18 and over. However, the Chi Square test showed that the overall differences among all marital category distributions between my sample and the Illinois population ($\chi^2=2.34$, $p=.50$) and the U.S. population ($\chi^2=1.53$, $p=.67$) were statistically non-significant.

For comparative purposes, I collapsed years of education into a categorical variable containing the categories (1) “Less than high school degree;” (2) “High school degree/GED;” (3) “Some college;” (4) “AS, BA, BS college degree;” and (5) “Graduate school/degree.” Within my sample, respondents with a high school degree or an equivalent (34%) were slightly overrepresented compared to the Illinois (28%) and U.S. populations (29%). Alternatively, within my sample, respondents with less than a high school degree (8%) were slightly underrepresented compared to the Illinois (19%) and U.S. populations (20%). The discrepancies might be attributable to the Illinois and U.S. data only including people 25 and older. While other minimal variations existed, the Chi Square test showed that the overall differences among all education distributions between my sample and the Illinois ($\chi^2=5.77$, $p=.22$) and the U.S. populations ($\chi^2=7.37$, $p=.12$) were statistically non-significant.

Comparing the household incomes from my sample data to the Illinois and U.S. census data, I found that the distributions were quite similar. The largest discrepancy was the $10,001$-$50,000 category, with my sample being overrepresented (58%), compared to the Illinois (45%) and the U.S. population
48%. Alternatively, my sample was underrepresented in the highest income category of $100,001 and over. Specifically, while 6% of my sample was in this income range, 14% of the Illinois population and 12% of the U.S. population made over $100,000. Even so, the Chi Square test showed that the overall differences among all household income categories between my sample and the Illinois census ($\chi^2=5.29$, $p=.26$) and the U.S. census ($\chi^2=3.04$, $p=.55$) were statistically non-significant.

For comparison, I collapsed both the CCH data and the census data into “in the labor force” and “not in the labor force.” The respondents in my sample were slightly overrepresented in the labor force (68%) compared to the Illinois (61%) and the U.S. population (60%). I surmised the discrepancy was because the census data included respondents 16 years old and over, but my sample included only respondents over 18 years old. Logically, fewer teens are in the labor force. However, the Chi Square test showed that the overall differences between labor force participation in my sample and the Illinois census ($\chi^2=.79$, $p=.37$) and the U.S. census ($\chi^2=1.06$, $p=.30$) were statistically non-significant.

Overall, the distributions of selected demographic variables within the 1995 CCH sample data appeared to be representative of both the 2000 Illinois and U.S. population data. Through both comparisons of the percentage distributions and the use of Chi Square tests, I concluded that the findings from the CCH sample used in my research were likely to be generalizable to the larger Illinois and U.S. populations based on these selected demographic variables.
**Correlations**

After determining that my sample was likely representative of the larger populations based on my selected variables, I examined the bivariate correlations among my variables (Table 4.2). I performed this analysis for three reasons. First, I needed to assess whether my model variables were statistically significantly associated in the predicted direction. Observing the direction and significance of these correlations provides initial empirical support for the validity of my model. Second, recognizing that multiple variables are associated with my health outcome variables, I wanted to confirm their association in this sample. Showing an association between the model and the control variables justifies the need to control for these variables in my future analyses. Third, I needed to provide initial detection of potential multicollinearity among my variables.

I began by assessing the bivariate correlations among my model variables. Correlations provide initial support that the variables are related in a way that my model presumes. Ensuring the associations are significant and in the predicted direction provides support my model merits further study.
### Table 4.2 Whole Sample Bivariate Correlations

<table>
<thead>
<tr>
<th>Variables:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How would you say your health is?</td>
</tr>
<tr>
<td>2. Diagnoses Index</td>
</tr>
<tr>
<td>3. Psychological Distress Index</td>
</tr>
<tr>
<td>4. Powerlessness Scale – Internal</td>
</tr>
<tr>
<td>5. Powerlessness Scale – External</td>
</tr>
<tr>
<td>6. Neighborhood Disorder Scale</td>
</tr>
<tr>
<td>7. Female</td>
</tr>
<tr>
<td>8. African American</td>
</tr>
<tr>
<td>9. Married/Living as Married</td>
</tr>
<tr>
<td>10. Age</td>
</tr>
<tr>
<td>11. Children in household</td>
</tr>
<tr>
<td>12. Highest level of education completed</td>
</tr>
<tr>
<td>13. Employed Full Time</td>
</tr>
<tr>
<td>14. Family Income</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>.462**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>.625**</td>
<td>.137**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>.227**</td>
<td>.181**</td>
<td>.142**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>.218**</td>
<td>.109**</td>
<td>.242**</td>
<td>.463**</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>.192**</td>
<td>.058**</td>
<td>.190**</td>
<td>.186**</td>
<td>.229**</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td>-.068**</td>
<td>-.085**</td>
<td>-.097**</td>
<td>-.320</td>
<td>-.038</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td>-.096**</td>
<td>-.019</td>
<td>-.099**</td>
<td>-.326</td>
<td>-.081**</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td>-.069**</td>
<td>-.048**</td>
<td>-.196**</td>
<td>.002</td>
<td>-.133**</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td>.258**</td>
<td>.434**</td>
<td>-.097**</td>
<td>.256**</td>
<td>.066**</td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td>-.102**</td>
<td>-.170**</td>
<td>.038</td>
<td>-.076**</td>
<td>-.017</td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td>-.228**</td>
<td>-.146**</td>
<td>-.127**</td>
<td>-.137**</td>
<td>-.311**</td>
</tr>
<tr>
<td>12.</td>
<td></td>
<td>-.217**</td>
<td>-.221**</td>
<td>-.071**</td>
<td>-.188**</td>
<td>-.165**</td>
</tr>
<tr>
<td>13.</td>
<td></td>
<td>-.277**</td>
<td>-.162**</td>
<td>-.178**</td>
<td>-.164**</td>
<td>-.281**</td>
</tr>
<tr>
<td>14.</td>
<td></td>
<td>.027</td>
<td>.082**</td>
<td>.153**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td></td>
<td>-.071**</td>
<td>.057**</td>
<td>.069**</td>
<td></td>
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</tr>
<tr>
<td>16.</td>
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<td>-.031</td>
<td>-.151**</td>
<td>.210**</td>
<td>-.338**</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td></td>
<td>.091**</td>
<td>.091**</td>
<td>.070**</td>
<td>-.180**</td>
<td>.009</td>
</tr>
<tr>
<td>18.</td>
<td></td>
<td>.244**</td>
<td>.047**</td>
<td>.062**</td>
<td>-.382**</td>
<td>.064**</td>
</tr>
<tr>
<td>19.</td>
<td></td>
<td>.150**</td>
<td>.128**</td>
<td>.333**</td>
<td>-.205**</td>
<td>.058**</td>
</tr>
</tbody>
</table>

Note: * significant at .05 level, ** significant at the .01 level

I began by examining the correlations between my model variables and physical health. The relationship between perceived neighborhood disorder and
both physical health variables were positive and statistically significant. The correlation with self-reported overall health was .192 and the correlation with the Diagnoses Index was .058, both significant at the $p\leq.01$ level. In other words, as perceived neighborhood disorder increased, so did self-reported poor health and the number of diagnoses one possesses. While statistically significant, the relationships, however, were weak. The correlations were similar to those of other studies (Hill, Ross, Angel 2005) that found a weak direct relationship between perceived neighborhood disorder and physical health, even though overall health outcomes for residents in disordered neighborhoods are poor.

As expected, my mediating variables (the two perceived powerlessness variables and the psychological distress index) were all positively correlated with both physical health variables and were all significant at the $p\leq.01$ level. Considering the mediating variables, psychological distress had the strongest relationship of any mediating variable with self-reported overall health (.265). Perceived internal powerlessness, however, had the strongest relationship with the Diagnoses Index (.137). Comparing my powerlessness variables, perceived internal powerlessness was more strongly correlated with both self-reported overall health (.227) and the Diagnoses Index (.181) than was perceived external powerlessness (.218 and .109, respectively).

After assessing the correlations among my mediating and health variables, I examined the bivariate correlations among my independent and mediating variables to assess whether further analysis of my model was
warranted. The correlation between perceived neighborhood disorder and both perceived powerlessness variables were positive and statistically significant at the $p \leq .01$ level. The correlation between perceived neighborhood disorder and perceived external powerlessness (.229) was slightly stronger than the correlation between perceived neighborhood disorder and perceived internal powerlessness (.186). The correlation between perceived neighborhood disorder and psychological distress was also positive and statistically significant (.190, $p \leq .01$). These correlations suggest that living in an environment you consider to be disordered has an impact on feelings of powerlessness as well as on actual levels of psychological distress. Looking at the correlations among the mediating variables, the correlation between psychological distress and perceived external powerlessness (.242) and perceived internal powerlessness (.142) were positive and statistically significant at the $p \leq .01$ level. I was not surprised that perceived powerlessness, both internal and external, was related to feelings of psychological distress. In sum, my findings lent support to the argument that the relationship between perceived neighborhood disorder and physical health might be better understood through mediating variables.

I next examined the correlations between my physical health variables and a number of control variables. Showing a relationship between my health variables and selected control variables justifies the need to control for these items in my future analyses. Controlling for variables that are correlated with my health variables allows me to assess the additional variation attributable to my
model variables in future regression models. Self-reported overall health was statistically significantly correlated at the $p < .01$ level with all of the control variables. The Diagnoses Index was statistically significantly correlated with all of the control variables except for race ($-.019$). Surprisingly, within my sample, race is not related to the number of diagnoses one possesses. Not surprisingly, the strongest control variable correlations for both physical health variables were with age (Diagnoses Index$=.434$ and self-reported overall health$=.258$). The correlation was understandable considering that as people age, they are apt to have more diagnosed illnesses and health problems, regardless of additional factors. Age, therefore, was particularly important as a control variable in my future analyses.

Lastly, I examined the bivariate correlations to detect the potential of multicollinearity problems in my model. Multicollinearity occurs when variables within a multiple regression model are too highly correlated, masking the individual variation contributed by each variable. However, examining the bivariate correlations provides early detection of extremely high and potentially problematic correlations. I decided to use the criteria of $.6$ or above to be considered too highly correlated to proceed (Pett and Lackey, 2003). Variables of particular concern were high correlations between the self-reported physical health variables and the control variables, as well as the mediating variables and control variables. No variables I am using were sufficiently correlated as to indicate possible problems with multicollinearity.
In sum, the bivariate correlation analysis supported continued investigation of my research model. The model variables were statistically significantly correlated in the direction I anticipated. All control variables were statistically correlated with one or, often, more variables in my model which merits the need for them to be controlled in the next steps in my analyses. Lastly, no correlations indicated possible problems with multicollinearity, allowing me to keep all the variables for future analysis. Therefore, I next turn to my multivariate regression analyses.

Regression Models

After assessing the bivariate correlations among my variables, I next created regression models to evaluate how effective my model variables were in predicting my physical health variables within multivariate equations (Tables 4.3 and 4.4). In addition to analyzing the models in their entirety, I also needed to compare the individual predictive impact of each model variable on my physical health variables. To facilitate these comparisons, I chose to examine the standardized coefficients (beta) over the unstandardized coefficients (b). Because the variables in my model are dissimilar in their response ranges, comparisons among individual variables can only be made with standardized scores.

For each physical health variable, I began by examining the regression models including only the control variables. The control variables I used were
male (coded as 1), European American (coded as 1), age, previously married, never been married, number of children in the household, level of education, employed full-time, and family income. I confirmed the need for these particular control variables through my previous bivariate correlation analysis. I wanted to initially assess how much variance was explained by the control variables alone. Also, I checked the variation inflation factor for the control variables to continue to be mindful of possible problems with multicollinearity.

Next, I examined the regression models with both the model and control variables to assess what additional variance was explained by my model variables. I also compared the significance and strength of each model variable within the equations. I again checked the variation inflation factor (VIF) for each of the variables to check for multicollinearity. I have chosen to use the standard cutoff of 2.5 or larger as an indicator of multicollinearity (Pett, 2003). The values for the Variance Inflation Factors are included in the tables.

For each physical health variable, I created two separate models—a model with perceived internal powerlessness and model with perceived external powerlessness—to evaluate if and/or how my powerlessness variables worked differently within the explanatory equations. When I created the two perceived powerlessness variables, as discussed in Chapter 3, I recognized that the two variables were correlated. However, through my factor analysis I determined that the two variables were measuring distinct aspects of perceived powerlessness.
### Table 4.3 Regression Model Controls for Whole Sample

<table>
<thead>
<tr>
<th></th>
<th>Diagnoses</th>
<th>Overall Health</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>VIF</td>
</tr>
<tr>
<td>Female</td>
<td>-.046 *</td>
<td>1.108</td>
</tr>
<tr>
<td>Af American</td>
<td>-.008</td>
<td>1.075</td>
</tr>
<tr>
<td>Age</td>
<td>.393 **</td>
<td>1.843</td>
</tr>
<tr>
<td>Education</td>
<td>.011 *</td>
<td>1.234</td>
</tr>
<tr>
<td>Employed</td>
<td>-.018</td>
<td>1.356</td>
</tr>
<tr>
<td>Income</td>
<td>-.040</td>
<td>1.483</td>
</tr>
<tr>
<td>Prev Married</td>
<td>.030</td>
<td>1.367</td>
</tr>
<tr>
<td>Nev Married</td>
<td>.039</td>
<td>1.498</td>
</tr>
<tr>
<td>Kids in HH</td>
<td>-.018</td>
<td>1.327</td>
</tr>
<tr>
<td>Adj R²</td>
<td>.188</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>49.839 **</td>
<td></td>
</tr>
</tbody>
</table>

Note: *significant at the .05 level, **significant at the .01 level

### Table 4.4 Regression Model with Controls for Whole Sample

<table>
<thead>
<tr>
<th></th>
<th>Diagnoses</th>
<th>Overall Health</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Int VIF Ext VIF</td>
<td>Int VIF Ext VIF</td>
</tr>
<tr>
<td>Disorder</td>
<td>.029 1.266 .033 1.244</td>
<td>.079 ** 1.269 .086 ** 1.247</td>
</tr>
<tr>
<td>Int Power</td>
<td>.032 1.153</td>
<td>.087 ** 1.153</td>
</tr>
<tr>
<td>Ext Power</td>
<td></td>
<td>.010 1.186</td>
</tr>
<tr>
<td>Distress</td>
<td>.156 ** 1.118 .157 ** 1.135</td>
<td>.215 ** 1.118 .212 ** 1.136</td>
</tr>
<tr>
<td>Female</td>
<td>-.059 ** 1.112 -.059 ** 1.111</td>
<td>-.014 1.113 -.012 1.112</td>
</tr>
<tr>
<td>Af Amer</td>
<td>.020 1.169 .020 1.170</td>
<td>-.025 1.167 -.027 1.169</td>
</tr>
<tr>
<td>Age</td>
<td>.413 ** 1.783 .420 ** 1.712</td>
<td>.174 ** 1.779 .194 ** 1.708</td>
</tr>
<tr>
<td>Education</td>
<td>-.035 1.226 -.033 1.277</td>
<td>-.105 ** 1.225 -.091 ** 1.277</td>
</tr>
<tr>
<td>Employed</td>
<td>-.014 1.286 -.015 1.283</td>
<td>-.071 ** 1.286 -.073 ** 1.284</td>
</tr>
<tr>
<td>Income</td>
<td>-.011 1.466 -.012 1.479</td>
<td>-.105 ** 1.466 -.102 ** 1.480</td>
</tr>
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<td>Prev Mar</td>
<td>-.002 1.344 -.004 1.341</td>
<td>-.010 1.345 -.013 1.342</td>
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<tr>
<td>Nev Mar</td>
<td>.026 1.572 .025 1.573</td>
<td>-.020 1.567 -.026 1.568</td>
</tr>
<tr>
<td>Kids in HH</td>
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<td>-.063 * 1.296 -.063 * 1.296</td>
</tr>
<tr>
<td>Adj R²</td>
<td>.207</td>
<td>.206</td>
</tr>
<tr>
<td>F</td>
<td>32.152 ** 32.001 **</td>
<td>31.868 ** 31.463 **</td>
</tr>
</tbody>
</table>
Diagnoses Index

I began by examining the regression model explaining the Diagnoses Index incorporating only the control variables. Overall, the model was statistically significant (F=49.839, \( p < .01 \)). Looking at the adjusted \( R^2 \), I found that 18.8% of the variance in the Diagnoses Index was explained by the model. No VIF was so high as to indicate a concern with multicollinearity in the model.

Next, I added my model variables to the regression model to assess the additional variance explained when these variables were incorporated into the equation. The first model I examined included the perceived internal powerlessness variable. Overall, the model was statistically significant (F=32.152, \( p < .01 \)). Looking at the adjusted \( R^2 \), I found that 20.7% of the variance in the Diagnoses Index was explained by the model, compared to 18.8% when only the control variables were included (+1.9%). Considering my primary model variables, only psychological distress was statistically significant (.156, \( p < .01 \)).

The second model I examined included the perceived external powerlessness variable. As with the first model, this model was statistically significant (F=32.001, \( p < .01 \)). Looking at the adjusted \( R^2 \), I found that 20.6% of the variance in the Diagnoses Index was explained by the model, compared to 18.8% when only the control variables were included (+1.8%). Considering my primary model variables, only psychological distress was statistically significant (.157, \( p < .01 \)).
Overall, within the model to predict the Diagnoses Index including perceived internal powerlessness, psychological distress was the only significant model variable. While non-significant, the betas for perceived neighborhood disorder (.029) and perceived internal powerlessness (.032) were quite similar in size. Within the model to predict the Diagnoses Index including perceived external powerlessness, psychological distress, again, was the only significant model variable. However, while non-significant, the beta for perceived neighborhood disorder (.033) was larger than the beta for perceived external powerlessness (.010). This finding showed that the powerlessness variables operate slightly differently; therefore, I continued to enter each variable into the models separately.

**Self-Reported Overall Health**

I continued by examining the regression model explaining self-reported overall health incorporating only the control variables. Overall, the model was statistically significant (F=35.480, p<.01). Looking at the adjusted $R^2$, I found that 14.4% of the variance in self-reported overall health was explained by the model. No VIF was so high as to indicate a concern with multicollinearity in the model.

Next, I added my model variables to the regression model to assess the additional variance explained when these variables were incorporated into the equation. The first model I examined included the perceived internal powerlessness variable. Overall, the model was statistically significant
(F=31.868, p<.01). Looking at the adjusted $R^2$, I found that 20.5% of the variance in self-reported overall health was explained by the model, compared to 14.0% when only the control variables were included (+6.5%). Considering my primary model variables, all were statistically significant. Specifically, perceived neighborhood disorder (.079), perceived internal powerlessness (.101), and psychological distress (.223), were all statistically significant at the p<.01 level.

The second model I examined included the perceived external powerlessness variable. As with the previous model, this model was also statistically significant (F=31.463, p<.01). Looking at the adjusted $R^2$, I found that 20.2% of the variance in self-reported overall health was explained by the model, compared to 14.0% when only the control variables were included (+6.2%). Considering my primary model variables, all were statistically significant. Specifically, perceived neighborhood disorder (.086), perceived external powerlessness (.072), and psychological distress (.212), were all statistically significant at the p<.01 level.

Overall, within the model to predict self-reported overall health including perceived internal powerlessness, psychological distress was the strongest model variable. Comparing perceived neighborhood disorder and perceived internal powerlessness, internal powerless was slightly stronger. Within the model to predict self-reported overall health including perceived external powerlessness, psychological distress was, again, the strongest model variable. However, comparing perceived neighborhood disorder and perceived external
powerlessness, neighborhood disorder was slightly stronger. This finding showed that the powerlessness variables operate slightly differently, and therefore, I continued to enter the variables into the models separately.

Comparing the models to predict the Diagnoses Index to the models to predict self-reported overall health, I found the following. While the overall predictive power of the models with the model variables and controls were similar, adding the model variables improved the predictive power of self-reported overall health more so than for the Diagnoses Index (1.8/1.9% vs. 6.2/6.5%). Additionally, while all the model variables were statistically significant in the models predicting self-reported overall health, only psychological distress was significant in the model predicting the Diagnoses Index. Considering my findings, I chose to proceed to the path analysis. I anticipated that by examining both the direct as well as the indirect paths within my models, I might provide a clearer picture of the relationship between perceived neighborhood disorder and physical health.

**Path Analysis**

The final section of whole sample findings is an explanation of my path analysis which examined the direct and indirect effects of the model variables on the endogenous variables in my causal model. Primary attention was directed at the significant direct and indirect effects of perceived neighborhood disorder, perceived internal and external powerlessness, and psychological distress on my
physical health outcome measures (Table 4.5). Four causal models are presented, including two models for each health variable (Diagnoses Index and self-reported overall health). In each pair of health models, one contained the variable perceived internal powerlessness and the other contained perceived external powerlessness. My path coefficients are the estimated standardized regression coefficients (betas) from regression models. Control variables were included in the estimation of the path coefficients.

| Table 4.5 Direct and Indirect Effects for Path Models-Whole Sample |
|-------------------------|---------------------|---------------------|---------------------|
|                         | DIAGNOSES Direct     | OVERALL Direct       |                         |
|                         | Int   | Ext   | Int   | Ext   |                         |
| Disorder                | .029  | .033  | .079  | .086  |
| Powerless               | .032  | .010  | .087  | .072  |
| Distress                | .156**| .157**| .215**| .212**|
| Indirect Effects        |        |        |        |        |
| Disorder                | Powerless | .006 | .001  | .017  | .010  |
| Distress                | .016**| .016**| .023**| .022**|
| Power/Dist              | .003**| .003**| .002**| .005**|
| Combined                | .025  | .020  | .042  | .037  |
| Powerless               | Distress | .016**| .025**| .022**| .034**|

Figure 4.1 Path Model for Diagnoses Index using Internal Powerlessness

Diagnoses Index. I began by examining the path models to predict the Diagnoses Index. My first model included perceived internal powerlessness and the additional model variables, perceived neighborhood disorder and psychological distress (figure 4.1). Of the three direct effects, while all were
positive, only psychological distress (.156, \(p < .01\)) was statistically significant. The direct effects of perceived neighborhood disorder (.029) and perceived internal powerlessness (.032) were similar in size.

Examining the paths that make up the indirect effects on the Diagnoses Index when using perceived internal powerlessness, I found the following. The path from perceived neighborhood disorder to perceived internal powerlessness (.192, \(p \leq .01\)) was positive and statistically significant, as was the path from perceived neighborhood disorder to psychological distress (.106, \(p < .01\)). The path from perceived internal powerlessness to psychological distress (.102, \(p \leq .01\)) was also positive and statistically significant.

I next examined the indirect effects of perceived neighborhood disorder on the Diagnoses Index—through perceived internal powerlessness, through psychological distress, and through both perceived internal powerlessness and psychological distress. I defined an indirect effect as statistically significant if the paths that made up the indirect effect were significant. The indirect effect of perceived neighborhood disorder on the Diagnoses Index through perceived internal powerlessness was non-significant (.006). The two remaining indirect effects, however, were both statistically significant. Specifically, the indirect effect through psychological distress was .016 (\(p \leq .01\)), and the indirect effect through both perceived internal powerlessness and psychological distress was .003 (\(p \leq .01\)). The significance of the indirect effects was interesting, considering that the direct effect of perceived neighborhood disorder on the Diagnoses Index was
non-significant. The combined indirect effects of perceived neighborhood disorder on the Diagnoses Index (.025) were slightly smaller than the direct effect (.029).

The indirect effect of perceived internal powerless on the Diagnoses Index, through psychological distress, was also statistically significant (.016, p < .01). The significance of the indirect effect was important, considering the direct effect of perceived internal powerless was non-significant (.032)

Figure 4.2. Path Model for Diagnoses Index using External Powerlessness

My next model included perceived external powerlessness and the additional model variables, perceived neighborhood disorder and psychological distress (figure 4.2). Of the three direct effects, while all were positive, only psychological distress (.157, p ≤ .01) was statistically significant. The direct effects of perceived neighborhood disorder (.033) and perceived internal powerlessness (.010) were both non-significant, but the direct effect of perceived neighborhood disorder was larger than that of perceived internal powerlessness.

Examining the paths that make up the indirect effects on the Diagnoses Index when using perceived external powerlessness, I found the following. The path from perceived neighborhood disorder to perceived external powerlessness
(.136, p<.01) was positive and statistically significant, as was the path from perceived neighborhood disorder to psychological distress (.104, p<.01). The path from perceived external powerlessness to psychological distress (.163, p<.01) was also positive and statistically significant.

I next examined the indirect effects of perceived neighborhood disorder on the Diagnoses Index—through perceived external powerlessness, through psychological distress, and through both perceived external powerlessness and psychological distress. The indirect effect of perceived neighborhood disorder on the Diagnoses Index through perceived external powerlessness was non-significant (.00). The two remaining indirect effects, however, were both statistically significant. The indirect effect through psychological distress was .016 (p<.01), and the indirect effect through both perceived external powerlessness and psychological distress was .003 (p<.01). As with the previous model, the significance of the indirect effects was interesting, considering that the direct effect of perceived neighborhood disorder on the Diagnoses Index was non-significant. The combined indirect effects of perceived neighborhood disorder on the Diagnoses Index (.020) were smaller than the direct effect (.033).

The indirect effect of perceived external powerlessness on the Diagnoses Index, through psychological distress, was also statistically significant (.025, p<.01). The significance of the indirect effect was important, considering the direct effect of perceived external powerlessness was non-significant (.010), making the indirect effect larger than the direct effect.
Comparing the impact of using perceived internal or external powerlessness when predicting the Diagnoses Index, I found the following. Both models were remarkably similar. Neither measure of powerlessness had statistically significant direct effects on the Diagnoses Index. Both had statistically significant paths within the indirect effects, from perceived neighborhood disorder and to psychological distress. The significant paths contributed to the finding that the indirect effects of perceived neighborhood disorder to Diagnoses Index, through both perceived powerlessness and psychological distress were significant. Additionally, the indirect effect of perceived powerlessness on the Diagnoses Index through psychological distress was significant. Both perceived neighborhood disorder and perceived powerlessness (internal and external) had non-significant direct effects. By examining the indirect effects within the models, a better understanding of the impact on the Diagnoses Index is possible, with this configuration of variables.

Figure 4.3 Path Model for Self-Reported Overall Health using Internal Powerlessness

![Path Model for Self-Reported Overall Health using Internal Powerlessness](image)

Self-Reported Overall Health. I continued by examining the path models to predict self-reported overall health. My first model included perceived internal powerlessness and the additional model variables, perceived neighborhood disorder and psychological distress (figure 4.3). All the direct effects on self-
reported overall health were positive and statistically significant. Specifically, the
direct effect of perceived neighborhood disorder was .079, the direct effect of
perceived internal powerlessness was .087, and the direct effect of psychological
distress was .215, all significant at \( p < .01 \). Of the direct effects, psychological
distress was the largest. The direct effects of neighborhood disorder and
perceived internal powerlessness were similar in size.

Examining the paths that make up the indirect effects on self-reported
overall health when using perceived internal powerlessness, I found that all the
paths were statistically significant. Specifically, the path from perceived
neighborhood disorder to perceived internal powerlessness was .192 (\( p < .01 \)); the
path from perceived neighborhood disorder to psychological distress was .106
(\( p < .01 \)); and the path from perceived internal powerlessness to psychological
distress was .102 (\( p < .01 \)).

I next examined the indirect effects of perceived neighborhood disorder on
the self-reported overall health—through perceived internal powerlessness,
through psychological distress, and through both perceived internal
powerlessness and psychological distress. All indirect effects were positive and
statistically significant. Specifically, the indirect effect through perceived internal
powerlessness was .017 (\( p < .01 \)), through psychological distress was .023
(\( p < .01 \)), and through both perceived internal powerlessness and psychological
distress was .002 (\( p < .01 \)). The combined indirect effects of perceived
neighborhood disorder on self-reported overall health (.042), however, were smaller than the direct effect (.079).

The indirect effect of perceived internal powerlessness on self-reported overall health through psychological distress was also statistically significant (.022, $p<.01$). It was, however, smaller than the direct effect (.087).

**Figure 4.4 Path Model for Self-Reported Overall Health using External Powerlessness**

Finally, I examine the model predicting self-reported overall health that includes perceived external powerlessness and the additional model variables, perceived neighborhood disorder and psychological distress (figure 4.4). All the direct effects on self-reported overall health were positive and statistically significant. Specifically, the direct effect of perceived neighborhood disorder was .086, the direct effect of perceived external powerlessness was .072, and the direct effect of psychological distress was .212, all significant at $p<.01$. Of the direct effects, psychological distress was the largest. The direct effects of neighborhood disorder and perceived internal powerlessness were similar in size.

Examining the paths that make up the indirect effects on self-reported overall health when using perceived external powerlessness, I found that all the paths were statistically significant. Specifically, the path from perceived neighborhood disorder to perceived external powerlessness was .136 ($p<.01$);
the path from perceived neighborhood disorder to psychological distress was .104 (p<.01); and the path from perceived external powerlessness to psychological distress was .163 (p<.01).

I next examined the indirect effects of perceived neighborhood disorder on the self-reported overall health—through perceived external powerlessness, through psychological distress, and through both perceived external powerlessness and psychological distress. All indirect effects were positive and statistically significant. Specifically, the indirect effect through perceived external powerlessness was .010 (p<.01), through psychological distress was .022 (p<.01), and through both perceived external powerlessness and psychological distress was .005 (p<.01). The combined indirect effects of perceived neighborhood disorder on self-reported overall health (.037), however, were smaller than the direct effect (.086).

The indirect effect of perceived internal powerlessness on self-reported overall health through psychological distress was also statistically significant (.034, p<.01). It was, however, smaller than the direct effect (.072).

Comparing the impact of using perceived internal or external powerlessness when predicting the Diagnoses Index, I found the following. Both models were remarkably similar. All paths and effects, direct and indirect, were positive and statistically significant for both models.

In comparing the four models discussed above, those with similar physical health outcome variables had very similar direct and indirect effects regardless of
whether internal or external powerlessness was included in the model. However, when the outcome variable is self-reported overall health, the powerlessness variables (internal or external) have stronger and statistically significant direct and indirect effects. In all four models, psychological distress has the strongest statistically significant effects; these effects were the strongest when self-reported overall health was the physical health outcome variable.
CHAPTER 5

LITERATURE REVIEW: GROUP DIFFERENCES

In the previous chapters, I discussed the sociological understanding of health, traced the evolution of the sociological study concerning neighborhoods’ impact on both mental and physical health, explored new directions in neighborhood and health research, and utilized the stress model to establish that the relationship between perceived neighborhood disorder and self-reported physical health is mediated by perceived powerlessness and psychological distress. Considering the sociological understanding of social group differences in health outcomes led me to question how minority/majority group differences moderate my explanatory model. Specifically, to extend my analysis, I next turn to a new question: Does my explanatory model of the relationship between perceived neighborhood disorder and self-reported physical health operate differently for minority and majority social groups?

A long-standing body of literature illustrates the many minority/majority differences in experiences, opportunities and outcomes, including differences in mental and physical health (see House 2001; Robert and House 2000; and Williams and Collins 1995 for reviews). Even so, Stafford and colleagues (2005) noted that researchers often assume that health models operate similarly for all social groups. To further understand the relationship between neighborhoods
and health, it is important to know if minority/majority group status moderates the impact of neighborhood on mental and physical health.

I first explain the commonly understood sociological definitions of minority and majority social groups. Next, I discuss the literature regarding my selected social minority groups and health. Specifically, I focus upon race, class and gender differences. In each instance, I examine the overall health literature for the group and then discuss research concerning the linkages in my model.

**Minority/Majority Groups Overview**

The concepts of minority and majority social groups stems from a well-established sociological literature that demonstrates differentials in experiences for members of these groups. Understanding of minority and majority groups originated with Wirth’s (1945) classic definition which outlined three distinct characteristics that were required of minority group membership. First, minority group members are distinguished by perceived appearance or behavior. Second, the majority group discriminates against the minority group based on the perceived differences. Third, minority group members acquire group identification which includes the awareness of their group discrimination and subsequent powerlessness within their society. Wirth’s explanation of minority group membership contains both objective and subjective elements. Members of minority groups have rarely chosen to be a member of their group. For example,
members of a racial minority do not select their race in their particular society, but are objectively identified as members by the social definitions of race. Further, minority group members do not seek, invite, or provoke the objective discrimination they experience. Even so, the experience of minority group membership creates a similarity in experience that fosters a feeling of, or subjective, group identification with fellow group members.

As defined sociologically, minority/majority group membership is associated with social power, not the number of people in the group. Minority groups are an identification of a social group with less power and resources than the majority group (Dworkin and Dworkin 1976). While the minority group coexists with the majority group, it is subordinate to the majority group, regardless of size. Typical areas of social power include, but are not limited to, wealth, levels of education, occupational opportunities, areas of residence, and political power. The majority group is privileged and overrepresented in each area. To illustrate, while women constitute approximately fifty-one percent of the U.S. population (U.S. Census 2011), they are significantly underrepresented in high power political offices such as Congress (16.4 percent, according to Center for Women in American Politics (Rutgers 2011)) and leaders of major corporations (Catalyst 2011a) and have lower income levels on average than men (Catalyst 2011b). Therefore, women in the United States are considered a minority group even though they outnumber men. In sum, upon understanding the distinction between social majority/minority groups, African Americans,
women, and people of lower economic class can be categorized as minority groups within the United States.

In recent years however, controversy has arisen concerning the usage of the terms “minority” and “majority” group. Wilkinson (2000) explains that the term has become overused and neglects to recognize the different histories and experiences of each unique group, especially race groups. According to Wilkinson, categorizing all groups that experience social discrimination or oppression with a single term is inappropriate. The failure to recognize the differences within each group allows some to forget that significant differences exist between each minority group. It has been suggested that researchers entirely omit the terms minority and majority groups (Butler 2002, Wilkinson 2000), replacing the terms with “oppressed” or “disadvantaged” groups in an attempt to better encapsulate their experience while allowing their unique histories to remain a salient feature of their group membership.

While I recognize the concerns of those who argue against using minority/majority group, I argue that social researchers can use an umbrella conceptual term if they are not remiss in recognizing the unique histories and experiences of the specific group to which they are referring. For example, even though both women and African Americans are considered social minority groups, their histories or experiences of discrimination are not the same. Both groups, however, have a history of oppression and experience discrimination in some form. For consistency, I will use the terms minority and majority groups for
the clarity of their original defining characteristics as outlined by Wirth (1945). I do not, however, assume that the histories and experiences of my chosen comparative groups are similar.

Further, I propose that it is precisely the unique histories and experiences of each minority group that can result in variations in feelings, interpretations, and meanings given to social circumstances. Because each group has different defining characteristics, experiences, forms of oppression, I do not expect identical outcomes for the minority groups I selected for this research (race, class, gender). It is essential to consider the unique subjective meaning of social and psychological phenomena when comparing the experiences of minority/majority groups. I will discuss each further as it relates to the health differences among my specific groups.

**Race**

A vast literature finds significant health differentials between minority racial groups and majority European Americans (see House 2001; and Williams and Collins 1995; for reviews). It is too simplistic, however, to assume poorer health for all racial minorities. Researchers find that some groups surpass the majority European Americans on certain health measures. For example, even though Mexican Americans are socioeconomic disadvantage compared to European Americans, they have lower mortality rates than non-Hispanic whites (Palloni and Arrias 2004). Meanwhile, African Americans have repeatedly been
shown to have poorer health than non-Hispanic whites (Hayward, Crimmins, Miles, and Yang 2000). Recognizing these variations in health outcomes among racial groups, for my purposes I am only comparing African American and European Americans. For the remainder of my discussion on race as a minority group, I will focus solely on African Americans and European Americans.

Along with higher mortality rates, African Americans have higher rates of hypertension, heart disease, cancer and HIV (Wong, Shapiro, Boscardin, and Ettner 2002). Although a significant amount of the gap between the health of African Americans and European Americans can be explained by socioeconomic disadvantage, the disparity remains even after adjusting for socioeconomic status (Franks et al. 2006; House and Williams 2000; Kawachi, Daniels, and Robinson 2005; Williams 1999; Williams and Collins 1995). Farmer and Ferraro (2005) found that increased levels of education improved self-rated health for whites but did not have the same impact on African Americans. Researchers have argued that discrimination, residential segregation, and environmental stresses must be examined further when explaining the ongoing racial disparities in health (Do, et al. 2008, Kaplan 1996, Kunitz and Pesis-Katz 2005, Williams, Neighbors, and Jackson 2003).

Findings concerning race and mental health are mixed. Some research finds that African Americans report comparable or better overall mental health than European Americans (Breslau et al. 2006; Riolo, Nguyen, Greden, and King 2005). Alternatively, other research finds that African Americans suffer more
psychological distress than European Americans (Kessler and Neighbors 1986; Mirowsky and Ross 1980; Ross 2000).

*Neighborhoods and Health.* As discussed in previous chapters, a substantial body of literature suggests that the neighborhood environment in which one lives impacts health (Browning and Cagney 2002; Kawachi and Berkman 2003; Robert and Li 2001). Specifically, those who live in disadvantaged neighborhoods tend to suffer from worse health outcomes than those who live in more affluent neighborhoods (Cagney, Browning, and Wen 2005). Because racial minorities such as African Americans are concentrated in disadvantaged neighborhoods (Massey 1996; Wilson 1987), they are assumed to be more often impacted by the detrimental health effects of neighborhood disadvantage.

Beyond sheer overrepresentation, however, studies have also found that the impact of neighborhood disadvantage on physical health is more pronounced for African Americans than European Americans (Cagney, Browning, and Wen 2005; Do et al. 2008). For example, using neighborhood poverty as a measure of neighborhood disadvantage, Do and colleagues (2008) found that neighborhood context accounted for worse self-reported health in African Americans than European Americans. Researchers have found a significant relationship between neighborhood disadvantage and mortality for African Americans, but not for European Americans (Anderson et al. 1995; LeClere et al. 1997; Neser et al. 1971). Considering the impact of neighborhood on health outcomes and
behaviors, the racial difference appears to be more pronounced within impoverished neighborhoods than affluent neighborhoods (Browning and Cagney 2003; Cagney et al. 2005; Yen and Kaplan 1998). Perusing the literature, I could not find race comparisons for the remaining pathways in my model.

**Class**

Decades of research shows that socioeconomic status continues to be the most influential factor in explaining health disparities. In general, low socioeconomic status has long been linked to poor health outcomes (Farmer and Ferraro 2005; Link and Phelan 1995; Phelan et al. 2004; Williams and Collins 1995). The underlying reasons that low socioeconomic status causes worse health appear to be caused by the poor's increased exposure to health stressors and less access to health care resources that can prevent or cure diseases (Phelan et al. 2004; Read and Gorman 2006; Robert 1998). For example, poor people are concentrated in communities with neighborhood disorder that holds many health stressors for residents (Evans and Kantrowitz 2002; Hill, Ross, and Angel 2005). Phelan and colleagues (2004) categorize socioeconomic status as a “fundamental cause” of disease due to the pervasiveness of the influence. However, beyond individual poverty levels, the relationship between poverty and poor health remains (Diez Roux et al. 1997; House 2001; Yen and Kaplan 1999).

**Neighborhood and Health.** As with African Americans, the relationship between neighborhood characteristics and health appear to be more pronounced
for poor people than for wealthier people (Diez Roux et al. 1997; Yen and Kaplan 1999). For example, Boardman and colleagues (2001) found that for the lower class, the relationship between neighborhood disadvantage and worse self-reported health was stronger than for the higher class. Alternatively, within affluent neighborhoods, the relationship between neighborhood and health tends to be more positive for all, regardless of socioeconomic status (Browning et al. 2003).

*Powerlessness and Health.* When considering the impact of perceived powerlessness and health among lower and higher class people, the limited research is interesting. Lachman and Weaver (1998) found that the impact of feelings of personal control on both physical and mental health was stronger for the lower class than for the higher class. Krupat and colleagues (1999) found that those in lower socioeconomic positions tended to have more control and be more assertive when it came to seeking medical treatment. Schnittker and McLeod (2005) characterized these findings by stating that “class shapes responses as well as conditions” (p. 86) when it comes to personal power and health outcomes. Therefore, it appears that for the lower class, perceived powerlessness has a stronger impact on physical health than for the higher class. I found no other literature that provided class comparisons for the remaining pathways in my model.
Gender

Although women have a higher life expectancy, they suffer poorer overall physical and mental health than men (Gorman and Read 2006; Kavanaugh et al. 2006; Molinari, Ahern, and Hendryx 1998; Kawachi and Berkman 2001; Reiker and Bird 2000; Stafford et al. 2005; Verbrugge 1985). For example, women suffer higher levels of depression than men (Ross and Bird 1994). As with my other minority group reviews, a primary explanation of poorer health for women has been their overall economic disadvantage (Phelan et al. 2004; Ross and Bird 1994). Additionally, the literature suggests that the social roles held by women (e.g. caregivers) are more detrimental to health (Ross and Bird 1994) than those held by men.

Neighborhood and Health. Overall, researchers have found that neighborhood environment has a stronger negative impact on health for women than for men (LeClere et al. 1997; Kavanaugh et al. 2006; Molinari, Ahern, and Hendryx 1998). Molinari and colleagues (1998) found that perceived community problems more negatively impacted women’s physical health, mental health, and overall functioning than for men. Similarly, Stafford and colleagues (2005) found that a poor physical environment was related to worse health for women, but not for men. Kavanaugh and colleagues (2006) examined the relationship between various aspects of the neighborhood environment (including socioeconomic status, integration, alienation, safety, and trust) and physical health. While all
negative aspects of the neighborhood environment negatively impacted women’s health, only safety had a significant negative impact on men’s health.

**Additional Pathways.** While researchers have found gender differences in the impact of neighborhoods on health, the sparse literature suggests little gender variation in my remaining pathways. For example, Matheson and colleagues (2006) anticipated that neighborhood disadvantage would have a more deleterious effect on the mental well-being of women than men, but found no significant differences. Seeman and Lewis (1995) noted that the impact of perceived powerlessness on health was quite similar between men and women, despite known differences in overall health outcomes. In light of mixed findings, Ferraro and Nurriden (2006) proposed that researchers should examine how mental distress impacts different health outcomes differently for women and men. Specifically, they found that high stress caused higher cancer mortality in women, but higher heart-related mortality in men.
Hypotheses

In summation, below I list my research question and hypotheses.

Research Question:

Does minority group membership moderate the effects of perceived neighborhood disorder on self-reported physical health when feelings of powerlessness and psychological distress are used as mediating variables?

Hypotheses:

1. Perceived neighborhood disorder will have a greater impact on poor self-reported physical health for minority group members than for majority group members.

2. Perceived powerlessness will have a greater impact on poor self-reported physical health for minority group members than for majority group members.

3. Psychological distress will have a greater impact on poor self-reported physical health for minority group members than for majority group members.

4. Perceived neighborhood disorder will have a greater impact on perceived powerlessness for minority group members than for majority group members.

5. Perceived neighborhood disorder will have a greater impact on psychological distress for minority group members than for majority group members.

6. Perceived powerlessness will have a greater impact on psychological distress for minority group members than for majority group members.
CHAPTER 6

SUBGROUP METHODS

To further understand the impact of perceived neighborhood disorder on physical health, I examined whether my model operated differently for social minority and majority groups. In this phase of my research, I wanted to determine whether social group differences moderate this relationship. Specifically, I examined the moderating effects of race, class, and gender on the relationship between perceived neighborhood disorder and self-reported physical health when mediated by perceived powerlessness and psychological distress. Within this brief chapter, I explain how I created my minority/majority subgroups and my analysis plans for comparing the minority/majority subgroup findings. The social groups of interest in my research were race, class, and gender. I begin by discussing the decisions of how best to divide my race groups. Next, I explain how I created the lower and higher class groups. Because the creation of gender subgroups was obvious and standard, I do not include a discussion of gender. I conclude by explaining my minority/majority subgroup analysis plan.
Race

I will begin by discussing the decisions of how to best divide my sample into race subgroups. As explained in previous chapters, I decided to use the first wave of the dataset because of its higher representation of people of color. Not surprisingly, while the numbers decreased in the second wave, both waves of the sample contained ample representation of European Americans. However, with the reduction in size of the second wave, representation of people of color dropped significantly.

Next, of the minority group representation in the sample, by far the largest was African Americans. I decided to limit my race group to solely African Americans. In addition to African Americans being the largest racial minority group, it was important to not assume the experiences of different racial minorities are the same. For example, combining Asian and African American’s experiences has the potential to mask the unique experiences of each group. Therefore, for size and consistency, I used only African American respondents to compare to European Americans.

Class

To create my class subgroups, I decided to separate the sample into “lower” and “higher” class groups. First, following the method used when creating U.S. poverty guidelines (U.S. Census Bureau 2011), I created unique variables by combining “family income” and “people in the household” variables. Second,
following the definition used by Hill and colleagues (2005), I put respondents who fell over 200% of the poverty guideline for their income and people in the household into the “higher class” group. I placed respondents who fell under 200% of the poverty guideline for their income and people in the household into the “lower class” group. When creating the class subgroups, I had to take dataset issues into account. I will explain the creation of my class subgroups in further detail.

For many cases, the family income variable was missing. Of the 2482 respondents in the dataset, 703 responses were coded “-9”. Additionally, nine respondents reported they “did not know” and three refused to answer the question. The dataset, however, included questions posed to respondents unwilling to give a specific income amount, asking for their income range. The question sequence began by asking the respondents if their family income was “more than” or “less than $30,000.” The sample was divided based on their answers. The respondents who replied that their family income was less than $30,000 were asked a yes/no question of whether their family income was “less than $20,000”. Those who said yes were asked a yes/no question of whether their family income was “less than $10,000”. Similarly, the respondents who replied that their family income was “more than $30,000” were asked an ascending series of yes/no questions of whether their family income was “more than $40,000”, “more than $50,000”, “more than $75,000”, and “more than $100,000.” Using the responses to these questions and incorporating the
answers with specific dollar amounts, I constructed a family income variable with only 13 missing cases. I will explain in more detail.

First, I broke the variable with precise family income amounts into the following categories: 1) $0-$10,000; 2) $10,001-$20,000; 3) $20,001-$30,000; 4) $30,001-$40,000; 5) $40,001-$50,000; 6) $50,001-$75,000; 7) $75,001-$100,000; and 8) $100,000 and above. Next, I created formulas utilizing the yes/no series of family income questions to isolate the respondents who did not give a precise family income amount into income categories corresponding with the categories I created for the precise amounts. Finally, I combined these variables into a single, categorical family income variable.

To create the class variable, I decided to use my newly created family income variable combined with people in the household to mimic the calculation of the U.S. poverty line. Specifically, the criteria for the lower class group was 1) One or two people in the household and a family income below $20,001; 2) Three or four people in the household and a family income below $30,001; 3) Five or six people in the household and a family income below $40,001; 4) Seven to nine people in the household and a family income below $50,001; or 5) Ten to thirteen people in the household and a family income below $75,001. The remaining respondents were placed in the upper class group.
**Subgroup Analysis**

I will next discuss my minority/majority subgroup analysis plan. This second portion of analyses aimed to answer the question of whether my model operated differently for different social subgroups. As previously explained, I selected race, class, and gender to illuminate potential differences in model operation for majority and minority social groups. For this purpose, I compared the path models between groups to identify notable differences. Specifically, I compared the strengths and directions of the direct and indirect effects of my model variables on self-reported physical health to determine whether the models operate differently between the subgroup path models.
CHAPTER 7

SUBGROUP FINDINGS

In this section, I continue my examination of the pathways from perceived neighborhood disorder to physical health. In the previous findings chapter, I discussed model patterns for my whole sample. Examining the literature on differences between minority and majority groups led me to expand my inquiry to comparisons of outcomes of my theoretical model for minority and majority subgroups. As discussed in the previous chapter, I have chosen to compare race, class and gender subgroups. I provide the path analyses for each of the subgroups, comparing the minority and majority groups’ path models. I begin with my race subgroup comparison.

**Race**

Table 7.1 Direct and Indirect Effects for Path Models-African American (N=220)

<table>
<thead>
<tr>
<th>Direct Effects</th>
<th>DISPOSITIONS</th>
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<td>Ext</td>
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<tr>
<td>Disorder</td>
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<td>.070</td>
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<td>-.009</td>
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<td>Distress</td>
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<td>.252 **</td>
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<td>Ext</td>
</tr>
<tr>
<td>Disorder Powerless</td>
<td>-.000</td>
<td>-.000</td>
</tr>
<tr>
<td>Distress</td>
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<td>.028</td>
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<tr>
<td>Power/Dist</td>
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<td>.001</td>
</tr>
<tr>
<td>Combined</td>
<td>.029</td>
<td>.029</td>
</tr>
<tr>
<td>Powerless Distress</td>
<td>.014</td>
<td>.051 *</td>
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Table 7.2 Direct and Indirect Effects for Path Models-European American (N=2087)

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<tr>
<td>Powerless</td>
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<td>.010</td>
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<tr>
<td>Distress</td>
<td>.143 **</td>
<td>.145 **</td>
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<th></th>
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<th>Indirect Effects</th>
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<tr>
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<td>Powerless</td>
<td>Distress</td>
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<td>.001</td>
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<tr>
<td>Distress</td>
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<td>.013 **</td>
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<tr>
<td>Power/Dist</td>
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<td>.003 **</td>
</tr>
<tr>
<td>Combined</td>
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<td>.017</td>
</tr>
<tr>
<td>Powerless</td>
<td>Distress</td>
<td>.016 **</td>
</tr>
</tbody>
</table>

Figure 7.1 Path Model for Diagnoses Index using Perceived Internal Powerlessness—African Americans

Figure 7.2 Path Model for Diagnoses Index using Perceived Internal Powerlessness—European Americans

*Diagnoses Index.* For my path analysis by race, I first examined the African Americans’ and European Americans’ path models focused on the health variable Diagnoses Index, using perceived internal powerlessness and the other model variables perceived neighborhood disorder and psychological distress (Figures 7.1 and 7.2). I found notable differences between the models. Among
the three direct effects on the Diagnoses Index, only psychological distress was a statistically significant path for both African Americans (.250, p<.01) and European Americans (.143, p<.01). While no other direct effects were statistically significant, the direct effect of perceived internal powerlessness (.033) was larger than the direct effect of perceived neighborhood disorder (.021) on the Diagnoses Index for European Americans. The opposite was true for African Americans (.004 and .070, respectively). Therefore, perceived internal powerlessness has a stronger effect on the Diagnoses Index than perceived neighborhood disorder for European Americans, whereas perceived neighborhood disorder had a stronger effect for African Americans than perceived internal powerlessness.

Examining the paths that made up the indirect effects on the Diagnoses Index, I found the following. Comparing the paths from perceived neighborhood disorder to perceived internal powerlessness and to psychological distress, I discovered notable race differences between the models. Within the African American model, the path between perceived neighborhood disorder and perceived internal powerlessness was negative (-.084), whereas the path between perceived neighborhood disorder and psychological distress was positive (.120) and neither were statistically significant. Considering the European American model, both paths were positive and statistically significant. The path between perceived neighborhood disorder and perceived internal powerlessness was .214 (p<.01). The path between perceived neighborhood disorder and psychological distress was .230 (p<.01).
disorder and psychological distress was .088 ($p < .01$). The path between perceived internal powerlessness and psychological distress was positive and statistically significant for European Americans (.113, $p < .01$) but non-significant for African Americans (.057). The difference in directionality of the paths between perceived neighborhood disorder and perceived internal powerlessness, along with the difference in statistical significance (neither path for African Americans, but both paths for European Americans) shows that the model worked differently in this instance for African Americans and European Americans.

The three indirect effects of perceived neighborhood disorder on the Diagnoses Index—through perceived internal powerlessness, through psychological distress, and through both perceived internal powerlessness and psychological distress—exhibited differences between the race models. While no indirect effect was statistically significant in the African American model, the European American model contained two statistically significant indirect effects. Additionally, while two indirect effects were negative within the African American model, all were positive in the European American model. Specifically, the African American model contained two negative indirect effects, through perceived internal powerlessness (-.000) and through both perceived internal powerlessness and psychological distress (-.001). For African Americans, the indirect effect through psychological distress (.030) was positive and larger than the other indirect effects of perceived neighborhood disorder on the Diagnoses Index. Alternatively, the European American model contained two statistically
significant indirect effects, through psychological distress (.012, \(p \leq .01\)) and through both perceived internal powerlessness and psychological distress (.003, \(p \leq .01\)). The indirect effect through perceived internal powerlessness was positive (.007), yet non-significant. Further, the combined indirect effects of perceived neighborhood disorder on the Diagnoses Index was smaller than the direct effect for African Americans (.029 compared to .070), but similar in strength for European Americans (.022 compared to .021).

The indirect effect of perceived internal powerlessness through psychological distress on the Diagnoses Index was positive for both models, but statistically significant only for European Americans (.016, \(p \leq .01\), compared to .014 for African Americans). Considering the strength of the indirect effects, for African Americans the indirect effect (.014) was stronger than the direct effect of perceived internal powerlessness on the Diagnoses Index (.004). Alternatively, the indirect effect (.016) was weaker than the direct effect (.033) for European Americans. However, the difference in significance might be attributed to the difference in sample size, considering the African American sample size was much smaller than the European American sample size.

In general, the path models for explaining the Diagnoses Index, using perceived neighborhood disorder, perceived internal powerlessness, and psychological distress contained notable differences. Psychological distress was the only statistically significant direct effect on the Diagnoses Index in the African American model. Alternatively, the European American model contained three
additional statistically significant paths, between perceived neighborhood disorder and perceived internal powerlessness, between perceived neighborhood disorder and psychological distress, and between perceived internal powerlessness and psychological distress. While the direct effect of perceived neighborhood disorder on the Diagnoses Index was positive but non-significant for both models, the directionality was different by race in the paths from disorder to perceived internal powerlessness. Therefore, the resultant indirect effects of perceived neighborhood disorder on the Diagnoses Index were also different in directionality and statistical significance by race. I found two positive statistically significant indirect effects from perceived neighborhood disorder and the Diagnoses Index for European Americans, whereas all indirect effects for African Americans were non-significant. The African American model contained two negative indirect effects, whereas the European American model contained no negative indirect effects. Therefore, the negative indirect effects for African Americans (through perceived internal powerless and through both perceived internal powerlessness and psychological distress) were positive indirect effects for European Americans. These model comparisons indicated that experiencing perceived neighborhood disorder had a different impact on African Americans than on European Americans when predicting number of diagnoses. Overall, it appeared that perceived neighborhood disorder had more statistically significant predictive power through indirect effects on the Diagnoses Index for European Americans than for African Americans within this configuration of variables.
Next, I examined the African Americans’ and European Americans’ path models focused on the health variable Diagnoses Index, using perceived external powerlessness and the other model variables (perceived neighborhood disorder and psychological distress, figures 7.3 and 7.4). I again found notable similarities and differences between the models. Among the three direct effects on the Diagnoses Index, again only psychological distress was a statistically significant effect for both African Americans (.252, p < .01) and European Americans (.145, p < .01). While no other direct effects were statistically significant, for African Americans the direct effect of perceived external powerlessness on the
Diagnoses Index was negative (-.009), whereas the direct effect of perceived neighborhood disorder was positive (.070). For European Americans, the direct effects of both perceived external powerlessness and perceived neighborhood disorder were positive (.010 and .026, respectively).

Examining the paths that made up the indirect effects of perceived neighborhood disorder on the Diagnoses Index, I found the following. While perceived neighborhood disorder had a positive, yet non-significant impact on perceived external powerlessness (.018) for African Americans, the path was both positive and significant for European Americans (.137, p≤.01). Similarly, perceived neighborhood disorder had a positive, yet non-significant impact on psychological distress (.110) for African Americans, but the path was both positive and statistically significant for European Americans (.090, p≤.01). The two models were similar in that the path between perceived external powerlessness and psychological distress was positive and statistically significant for both African and European Americans (.203, p≤.05 and .163, p≤.01, respectively).

The three indirect effects of perceived neighborhood disorder on the Diagnoses Index—through perceived external powerlessness, through psychological distress, and through both perceived external powerlessness and psychological distress—also yielded differences between the models. While non-significant, the indirect effect of perceived neighborhood disorder on the number of diagnoses through perceived external powerlessness was positive in direction
for European Americans (.001), yet negative for African Americans (-.000).

Alternatively, while both paths were positive in direction, the indirect effect of perceived neighborhood disorder on the number of diagnoses through psychological distress was statistically significant for European Americans (.013, p<.01), yet non-significant for African Americans (.028). Considering the indirect effect of perceived neighborhood disorder through both perceived external powerlessness and psychological distress, the effect was positive, yet non-significant for African Americans (.001). For European Americans, however, the indirect effect from perceived neighborhood disorder through both perceived external powerlessness and psychological distress was positive and statistically significant (.003, p<.01). The combined indirect effects were very small for both races (.029 for African Americans and .017 for European Americans). In both models, the combined indirect effects of perceived neighborhood disorder on the Diagnoses Index were smaller than the direct effect (.070 for African Americans and .026 for European Americans).

The indirect effect of perceived external powerlessness through psychological distress on the Diagnoses Index was statistically significant but small for both African Americans (.051) and for European Americans (.024). For both African and European Americans, this indirect effect was larger in size than the direct effect of perceived external powerlessness on the Diagnoses Index (-.009 and .010, respectively) and changed from negative to positive in direction for African Americans. The change in direction in the African American model
showed that by simply examining the direct effect of perceived external powerlessness on the Diagnoses Index does not show the actual dynamics within the relationship.

In general, the path models for predicting the Diagnoses Index, using perceived neighborhood disorder, perceived external powerlessness, and psychological distress contained notable differences. While the direct effect of perceived neighborhood disorder on the Diagnoses Index was positive but non-significant for both models, the directionality of the indirect effects of perceived neighborhood disorder on the Diagnoses Index was different by race. The indirect effect was negative through perceived external powerlessness, but positive through psychological distress for African Americans, whereas, for European Americans the indirect effect was positive and non-significant through perceived external powerlessness, but positive and statistically significant through psychological distress. The indirect effect of perceived neighborhood disorder on the Diagnoses Index, through both perceived external powerlessness and psychological distress, was positive for both races, but statistically significant only for European Americans. In sum, experiencing perceived neighborhood disorder had a different impact on African Americans than on European Americans when predicting number of diagnoses.

Comparing the impact of using perceived internal or external powerlessness, I found the following. Neither measure of powerlessness had statistically significant direct effects on the Diagnoses Index. While all were non-
significant, the direct effect was negative for perceived external powerlessness for African Americans. All other direct effects were positive. Considering the indirect effect of perceived powerlessness on the Diagnoses Index, for all models the path from perceived powerlessness to psychological distress was positive and statistically significant, except for perceived internal powerlessness within the African American model. With the exception of the previously mentioned model, the indirect effect of perceived powerlessness on the Diagnoses Index was positive and statistically significant. Considering the models containing perceived internal powerlessness, for African Americans the indirect effect was non-significant (.014) but larger than the direct effect on the Diagnoses Index. Alternatively, for European Americans, the indirect effect was statistically significant (.016, p<.01), but smaller than the direct effect (.033). For both African and European Americans, the indirect effect was larger in size than the direct effect of perceived external powerlessness on the Diagnoses Index (-.009 and .010, respectively) and changed from negative to positive direction for African Americans. The change in direction in the African American model showed that by simply examining the direct effect of perceived external powerlessness on the Diagnoses Index did not show the actual dynamics within the relationship.
Figure 7.5 Path Model of Self-Reported Overall Health using Perceived Internal Powerlessness—African Americans

- Perceived Internal Powerlessness
  - Perceived Neighborhood Disorder
    - Psychological Distress
      - Self-Reported Overall Health

Perceived Internal Powerlessness
- .084
- .087
- .120
- .057
- .078
- .192**

Figure 7.6 Path Model of Self-Reported Overall Health using Perceived Internal Powerlessness—European Americans

- Perceived Internal Powerlessness
  - Perceived Neighborhood Disorder
    - Psychological Distress
      - Self-Reported Overall Health

Perceived Internal Powerlessness
- .214**
- .075**
- .088**
- .113**
- .086**
- .218**

Self-Reported Overall Health. Next, I examined the African American and European American path models focused on the health variable Self-Reported Overall Health, using perceived internal powerlessness and the other model variables (perceived neighborhood disorder and psychological distress, figures 7.5 and 7.6). Among the three direct effects on self-reported overall health, all were positive in direction, but only psychological distress was statistically significant for African Americans (\( .192, p \leq .05 \)). Alternatively, all three direct effects were positive and statistically significant for European Americans (psychological distress .218, perceived internal powerlessness .086, and perceived neighborhood disorder .075, all \( p \leq .01 \)).
Examining the paths that made up the indirect effects of perceived neighborhood disorder on self-reported overall health, I found the following. Comparing the paths, perceived neighborhood disorder appeared to have impacted perceived internal powerlessness and psychological distress differently by race. While both were non-significant within the African American model, the path between perceived disorder and perceived internal powerlessness was negative (-.084), whereas, the path between perceived disorder and psychological distress was positive (.120). Within the European American model, both paths between perceived disorder and perceived internal powerlessness and psychological distress were positive and statistically significant (.214 and .088, p<.01, respectively). The path between perceived internal powerlessness and psychological distress was positive and statistically significant for European Americans (.113, p<.01), but non-significant for African Americans (.057). Considering that all of the paths were statistically significant for European Americans, whereas all were non-significant for African Americans, this showed that my model worked differently in this instance for these two races.

The three indirect effects of perceived neighborhood disorder on the self-reported overall health—through perceived internal powerlessness, through psychological distress, and through both perceived internal powerlessness and psychological distress—also yielded differences between the models. The indirect effect of perceived neighborhood disorder on self-reported overall health through perceived internal powerlessness was both negative in direction and
non-significant for African Americans (-.006), but positive and statistically significant for European Americans (.018, \(p<.01\)). The indirect effect of perceived neighborhood disorder on self-reported overall health through psychological distress was positive in direction for both models, but non-significant for African Americans (.023) and statistically significant for European Americans (.019, \(p<.01\)). The indirect effect of perceived neighborhood disorder on overall health, through both perceived internal powerlessness and psychological distress, was non-significant for African Americans (.001), but positive and statistically significant for European Americans (.003, \(p<.01\)). The combined indirect effects were very small for both races, with .018 for African Americans and .030 for European Americans. In both models, the combined indirect effect of perceived neighborhood disorder on self-reported overall health was smaller than the direct effect between the variables (.087 for African Americans and .075 for European Americans).

The indirect effect of perceived internal powerlessness on self-reported health through psychological distress was positive in direction for both races, but non-significant for African Americans (.011) and statistically significant for European Americans (.025, \(p<.01\)). For both African and European Americans, this indirect effect was smaller in size than the direct effect of perceived internal powerlessness on self-reported health (.078 and .086, respectively).

In general, the path models for predicting self-reported overall health, using perceived neighborhood disorder, perceived internal powerlessness, and
psychological distress yielded quite different outcomes. The direct effect of psychological distress on self-reported overall health was the only statistically significant path within the African American model. Further, the path between perceived neighborhood disorder and perceived internal powerlessness was negative for African Americans, causing the resultant indirect effects of neighborhood disorder through internal powerlessness, and through both internal powerlessness and psychological distress to be negative in direction. Alternatively, all paths within the European American model were positive and statistically significant. My findings indicated that this model had more predictive power for European Americans than for African Americans. In other words, experiencing perceived neighborhood disorder had a stronger impact on predicting self-reported overall health for European Americans than for African Americans, when utilizing this configuration of variables.

Figure 7.7 Path Model for Self-Reported Overall Health using Perceived External Powerlessness—African Americans

![Path Model](image-url)
Lastly, I examined the African Americans’ and European Americans’ path models focused on the health variable self-reported overall health, using perceived external powerlessness and the other model variables (perceived neighborhood disorder and psychological distress, figures 7.7 and 7.8). Among the three direct effects on self-reported overall health, only psychological distress was a statistically significant effect for African Americans ($0.180$, $p < 0.05$), whereas all variables were positive and statistically significant for European Americans (perceived neighborhood disorder $0.084$, psychological distress $0.216$, and perceived external powerlessness $0.073$, all $p < 0.01$). This is a similar finding as in the models with perceived internal powerlessness.

Examining the paths that made up the indirect effects of perceived neighborhood disorder on self-reported overall health, I found the following. All paths were positive in direction for both models. All were also non-significant for African Americans, whereas all were statistically significant for European Americans. Within both models, the path between perceived external powerlessness and psychological distress was positive and significant ($0.203$, $p < 0.05$ for African Americans and $0.163$, $p < 0.01$ for European Americans).
The three indirect effects of perceived neighborhood disorder on self-reported overall health—through perceived external powerlessness, through psychological distress, and through both perceived external powerlessness and psychological distress—also showed differences among the race models. All indirect effects were positive, yet non-significant for African Americans. The indirect effect of perceived neighborhood disorder on self-reported overall health through perceived external powerlessness was .002; through psychological distress was .020, and through both external powerlessness and psychological distress was .001. Alternatively, all indirect effects were positive and statistically significant for European Americans. The indirect effect of perceived neighborhood disorder on self-reported overall health through perceived external powerlessness was .010 (p<.01); through psychological distress was .019 (p<.01), and through both external powerlessness and psychological distress was .005 (p<.01). The combined indirect effects of perceived neighborhood disorder on self-reported overall health were small for both races, with .023 for African Americans and .034 for European Americans. In both cases, the indirect effects were smaller than the direct effects of perceived neighborhood disorder on self-reported overall health (.079 for African Americans and .084 for European Americans).

The indirect effect of perceived external powerlessness through psychological distress on self-reported overall health was positive and statistically significant for both African Americans (.036, p<.05) and for European
Americans (.035, p<.01). For both African and European Americans, however, this indirect effect was smaller in size than the direct effect of perceived external powerlessness on self-reported health (.100 and .073, respectively).

As with the models containing perceived internal powerlessness, the path models for predicting the self-reported overall health, using perceived neighborhood disorder, perceived external powerlessness, and psychological distress contained notable differences. Again, the direct effect of psychological distress on self-reported overall health was the only statistically significant path within the African American model. While all paths within the models were positive in direction, the African American model had all non-significant paths and indirect effects of perceived neighborhood disorder on self-reported overall health. Alternatively, all paths within the European American model were positive and statistically significant. The indirect effect of perceived external powerlessness on self-reported overall health through psychological distress was, however, positive and statistically significant for both African Americans and European Americans. My findings indicated that this model had more predictive power for European Americans than for African Americans. In other words, experiencing perceived neighborhood disorder had a stronger impact on predicting self-reported overall health for European Americans than for African Americans, when utilizing this configuration of variables.

**Overall Race Findings.** Examining all four models predicting the number of diagnoses, I discovered the following patterns. The only statistically significant
direct effect on the number of diagnoses one possesses was from psychological distress; all other direct effects were statistically non-significant. While non-significant, only perceived external powerlessness within the African American model was negative. All other direct effects on the Diagnoses Index were positive. Comparing the indirect effects by race, I found that the indirect effects from perceived neighborhood disorder on the Diagnoses Index through both measures of powerlessness were negative for African Americans, but positive for European Americans. Alternatively, the indirect effects of perceived neighborhood disorder on the Diagnoses Index through psychological distress were positive for both African Americans and European Americans. The indirect effects of perceived neighborhood disorder on the Diagnoses Index through both perceived powerlessness and psychological distress were positive, except in the perceived internal powerlessness model for African Americans. Additionally, the effect was non-significant for African Americans but statistically significant for European Americans. While all relationships were statistically small, these findings lend credence to my suggestion that the model worked differently by race.

The models predicting self-reported overall health were similar in their general patterns to the models predicting number of diagnoses. Again, the direct effect of psychological distress was consistently statistically significant in all models. Most notably, all paths within the models predicting self-reported overall health for European Americans were positive and statistically significant. For
African Americans, only the direct effect of psychological distress on self-reported health, and the path between perceived external powerlessness and psychological distress were significant. This illustrated that my model had more predictive power for European Americans than for African Americans, using this configuration of variables. Next, I discuss the class subgroup analysis.

**Class**

Table 7.3 Direct and Indirect Effects for Path Models-Lower Class (N=641)

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Table 7.4 Direct and Indirect Effects for Path Models-Higher Class (N=1472)

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<td>Distress</td>
<td>.133 **</td>
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<td><strong>Indirect Effects</strong></td>
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<tr>
<td>Power/Dist</td>
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Diagnoses Index. For my path analysis of class, I began by examining lower class and higher class groups’ path models including perceived neighborhood disorder, perceived internal powerlessness, and psychological distress, to predict the Diagnoses Index. Considering the direct effects on the Diagnoses Index, only psychological distress was statistically significant for both the lower and higher class groups (.176 and .133, respectively, both $p < .01$). While no other direct effects were statistically significant, the direct effect of perceived internal powerlessness (.057) was larger than the direct effect of perceived neighborhood disorder (.039) on the Diagnoses Index for the lower class group. For the higher class group, the direct effect of perceived neighborhood disorder (.017) was similar in size to the direct effect of perceived internal powerlessness (.019) and both positive.

Examining the paths that made up the indirect effects of perceived neighborhood disorder on the Diagnoses Index, I found that the models were
quite similar. The paths from perceived neighborhood disorder to perceived internal powerlessness were statistically significant and positive in both models (.138 for lower class, and .201 for higher class, both p<.01) as were the paths to psychological distress (.127 at p≤.05 for lower class, and .090 at p≤.01 for higher class). In both instances, the path to perceived internal powerlessness was larger than the path to psychological distress. The path from perceived internal powerlessness to psychological distress was statistically significant for both class groups (.150, p≤.01 for lower, and .085, p≤.01 for higher).

The three indirect effects of perceived neighborhood disorder on the Diagnoses Index—through perceived internal powerlessness, through psychological distress, and through both perceived internal powerlessness and psychological distress—were also similar in outcome by class. The indirect effect of perceived neighborhood disorder on the Diagnoses Index through perceived internal powerlessness was non-significant for both the lower class (.008) and the higher class (.004) groups. The two remaining indirect effects were statistically significant in both models. Specifically, through psychological distress, the indirect effect for the lower class model was .022 (p<.05) and .012 (p<.01) for the higher class model. The indirect effect through both perceived internal powerlessness and psychological distress was .004 (p≤.01) for the lower class model and .002 (p≤.01) for the higher class model. This was interesting, considering the direct effect of perceived neighborhood disorder on the Diagnoses Index was non-significant. The combined indirect effects of
neighborhood disorder on the Diagnoses Index were slightly smaller, however, than the direct effect for the lower class model (.034 compared to .039), but similar in size for the higher class model (.018 combined and .017 direct).

The indirect effect of perceived internal powerlessness on the Diagnoses Index—through psychological distress—was statistically significant for both models (.026 at \( p < .01\) for the lower class model and .011 at \( p < .01\) for the higher class model). This, again, was interesting considering that the direct effect for both models was statistically non-significant (.057 and .019, respectively). For both classes, the indirect effect better illustrated the impact of perceived internal powerlessness on the Diagnoses Index than did the direct effect.

In general, the models predicting the Diagnoses Index, including perceived neighborhood disorder, perceived internal powerlessness, and psychological distress for the lower and higher class groups, were quite similar. For both groups, the only statistically significant direct effect on the Diagnoses Index was psychological distress. Comparing the paths that created the indirect effects, only the path between perceived internal powerlessness and psychological distress was statistically significant. This significant path, however, combined with the significant direct effect of psychological distress, created a significant indirect effect to the Diagnoses Index through psychological distress, whereas the direct effect of perceived internal powerlessness on the Diagnoses Index was non-significant.
Next, I compared the class models for perceived neighborhood disorder, perceived external powerlessness, psychological distress, and the Diagnoses Index. Considering the three direct effects on the Diagnoses Index, again only psychological distress was statistically significant for both lower class \((.190, p < .01)\) and higher class \((.130, p < .01)\). While no other direct effects were statistically significant, the direct effect of perceived external powerlessness was negative for the lower class group \((-0.038)\), but positive for the higher class group \((0.033)\). The difference in direction indicated that perceived external powerlessness impacted the number of diagnoses differently by class. The direct effect of perceived neighborhood disorder was positive and non-significant for both class groups \((0.046 \text{ for lower class and } 0.016 \text{ for higher class})\). Notably, for the higher class group, the direct effect of perceived external powerlessness was stronger than perceived neighborhood disorder on the Diagnoses Index. Alternatively, for the lower class group, perceived neighborhood disorder was stronger and in the opposite direction than perceived external powerlessness.
Examining the paths that made up the indirect effects on the Diagnoses Index within the models, I found the following. A notable difference was that the path between perceived neighborhood disorder and perceived external powerlessness was statistically significant for the higher class group (.156, \( p < .01 \)), but was non-significant for the lower class group (.053). The path between perceived neighborhood disorder and psychological distress was statistically significant for both groups (.137 for the lower class model and .082 for the higher class model, both \( p < .01 \)). The path between perceived external powerlessness and psychological distress was also statistically significant for both groups (.187 for lower class and .158 for higher class, both \( p < .01 \)).

Examining the three indirect effects of perceived neighborhood disorder on the Diagnoses Index—through perceived external powerlessness, through psychological distress, and through both perceived external powerlessness and psychological distress—I found the following. For the lower class group, only the indirect effect through psychological distress was statistically significant (.026, \( p \leq .05 \)). In fact, the indirect effect through perceived external powerlessness was non-significant and negative in direction (-.002). The higher class group, however, had two statistically significant direct effects—through psychological distress (.011, \( p \leq .01 \)) and through both perceived external powerlessness and psychological distress (.003, \( p \leq .01 \)). The combined indirect effects of perceived neighborhood disorder on the Diagnoses Index were smaller than the direct effect for the lower class model (.026 compared to .046), but slightly larger than
the direct effect for the higher class model (.019 compared to .016). Considering the statistical significance of two indirect effects, my comparison shows that this model provides a clearer picture of the relationship between perceived neighborhood disorder and the Diagnoses Index for the higher class group than by solely examining the direct effect.

The indirect effect of perceived external powerlessness—through psychological distress—on the Diagnoses Index was positive and statistically significant for both groups (.035 for the lower class model and .020 for the higher class model, both $p < .01$). For both classes, the indirect effect better illustrated the impact of perceived external powerlessness on the Diagnoses Index than did the direct effect. For the lower class group, comparing the indirect to the direct effect of perceived external powerlessness on the Diagnoses Index showed the effect changed from negative to positive in direction (from -0.038 to 0.035). This caused the combined effects to appear to be .000, masking the dynamics of the relationship.

In general, the path models predicting the Diagnoses Index using perceived neighborhood disorder, perceived external powerlessness, and psychological distress contained a few notable differences. When predicting the number of diagnoses, the models containing perceived external powerlessness operated differently for the lower and higher class groups. While non-significant, the direct effect of perceived external powerlessness on the Diagnoses Index was negative for the lower class group, but positive for the higher class group.
The indirect effect of perceived external powerlessness on the Diagnoses Index, however, was positive for both groups. Considering the paths within the indirect effects, the path between perceived neighborhood disorder and perceived external powerlessness was statistically significant for the lower class group, but non-significant for the higher class group. The indirect effect of perceived neighborhood disorder on the Diagnoses Index through perceived external powerlessness was negative for the lower class group, but positive for the higher class group. The indirect effect of perceived neighborhood disorder on the Diagnoses Index through both perceived external powerlessness and psychological distress was statistically significant for both groups. As with previous models, psychological distress was positive and the only statistically significant direct effect on the Diagnoses Index for both lower and higher class groups.

Comparing the impact of using perceived internal or external powerlessness in the models, I found the following. Neither measure of powerlessness had statistically significant direct effects on the Diagnoses Index for either group. While all were non-significant, the direct effect was negative for perceived external powerlessness within the lower class group. In all other instances, the direct effects were positive. Considering the indirect effects of powerlessness on the Diagnoses Index, for all models the paths between powerlessness and psychological distress were positive and statistically significant, all at the $p \leq 0.01$ level. Considering that the paths from psychological
distress to the Diagnoses Index were also positive and statistically significant (all at the $p < .01$ level), the resultant indirect effect of perceived powerlessness was statistically significant. In contrast, all the direct effects were non-significant.

Within the lower class model, the indirect effect of perceived external powerlessness on the Diagnoses Index changed from negative and non-significant to positive and significant ($-0.038$ to $0.038$). This caused the combined effects to appear to be $0.000$, masking the dynamics of the relationship.

**Self-Reported Overall Health.** Next, I examined the path models predicting my second health outcome—self-reported overall health. I began with the class models for perceived neighborhood disorder, perceived internal powerlessness, psychological distress, and self-reported overall health. The direct effect of perceived neighborhood disorder on self-reported overall health was non-significant for the lower class model ($0.054$), but statistically significant for the
higher class model (.079, p<.01). Alternatively, both perceived internal powerlessness (.142 for lower class and .067 for higher class, both p<.01) and psychological distress (.292 for lower class and .156 for higher class, both p<.01) were positive and statistically significant in each class model. For the higher class model, perceived neighborhood disorder had a stronger direct effect on self-reported overall health than did perceived internal powerlessness. The opposite was true for the lower class group.

Before examining the indirect effects on self-reported overall health, I looked at the paths within the models. The path between perceived neighborhood disorder and perceived internal powerlessness was positive and statistically significant in both class models (.138 for lower class and .201 for higher class, both p<.01). Likewise, the path between perceived neighborhood disorder and psychological distress was positive and statistically significant in both class models (.127, p<.05, for lower class and .090, p<.01, for higher class). Lastly, the path between perceived internal powerlessness and psychological distress was positive and statistically significant in both class models (.150 for lower class and .085 for higher class, both p<.01).

The three indirect effects of perceived neighborhood disorder on self-reported overall health—through perceived internal powerlessness, through psychological distress, and through both perceived internal powerlessness and psychological distress—were positive in direction and statistically significant for both models. Specifically, the indirect effect of perceived neighborhood disorder
on self-reported health through perceived internal powerlessness was .020 for the lower class group and .013 for the higher class group, both \( p < .01 \). The indirect effect through psychological distress was .037 (\( p < .05 \)) for the lower class group and .014 (\( p < .01 \)) for the higher class group. Lastly, the indirect effect through both perceived internal powerlessness and psychological distress was .006 for the lower class group and .001 for the higher class group, both \( p < .01 \).

The combined indirect effects of perceived neighborhood disorder on self-reported overall health was slightly larger (.063) than the non-significant direct effect (.054) for the lower class group. Alternatively, the combined indirect effects (.028) were smaller than the significant direct effect (.079) for the higher class group.

The indirect effect of perceived internal powerlessness—through psychological distress—on self-reported overall health was statistically significant (\( p < .01 \)) for both the lower class (.044) and the higher class group (.013). For both groups, however, the indirect effect was smaller than the direct effect of perceived internal powerlessness on self-reported overall health (.142 and .067, respectively).

While similar, the models predicting self-reported overall health, using perceived neighborhood disorder, perceived internal powerlessness, and psychological distress illuminated an interesting difference between the lower class and higher class models. For the lower class, the direct effect of perceived neighborhood disorder on self-reported overall health was non-significant.
However, all the indirect effects were statistically significant. In sum, for the lower class group a clearer understanding of the relationship between perceived neighborhood disorder and self-reported overall health emerged when including indirect paths in the analyses. For the higher class group, all paths and effects were positive and statistically significant using this configuration of variables.

**Figure 7.15 Path Model for External Powerlessness and Self-Reported Overall Health—Lower Class**

```
Perceived Neighborhood Disorder  
\[.053\] \[.069\] \[.187^{**}\] \[.032\] \[.017^{*}\] \[.305^{**}\]
External Powerlessness            Self-Reported Overall Health  
Psychological Distress           
```

**Figure 7.16 Path Model for External Powerlessness and Self-Reported Overall Health—Higher Class**

```
Perceived Neighborhood Disorder  
\[.156^{**}\] \[.078^{**}\] \[.188^{**}\] \[.098^{**}\] \[.082^{**}\] \[.147^{**}\]
External Powerlessness            Self-Reported Overall Health  
Psychological Distress           
```

Lastly, I examined the lower class and higher class path models for perceived neighborhood disorder, perceived external powerlessness, psychological distress, and self-reported overall health. Among the three direct effects on self-reported overall health, all were positive in direction but psychological distress was the only statistically significant direct effect for the lower class group (.305, p < .01). While non-significant, the direct effect of perceived neighborhood disorder (.069) on self-reported overall health was larger than the direct effect of perceived external powerlessness (.032). For the higher class group, all three direct effects were positive and statistically significant.
Specifically, the direct effects were .078 (p<.01) for perceived neighborhood disorder, .098 (p<.01) for perceived external powerlessness, and .147 (p<.01) for psychological distress. Comparing the models, psychological distress was statistically significant and the largest direct effect for both the lower and higher class. For the higher class group, the direct effect of perceived external powerlessness on self-reported overall health was larger than the direct effect of perceived neighborhood disorder.

Examining the paths that made up the indirect effects, I found the following. For the lower class model, the path from perceived neighborhood disorder to perceived external powerlessness was positive, yet non-significant (.053). Alternatively, the path was positive and statistically significant (.156, p<.01) within the higher class model. For both models, the path from perceived neighborhood disorder to psychological distress was positive and statistically significant (.017, p<.05, for lower class and .082, p<.01 for higher class), as was the path from perceived external powerlessness to psychological distress (.187 for lower class and .158 for higher class, both p<.01).

By examining the indirect effects within these models, my analysis revealed further class differences. The three indirect effects of perceived neighborhood disorder on self-reported overall health—through perceived external powerlessness, through psychological distress, and through both perceived external powerlessness and psychological distress—were positive in direction in all instances. For the lower class group, the only statistically
significant indirect effect of perceived neighborhood disorder on self-reported overall health was through psychological distress (.042, p < .05). For the higher class group, however, all the indirect effects were statistically significant. Specifically, the indirect effect for through perceived external powerlessness was .015 (p < .01), through psychological distress was .012 (p < .01), and through both perceived external powerlessness and psychological distress was .004 (p < .01). The combined indirect effects of perceived neighborhood disorder on self-reported overall health was smaller than the direct effect for both the lower (.047 compared to .069) and higher class model (.031 compared to .078).

The indirect effect of perceived external powerlessness—through psychological distress—on self-reported overall health was statistically significant for both classes (.057 for lower class and .023 for higher class, both p < .01). Interestingly, the direct effect of perceived external powerlessness for the lower class group was non-significant. Therefore, the indirect effect better illustrated the impact of external powerlessness on self-reported overall health for the lower class group. Alternatively, both the direct and indirect effects were statistically significant for the higher class group. The indirect effect was larger than the direct effect in the lower class model (.057 compared to .032), but smaller for the higher class model (.023 compared to .098).

In general, the path models predicting self-reported overall health using perceived neighborhood disorder, perceived external powerlessness, and psychological distress contained notable differences. In the higher class model
all three direct effects were statistically significant, while the lower class model contained only one statistically significant direct effect (from psychological distress). The models were also different in that the path between perceived neighborhood disorder and perceived external powerlessness was statistically significant for the higher class group, but not for the lower class group. Therefore, for the lower class group, the only statistically significant indirect effect of perceived neighborhood disorder on self-reported overall health was through psychological distress. This result was notable; however, considering the direct effect of perceived neighborhood disorder on self-reported overall health was non-significant. In contrast, all indirect effects of perceived neighborhood disorder on self-reported overall health were statistically significant. For both classes, the indirect effect of perceived external powerlessness on self-reported overall health through psychological distress was statistically significant. While the direct effect of external powerlessness on self-reported overall health was also statistically significant for the higher class group, the direct effect for the lower class group was non-significant. Therefore, the significant indirect effect for the lower class group illuminated the impact of perceived external powerlessness on self-reported overall health.

Comparing the impact of using perceived internal and external powerlessness in the class models, I found the following. For the higher class model, the effect of perceived internal or external powerlessness was the same. Both variables of powerlessness were positive and statistically significant in their
direct and indirect effects on self-reported overall health. Additionally, the path to both perceived powerlessness variables from perceived neighborhood disorder was positive and statistically significant. In other words, perceived internal and external powerlessness were both important variables when predicting self-reported overall health. Alternatively, for the lower class group, perceived internal powerlessness appeared to have more predictive power than perceived external powerlessness. Within the model containing perceived internal powerlessness, the direct and indirect effects on self-reported overall health were positive and statistically significant. Additionally, the path to perceived internal powerlessness from perceived neighborhood disorder was positive and statistically significant. The direct effect of perceived external powerlessness on self-reported overall health, however, was non-significant, as was the path from perceived neighborhood disorder to perceived external powerlessness. The indirect effect of both variables of perceived powerlessness was statistically significant for the lower class models. Therefore, examining the indirect effect of perceived external powerlessness on self-reported overall health for the lower class group clarified the relationship more so than the direct effect.

Comparing the models’ predictive power for my health outcomes, I found the following. Overall, when predicting the number of diagnoses one possesses, using perceived internal powerlessness, the models were similar in statistical significance and direction. For both classes, the direct effect of perceived neighborhood disorder on the Diagnoses Index was non-significant. However,
perceived neighborhood disorder had a significant indirect effect through psychological distress and both perceived internal powerlessness and psychological distress. When utilizing perceived external powerlessness, the model had more significant paths for the higher class model. Again, while the direct effect of perceived neighborhood disorder was non-significant, the higher class model possessed more significant indirect effects than the lower class model.

Considering the models to predict self-reported overall health, the models were more predictive for higher class than for lower class. For the lower class, the direct effect of perceived neighborhood disorder on self-reported overall health was non-significant. Alternatively, the effect was significant within the higher class model. In fact, all the paths were significant for the higher class model. When utilizing perceived internal powerlessness within the lower class model, only perceived neighborhood disorder was non-significant. When utilizing perceived external powerlessness, both perceived external powerlessness and perceived neighborhood disorder were non-significant. In sum, the models appear to have more predictive power for the higher class when predicting self-reported overall health. Next, I examine the subgroup analysis for gender.
Table 7.5 Direct and Indirect Effects for Path Models—Women (N=1467)

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<td>Distress</td>
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<td>.134 **</td>
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</table>

Indirect Effects

| Disorder       | Powerless | .005 | -.002 | .012 ** | .003 |
| Distress       | .011 * | .010 * | .018 ** | .017 ** |
| Power/Dist     | .002 ** | .003 ** | .002 ** | .005 ** |
| Combined       | .018 | .011 | .032 | .025 |
| Powerless      | Distress | .013 ** | .025 ** | .021 ** | .040 ** |

Table 7.6 Direct and Indirect Effects for Path Models—Men (N=1015)

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<td>Distress</td>
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<td>.202 **</td>
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</table>

Indirect Effects

| Disorder       | Powerless | .005 | .007 | .022 ** | .022 ** |
| Distress       | .028 ** | .028 ** | .029 ** | .029 ** |
| Power/Dist     | .004 ** | .004 ** | .002 ** | .004 ** |
| Combined       | .037 | .039 | .053 | .055 |
| Powerless      | Distress | .022 ** | .026 ** | .023 ** | .027 ** |

Figure 7.17 Path Model for Internal Powerlessness and Diagnoses Index—Women

Figure 7.18 Path Model for Internal Powerlessness and Diagnoses Index—Men
For my path analysis by gender, I first examined the women’s and men’s path models focused on the health variable Diagnoses Index, using perceived internal powerlessness, perceived neighborhood disorder, and psychological distress (Figures 7.17 and 7.18). The models were quite similar. Among the three direct effects on the Diagnoses Index, only psychological distress was statistically significant for both women (\( .129, p < .01 \)) and men (\( .206, p < .01 \)). While no other direct effects were statistically significant, for men the direct effect of perceived internal powerlessness (\( .024 \)) was larger than the direct effect of perceived neighborhood disorder (\( .005 \)) on the Diagnoses Index. The opposite was true for women (\( .045 \) for perceived neighborhood disorder and \( .026 \) for perceived internal powerlessness).

Therefore, perceived internal powerlessness had a stronger direct effect on the Diagnoses Index than perceived neighborhood disorder for men, whereas perceived neighborhood disorder had a stronger direct effect than perceived internal powerlessness for women, when using this configuration of variables.

Examining the paths that made up the indirect effects on the Diagnoses Index, I found the following. Comparing the paths from perceived neighborhood disorder to perceived internal powerlessness and to psychological distress, I again found similarities between the models. For both women and men, all paths were positive and statistically significant. Specifically, the path between perceived neighborhood disorder and perceived internal powerlessness was \( .187 \) (\( p < .01 \)) for women and \( .193 \) (\( p < .01 \)) for men. The path between perceived
neighborhood disorder and psychological distress was .085 ($p < .05$) for women and .136 ($p < .01$) for men. Therefore, while both paths were significant, the path between perceived neighborhood disorder and perceived internal powerlessness was stronger than the path to psychological distress for both women and men. The path between perceived internal powerlessness and psychological distress was, again, positive and statistically significant ($p < .01$) for both women and men (.099 and .105, respectively).

The three indirect effects of perceived neighborhood disorder on the Diagnoses Index—through perceived internal powerlessness, through psychological distress, and through both perceived internal powerlessness and psychological distress—exhibited continuing similarities for women and men. The indirect effect of perceived neighborhood disorder on the Diagnoses Index through perceived internal powerlessness was positive, yet non-significant for both women and men (.005 for both). The two additional indirect effects, through psychological distress (.011 ($p < .05$) for women and .028 ($p < .01$) for men), and through both perceived internal powerlessness and psychological distress (.002 ($p < .01$) for women and .004 ($p < .01$) for men), were positive and statistically significant for both models. Interestingly, the combined indirect effects (.018) of perceived neighborhood disorder on the Diagnoses Index was smaller than the direct effect (.045) for women, but larger than the direct effect (.037 compared to .005) for men.
The indirect effect of perceived internal powerlessness through psychological distress on the Diagnoses Index was positive for both women and men. Again, the findings were similar for both genders. For women, the indirect effect was .013 (p<.01) and for men the indirect effect was .022 (p<.01). The indirect effect through psychological distress was smaller than the direct effect of perceived internal powerlessness on the Diagnoses Index for both genders (.026 for women and .024 for men).

In general, the path models for predicting the Diagnoses Index, using perceived neighborhood disorder, perceived internal powerlessness, and psychological distress, contained little notable difference between women and men. Consistently, the largest and only statistically significant direct effect on the Diagnoses Index was psychological distress for both models. While non-significant, the direct effect of perceived neighborhood disorder on the Diagnoses Index was stronger than the direct effect of perceived internal powerlessness for women; but the opposite was found for men. Both women and men had two statistically significant indirect effects. Therefore, for both women and men the direct effect of perceived neighborhood disorder on the Diagnoses Index was non-significant; but when I examined the indirect effects, I found two statistically significant indirect effects, through psychological distress and through both perceived internal powerlessness and psychological distress. While no notable gender differences existed in the indirect effects, the combined indirect effects
were smaller than the direct effect of perceived neighborhood disorder on the Diagnoses Index for women, but larger than the direct effect for men.

Figure 7.19 Path Model for External Powerlessness and Diagnoses Index—Women

Perceived Neighborhood Disorder → .051 → Diagnoses Index

External Powerlessness → .135** → Diagnoses Index

Psychological Distress → .078* → Diagnoses Index

Figure 7.20 Path Model for External Powerlessness and Diagnoses Index—Men

Perceived Neighborhood Disorder → .004 → Diagnoses Index

External Powerlessness → .141** → Diagnoses Index

Psychological Distress → .139** → Diagnoses Index

Next, I examined the women’s and men’s path models focused on the health variable Diagnoses Index, using perceived external powerlessness, perceived neighborhood disorder, and psychological distress (Figures 7.19 and 7.20). As with the previous two models, these models were quite similar. Among the three direct effects on the Diagnoses Index, only psychological distress was statistically significant for both women (.134, p<.01) and men (.202, p<.01). While no other direct effects were statistically significant, for men the direct effect of perceived external powerlessness (.048) was larger than the direct effect of perceived neighborhood disorder (.004) on the Diagnoses Index. Considering the women’s model, the opposite was true. The direct effect of perceived neighborhood disorder (.051) was positive and larger than the direct effect of perceived external powerlessness (-.012), which was negative in direction.
Therefore, perceived external powerlessness has a stronger effect on the Diagnoses Index than perceived neighborhood disorder for men, whereas perceived neighborhood disorder has a stronger effect and in a different direction than perceived external powerlessness for women, when using this configuration of variables.

Examining the paths that made up the indirect effects on the Diagnoses Index, I found the following. Comparing the paths from perceived neighborhood disorder to perceived external powerlessness and to psychological distress, I again found similarities between the models. For both women and men, all paths were positive and statistically significant. Specifically, the path between perceived neighborhood disorder and perceived external powerlessness was .135 (p < .01) for women and .141 (p < .01) for men. The path between perceived neighborhood disorder and psychological distress was .078 (p < .05) for women and .139 (p < .01) for men. Therefore, while both paths were significant, the path between perceived neighborhood disorder and perceived external powerlessness was stronger than the path to psychological distress for both women and men. The path between perceived external powerlessness and psychological distress was, again, positive and statistically significant (p < .01) for both women and men (.185 and .105, respectively).

The three indirect effects of perceived neighborhood disorder on the Diagnoses Index—through perceived external powerlessness, through psychological distress, and through both perceived external powerlessness and
psychological distress—exhibited a few differences for women and men. The indirect effect of perceived neighborhood disorder on the Diagnoses Index through perceived external powerlessness was positive, yet non-significant for men (.007), but negative and non-significant for women (-.002). The two additional indirect effects, through psychological distress (.010 (p≤.05) for women and .028 (p≤.01) for men), and through both perceived external powerlessness and psychological distress (.003 (p≤.01) for women and .004 (p≤.01) for men), were positive and statistically significant for both models. Interestingly, the combined indirect effects (.011) of perceived neighborhood disorder on the Diagnoses Index was smaller than the direct effect (.051) for women, but larger than the direct effect (.039 compared to .004) for men.

The indirect effect of perceived external powerlessness through psychological distress on the Diagnoses Index was positive and statistically significant for both women and men. For women, the indirect effect was .025 (p<.01) and for men the indirect effect was .026 (p<.01). This finding is interesting for the women's model considering that the direct effect of perceived external powerlessness on the Diagnoses Index was both non-significant and negative in direction (-.012). For men, the direct effect was also non-significant, but larger than the indirect effect.

In sum, the path models for predicting the Diagnoses Index, using perceived neighborhood disorder, perceived external powerlessness, and psychological distress, contained a few notable similarities and differences for
women and men. Consistently, the largest and only statistically significant direct
effect on the Diagnoses Index was psychological distress for both models. While
non-significant, the direct effect of perceived neighborhood disorder on the
Diagnoses Index was stronger and in a different direction (positive) than the
direct effect of perceived external powerlessness for women; but the opposite
was found for men. Both women and men had two statistically significant indirect
effects. Therefore, for both women and men the direct effect of perceived
neighborhood disorder on the Diagnoses Index was non-significant; but when I
examined the indirect effects, I found two statistically significant positive indirect
effects, through psychological distress and through both perceived external
powerlessness and psychological distress. Additionally, for women the indirect
effect of perceived external powerlessness on the Diagnoses Index was positive
and statistically significant, but the direct effect was both non-significant and
negative in direction (-.012). For men, the direct effect of perceived external
powerlessness on the Diagnoses Index was positive but non-significant, albeit
larger than the indirect effect.

Comparing the impact of using perceived internal or external
powerlessness, I found the following. Neither measure of powerlessness had
statistically significant direct effects on the Diagnoses Index. While all were non-
significant, the direct effect was negative for perceived external powerlessness
for women. All other direct effects were positive. Considering the indirect effect of
both perceived powerlessness variables on the Diagnoses Index, for all models
the path from perceived powerlessness to psychological distress was positive and statistically significant. Following, the resultant indirect effect of both perceived powerlessness variables on the Diagnoses Index through psychological distress was positive and statistically significant. Therefore, while the direct effects were non-significant (and negative in direction for women) for both genders, the indirect effect changed to statistical significance. The indirect effect of perceived neighborhood disorder on the Diagnoses Index through both measures of perceived powerlessness and through both perceived powerlessness and psychological distress were statistically significant and positive. So again, simply examining the direct effect of perceived neighborhood disorder on the Diagnoses Index, regardless of which measure of perceived powerlessness is used, did not show the actual dynamics within the relationship.

Figure 7.21 Path Model for Internal Powerlessness and Self-Reported Overall Health—Women

![Path Model](image1)

Figure 7.22 Path Model for Internal Powerlessness and Self-Reported Overall Health—Men

![Path Model](image2)
Self-Reported Overall Health. Next, I examined the women’s and men’s path models focused on the health variable Self-Reported Overall Health, using perceived internal powerlessness and the other model variables (perceived neighborhood disorder and psychological distress, figures 7.21 and 7.22).

Among the three direct effects on self-reported overall health, all were positive and statistically significant for women (perceived neighborhood disorder .099, psychological distress .213, both $p < .01$, and perceived internal powerlessness .066, $p < .05$). For men, all were positive in direction, but only psychological distress (.217) and perceived internal powerlessness (.115) were statistically significant (both $p < .01$). The direct effect of perceived neighborhood disorder on self-reported overall health (.048) was non-significant.

Examining the paths that made up the indirect effects of perceived neighborhood disorder on self-reported overall health, I found the following. For both women and men, all paths were positive in direction and statistically significant. Specifically, the path between perceived neighborhood disorder and perceived internal powerlessness was .187 ($p < .01$) for women and .193 ($p < .01$) for men. The path between perceived neighborhood disorder and psychological distress was .085 ($p < .05$) for women and .136 ($p < .01$) for men. Therefore, while both were significant, the path between perceived neighborhood disorder and perceived internal powerlessness was stronger than the path to psychological distress for both women and men. The path between perceived internal
powerlessness and psychological distress was, again, positive and statistically significant ($p < .01$) for both women and men (.099 and .127, respectively).

The three indirect effects of perceived neighborhood disorder on self-reported overall health—through perceived internal powerlessness, through psychological distress, and through both perceived internal powerlessness and psychological distress—exhibited continuing similarities for women and men. All indirect effects were positive and statistically significant at $p < .01$ for both models. The indirect effect of perceived neighborhood disorder on self-reported overall health through perceived internal powerlessness was .012 for women and .022 for men. The indirect effect through psychological distress was .018 for women and .029 for men. Lastly, the indirect effect through both perceived internal powerlessness and psychological distress was .002 for both women and men. Interestingly, the combined indirect effects (.032) of perceived neighborhood disorder on self-reported overall health was smaller than the direct effect (.099) for women, but slightly larger than the direct effect (.053 compared to .048) for men. Also important, while the direct effect of perceived neighborhood disorder on self-reported overall health was non-significant for men, all indirect effects were statistically significant. By examining the indirect effects within the model for men, more explanatory patterns emerged.

The indirect effect of perceived internal powerlessness through psychological distress on self-reported health was positive and statistically significant for both women and men. For women, the indirect effect was .021
(p<.01) and for men the indirect effect was .023 (p<.01). The indirect effect through psychological distress was smaller than the direct effect of perceived internal powerlessness on self-reported overall health for both genders (.066 for women and .115 for men).

In general, the path models for predicting self-reported overall health, using perceived neighborhood disorder, perceived internal powerlessness, and psychological distress, contained little notable difference for women and men. Consistently, the largest direct effect on self-reported overall health was psychological distress for both models. The direct effect of perceived neighborhood disorder on self-reported overall health was stronger than the direct effect of perceived internal powerlessness for women; but the opposite was found for men. In fact, the direct effect of perceived neighborhood disorder was statistically significant for women, but non-significant for men. All indirect effects, however, were positive and statistically significant for both women and men. Therefore, for men the direct effect of perceived neighborhood disorder on self-reported overall health was non-significant, but when I examined the indirect effects, all were statistically significant. Therefore, while the combined indirect effects were smaller than the direct effect of perceived neighborhood disorder on self-reported overall health for women, the combined indirect effects were significant and larger than the non-significant direct effect for men.
Next, I examined the women’s and men’s path models focused on the health variable self-reported overall health, using perceived external powerlessness, perceived neighborhood disorder, and psychological distress (Figures 7.23 and 7.24). Considering the direct effects on self-reported overall health, all effects were positive in direction. Only the direct effect of psychological distress was statistically significant for both women and men (.215 and .210, respectively, both p<.01). Perceived neighborhood disorder was statistically significant for women (.108, p<.01), but non-significant for men (.050).

Alternatively, perceived external powerlessness was statistically significant for men (.157, p<.01), but non-significant for women (.021).

Examining the paths that made up the indirect effects on self-reported overall health, I found the following. For both women and men, all paths were positive and statistically significant. Specifically, the path between perceived neighborhood disorder and perceived external powerlessness was .135 (p<.01).
for women and .141 (p<.01) for men. The path between perceived neighborhood disorder and psychological distress was .078 (p<.05) for women and .139 (p<.01) for men. Therefore, while both paths were significant, the path between perceived neighborhood disorder and perceived external powerlessness was stronger than the path to psychological distress for both women and men. The path between perceived external powerlessness and psychological distress was, again, positive and statistically significant (p<.01) for both women and men (.185 and .130, respectively).

The three indirect effects of perceived neighborhood disorder on self-reported overall health—through perceived external powerlessness, through psychological distress, and through both perceived external powerlessness and psychological distress—exhibited only one difference for women and men. The indirect effect of perceived neighborhood disorder on self-reported health through perceived external powerlessness was positive for both genders. The effect, however, was statistically significant for men (.022, p<.01), but non-significant for women (.003). The two additional indirect effects, through psychological distress (.017 for women and .029 for men, both p<.01), and through both perceived external powerlessness and psychological distress (.005 for women and .004 for men, both p<.01), were positive and statistically significant for both genders. The combined indirect effects of perceived neighborhood disorder on self-reported overall health was smaller than the direct effect for women (.025 compared to .108), but larger than the direct effect for men (.055 compared to .050).
Importantly, similar to the previous model predicting self-reported overall health for men utilizing this configuration of variables, the direct effect of perceived neighborhood disorder was non-significant, whereas all the indirect effects were statistically significant. Again, the finding showed the necessity of examining the indirect effects to understand the relationship between perceived neighborhood disorder and self-reported overall health.

The indirect effect of perceived external powerlessness through psychological distress on self-reported overall health was positive and statistically significant for both women and men. For women, the indirect effect was .040 \( (p<.01) \) and for men the indirect effect was .027 \( (p<.01) \). This finding is interesting for the women's model considering that the direct effect of perceived external powerlessness on self-reported overall health was non-significant (.021). For men, while both were statistically significant, the direct effect (.157) was larger than the indirect effect.

**Overall Health Outcomes.** Considering the models to predict the Diagnoses Index, the outcomes were similar for women and men. Only psychological distress had a statistically significant direct effect for both genders and for both measures of perceived powerlessness. All paths that made up the indirect effects of perceived neighborhood disorder on the Diagnoses Index were positive and statistically significant for both women and men. For both genders, the indirect effects of perceived neighborhood disorder on the Diagnoses Index through psychological distress and through both perceived powerlessness
(internal and external) and psychological distress were positive and statistically significant. This finding was especially noteworthy, considering that the direct effect of perceived neighborhood disorder on the Diagnoses Index was non-significant. Using this configuration of variables shows that the relationship between perceived neighborhood disorder and the number of diagnoses one possesses was better understood through the indirect effects.

When predicting self-reported overall health, the models for women and men had different outcomes. For women, all direct effects on self-reported overall health, except perceived external powerlessness, were positive and statistically significant. For men, all were positive, but perceived neighborhood disorder was non-significant for both models. As with the models predicting the Diagnoses Index, all paths that made up the indirect effects were positive and statistically significant for both genders. Therefore, for men, when predicting self-reported overall health using this configuration of variables, the relationship between perceived neighborhood disorder and self-reported overall health is better understood by examining the indirect effects. For women, however, the combined indirect effects are statistically significant, but weaker than the direct effect of perceived neighborhood disorder on self-reported overall health.
CHAPTER 8

DISCUSSION AND CONCLUSION

Within the first portion of my research, I clarified the pathways between perceived neighborhood disorder and self-reported physical health. I employed the classic stress model (Pearlin et al. 1981) to examine the mediating effects of perceived powerlessness and psychological distress on the relationship between perceived neighborhood disorder and self-reported physical health. For my dependent variable of self-reported physical health, I used both a subjective, global variable asking one’s overall health, as well as an objective index that totaled the number of physical diagnoses one possesses. Also, I expanded our understanding of the relationship between perceived powerlessness in explaining self-reported physical health by creating variables for both perceived external and perceived internal powerlessness. I will discuss my conclusions in more detail.

As stated at the outset, my goal was to replicate and extend the research of Hill, Ross, and Angel (2005) and Downey and Van Willigen (2005) concerning the impact of perceived neighborhood disorder on mental and physical health. Considering first the work of Hill, Ross, and Angel, my analysis supported their findings that perceived neighborhood disorder significantly impacted self-reported overall health and that perceived neighborhood disorder had an indirect effect on
self-reported health through psychological distress. I extended their research in three ways. First, I incorporated perceived internal and external powerlessness into the model as mediating variables. Both internal and external perceived powerlessness were significant predictors of self-reported overall health. Second, I added an objective measure of health by creating an index of the total number of diagnoses the respondents possessed (Diagnoses Index); whereas Hill, Ross, and Angel used only a single item indicator of self-reported overall health. I found that perceived neighborhood disorder had an indirect effect on the Diagnoses Index through both perceived internal and external powerlessness and psychological distress. Third, by utilizing a more representative sample, my findings were generalizable to a larger population (Illinois and the U.S.).

My research also replicated and extended the findings of Downey and Van Willigen (2005) by reproducing their finding that perceived neighborhood disorder had an impact on psychological distress through perceived powerlessness. Further, I extended their research in three ways. First, I utilized two perceived powerlessness variables instead of one, distinguishing between perceived internal powerlessness and perceived external powerlessness. I found that perceived neighborhood disorder was statistically significantly associated with perceived internal and perceived external powerlessness. Second, I extended Downey and Van Willigen's findings by moving beyond only explaining psychological distress to also include self-reported physical health. They found that perceived powerlessness worked as a mediating variable between perceived
neighborhood disorder and psychological distress; I found this as well, but also employed perceived powerlessness and psychological distress as mediating variables between perceived neighborhood disorder and my two self-reported physical health variables (Diagnoses Index and self-reported overall physical health). Both perceived internal and external powerlessness had a significant direct effect on self-reported overall physical health, as well as mediating the relationship between perceived neighborhood disorder and both self-reported physical health variables.

Third, I found that psychological distress served as a mediating variable within my model. Specifically, psychological distress mediated the relationship between both perceived internal and external powerlessness variables and both self-reported physical health variables—the Diagnoses Index and self-reported overall health. Also, psychological distress mediated the relationship between perceived neighborhood disorder and both self-reported health variables. Lastly, perceived powerlessness (both internal and external) and psychological distress mediated the relationship between perceived neighborhood disorder and both self-reported health variables.

I now review the overall findings in my research. Past research has found only a weak direct relationship between perceived neighborhood disorder and self-reported physical health (Dies Roux et al. 1997; Hill, Ross, and Angel 2005; LeClere et al. 1997; Robert 1998). Similarly in my data, neighborhood disorder did not have a direct impact on the number of diagnoses one possesses.
However, when incorporating perceived powerlessness (both internal and external) and psychological distress as mediating variables, the indirect effect of perceived neighborhood disorder on the Diagnoses Index became statistically significant. Specifically, perceived neighborhood disorder had a significant indirect effect on the Diagnoses Index through psychological distress and through both perceived powerlessness (both internal and external) and psychological distress (perceived neighborhood disorder to perceived powerlessness to psychological distress to the Diagnoses Index). When predicting self-reported overall health, all pathways, therefore all direct and indirect effects, were positive and significant.

Considering the perceived internal and external powerlessness variables, both were statistically significantly associated with perceived neighborhood disorder. Neither internal nor external perceived powerlessness had a significant direct effect on the Diagnoses Index; however, both variables had a significant indirect effect on the Diagnoses Index through psychological distress. Further, I found that both perceived powerlessness variables not only directly impacted self-reported overall physical health, but mediated the relationship between perceived neighborhood disorder and self-reported physical health.

The majority of my hypotheses were supported by my findings (see chapter two for a complete list of hypotheses). Of the direct effect hypotheses, only the hypotheses that people who perceive greater neighborhood disorder are more likely to experience poorer self-reported physical health than people who
perceive less disorder, and that people who perceive greater powerlessness are more likely to experience poorer self-reported physical health than people who perceive less powerlessness were not supported for the model predicting the Diagnoses Index. All hypotheses were supported when predicting self-reported overall health. Of the indirect effect hypotheses, only the hypothesis stating that the impact of perceived neighborhood disorder on self-reported physical health is mediated by perceived powerlessness was not supported for the Diagnoses Index. All hypotheses were supported when predicting self-reported overall health. My model appeared to be a better predictor of self-reported overall health than of the number of diagnoses one possesses. This finding is potentially a result of the use of perception based variables in my research. For example, if someone perceived his neighborhood to be disordered and himself to be powerless and distressed, he may also perceived himself to be in poor health. Perceptions of neighborhood disorder and powerlessness may not truly impact objective diagnoses, but will impact one’s subjective perception of his own health.

Turning to my second research question, I examined whether minority/majority group membership moderated the relationship between perceived neighborhood disorder and self-reported health when using perceived internal or external powerlessness and psychological distress as mediating variables. I focused on three standard minority/majority comparisons: African
Americans and European Americans, lower class and higher class, and women and men. My findings were as follows.

When examining the minority-majority path models, the most differences were found between African Americans and European Americans compared to class or gender. Overall, the models had more significant paths for European Americans than for African Americans. The direct effects of perceived neighborhood disorder on both the Diagnoses Index and self-reported overall health were non-significant for African Americans. For European Americans, however, the direct effect of perceived neighborhood disorder on self-reported overall health was statistically significant; whereas the direct effect of perceived neighborhood disorder on the Diagnoses Index was non-significant. The results were the same for the direct effect of perceived powerlessness (both internal and external) on both self-reported overall health variables, significant for European Americans but non-significant for African Americans. For African Americans, the direct effect of perceived neighborhood disorder on perceived powerlessness (both internal and external) was also non-significant. Alternatively, for European Americans the direct effect of perceived neighborhood disorder on perceived powerlessness (both internal and external) was statistically significant. For both races, psychological distress had a significant direct effect on both self-reported health variables.

When examining the indirect effects of perceived neighborhood disorder on self-reported overall health, I found no significant indirect effects for African
Americans. Alternatively, I found several significant indirect effects for European Americans. Specifically, when predicting the Diagnoses Index, the indirect effect of perceived neighborhood disorder through psychological distress and through both perceived internal powerlessness (though not perceived external powerlessness) and psychological distress was significant. For the models predicting self-reported overall health, all direct and indirect effects were significant for European Americans. Therefore, when predicting self-reported overall health, the indirect effect of perceived neighborhood disorder through perceived powerlessness (both internal and external), through psychological distress, and through both perceived powerlessness (both internal and external) and psychological distress were all significant.

Considering the hypotheses, my hypothesis that perceived neighborhood disorder will have a greater impact on poor self-reported physical health for minority group members than for majority group members was not supported in the instance of race. In fact, for the minority group (African Americans) perceived neighborhood disorder had no significant direct or indirect effects on the self-reported physical health variables. Alternatively, perceived neighborhood disorder had all significant direct and indirect effects on self-reported overall health and significant indirect effects on the Diagnoses Index for the majority group (European Americans). In sum, when considering race, perceived neighborhood disorder had a greater impact on poor self-reported health for the majority group than for the minority group.
Keeping in mind previous research concerning race and physical health, I am surprised by my findings. Research shows that, in general, African Americans have worse health outcomes than European Americans (Franks et al. 2006; Hayward, Crimmins, Miles, and Yang 2000; House 2001; House and Williams 2000; Kawachi, Daniels, and Robinson 2005; Williams 1999; Williams and Collins 1995). Additionally, African Americans are disproportionally represented in disadvantaged neighborhoods. I interpret my findings to show that perceiving disorder in a neighborhood is less detrimental to the mental and physical health of African Americans because they are widely represented in these areas. It is not uncommon for African Americans to find themselves in this environment and see others like themselves in the environment. Therefore, familiarity with the neighborhoods and other residents may buffer the impact of perceived neighborhood disorder on mental and physical health. For European Americans, because many of their majority racial counterparts are not living in neighborhoods with perceived disorder, those who do perceived neighborhood disorder may be more vulnerable to its impact on perceived powerlessness, psychological distress and poor self-reported physical health. Considering the stress model (Pearlin et al. 1981) to understand my findings, possibly perceived neighborhood disorder produces different types of stress for African Americans than for European Americans. If this is the case, other mediating, or coping, variables might be more effective in understanding the relationship between
perceived neighborhood disorder and self-reported physical health for African Americans than the ones used in my model.

My class comparisons were similar to the race comparisons in the respect that the models had more statistically significant paths for the higher class group than for the lower class group. The direct effects of perceived neighborhood disorder on both the Diagnoses Index and self-reported overall health were non-significant for the lower class group. For the higher class group, however, the direct effect of perceived neighborhood disorder on self-reported overall health was statistically significant; whereas the direct effect of perceived neighborhood disorder on the Diagnoses Index was non-significant. Neither perceived internal powerlessness nor perceived external powerlessness variables had a significant direct effect on the Diagnoses Index for either class group. However, perceived internal and external powerlessness had a significant direct effect on self-reported overall health for both class groups, with the exception of perceived external powerlessness for the lower class group. For both class groups, psychological distress had a significant direct effect on both self-reported health variables.

Examining the indirect effects of perceived neighborhood disorder on the self-reported health variables, perceived neighborhood disorder had significant indirect effects on the Diagnoses Index through psychological distress and both perceived internal powerlessness and psychological distress for both class groups. The same was true for the model including perceived external
powerlessness for the higher class group, but not for the lower class group. The only indirect effect for the lower class group was through psychological distress. In other words, perceived external powerlessness did not mediate the relationship between perceived neighborhood disorder and the Diagnoses Index for the lower class group. Perceived neighborhood disorder had significant indirect effect on self-reported overall health through psychological distress and both perceived powerlessness variables and psychological distress for both class groups. In other words, for the lower class group, while there was no significant direct effect of perceived neighborhood disorder on self-reported overall health, the indirect effect of perceived neighborhood disorder through perceived internal powerlessness (but not perceived external powerlessness), through psychological distress, and through both perceived internal powerlessness and psychological distress was statistically significant. For the lower class group, my mediating variables helped explain the relationship between perceived neighborhood disorder and self-reported overall health. For the higher class group, perceived neighborhood disorder had a significant direct effect on self-reported overall health and also had significant indirect effects through perceived powerlessness (both internal and external), through psychological distress, and through both perceived powerlessness and psychological distress.

As with race, my hypothesis that perceived neighborhood disorder will have a greater impact on poor self-reported physical health for minority group members than for majority group members was not supported in the instance of
class. Overall, my models appear to have more significant pathways for the higher class group than the lower class group. While perceived neighborhood disorder did not have a direct effect of the Diagnoses Index for either group, the higher class group model had more significant indirect effects than the lower class model. When predicting self-reported overall health, all pathways, direct and indirect, were significant for the higher class model. For the lower class model, the direct effect was non-significant, but the indirect effects of perceived neighborhood disorder on self-reported overall health were significant.

As with race, I did not anticipate these results. Again, as with race, however, I might interpret this finding as a result of higher representation of the lower class group in neighborhoods with high levels of perceived disorder. The level of familiarity with the environment, coupled with seeing others similar to themselves in the disordered environment may buffer, or help residents cope with the ill effects on physical health. In other words, representation may serve as an effective coping mechanism for lower class residents in neighborhoods with high perceived disorder. Alternatively, the higher class group is typically not represented in neighborhoods with high levels of perceived disorder. Exposure to perceived neighborhood disorder, therefore, might be more disturbing to the higher class, impacting both their perceptions of powerlessness, psychological distress, and physical health more strongly than their lower class counterparts. My model, however, effectively showed how perceived neighborhood disorder
impacted self-reported overall physical health through indirect means for the lower class group.

Finally, when examining the gender models, I found the most similarity in model outcomes between the minority and majority group by gender compared to race and class. The direct effect of perceived neighborhood disorder on the Diagnoses Index was non-significant for both genders. However, the direct effect of perceived neighborhood disorder on self-reported overall health was significant for women, but not for men. The direct effects of perceived powerlessness on the self-reported physical health variables were quite similar by gender. Neither perceived internal nor external powerlessness had a significant direct effect on the Diagnoses Index for women or men. When predicting self-reported overall health, both perceived powerlessness variables were significant for both genders, with the exception of perceived external powerlessness. Perceived powerlessness had no significant direct effect on the Diagnoses Index for both genders and a significant direct effect on self-reported overall health for both genders, with the exception of perceived external powerlessness for women. For both genders, psychological distress had a significant direct effect on both self-reported health variables.

Examining the indirect effects of perceived neighborhood disorder on self-reported physical health for gender, I found that the models predicting the Diagnoses Index were nearly identical. For both men and women, the indirect effect of perceived neighborhood disorder through psychological distress and
through both perceived powerlessness, both internal and external, and psychological distress were significant. Therefore, for both genders, the relationship between perceived neighborhood disorder and the Diagnoses Index was better understood by incorporating my mediating variables of perceived powerlessness and psychological distress. Additionally, all indirect effects of perceived neighborhood disorder on self-reported overall health were significant for both genders, with the exception of the indirect effect through perceived external powerlessness for women. For men, the model predicting the relationship between perceived neighborhood disorder and self-reported overall health was better understood through the indirect effects through my mediating variables because the direct effect was non-significant.

My hypothesis that perceived neighborhood disorder will have a greater impact on poor self-reported physical health for minority group members than for majority group members was supported in the instance of gender, when predicting self-reported overall health. To summarize, the primary notable difference I found was the direct effect of perceived neighborhood disorder on self-reported overall health, which was significant for women, but not for men. This supported the findings of LeClere and colleagues (1997) that environmental conditions had a stronger impact on women’s health than men’s health. I also interpret my findings that minority/majority group status operates differently for gender than for race or class. As discussed previously, race or class minority group representation in disordered neighborhoods may provide a coping
resource and buffer the impact on self-reported health. The same cannot be applied for women because women are not overrepresented in neighborhoods with high levels of perceived disorder. A different explanation must be made for the gender differences in the models, specifically that perceived neighborhood disorder had a direct effect on self-reported overall health for women, but not for men. Perceived neighborhood disorder potentially carries the element of fear for women more so than for men. Perceived neighborhood disorder might be interpreted as more dangerous for women than for men. As shown by Hill and colleagues (2005), fear and anxiety had an impact on physical health. Therefore, the pathway of perceived neighborhood disorder and self-reported physical health as moderated by fear and anxiety might be a more fruitful way to show the moderating effects of gender than does the mediating variables I used.

The limitations of my research were as follows. The data I used was collected in 1995. Social changes from then to now might change the outcomes of my findings if the data were newer. For example, we have noted an ongoing trend of more people living in poverty and being increasingly segregated into impoverished areas (Massey 1996). Also, the cost of medical care has continued to rise. Considering these changes, the impact of perceived neighborhood disorder on self-reported physical health might be more severe today than in 1995. Also, the data was cross-sectional which impairs identifying the causal ordering of my model. For example, it is possible that poor health impacts perceived powerlessness or psychological distress. Looking at longitudinal data
would help me address issues of causality and would have given me a more robust picture of the findings. Incorporating additional neighborhood characteristics into my research, such as neighborhood SES (Robert 1998) or neighborhood collective efficacy (Browning and Cagney 2002) would also help clarify the impact of neighborhood on physical health. Lastly, while my mediating variables provided a significant contribution to understanding perceived neighborhood disorder and physical health, other potential mediators exist, such as fear and anxiety (Hill, Ross, and Angel 2005) that will also expand our understanding of the relationship between neighborhood and health.

In the future, I want to expand my research in the following ways. I want to incorporate interaction effects into the subgroup analysis. While my research was an initial exploration into whether differences among the subgroups existed, I now want to test the statistical significance of the differences among my subgroups. Interaction effects would allow me to test for statistical differences. My findings would also benefit from more complex statistical analysis, such as structural equation modeling, to incorporate multilevel analysis. This type of analysis is especially useful when examining neighborhood, or structural level analyses with individual analyses. In addition, multilevel analysis will allow me to incorporate the neighborhood characteristics mentioned in the previous paragraph. I would like to expand my measure of psychological distress from only using the CES-D scale of depression (Radloff 1977) to include expanded
measures of distress. Keeping my existing model variables, I want to include additional measures, such as fear and anxiety (Hill, Ross, and Angel 2005).

In sum, I have clarified the pathways between perceived neighborhood disorder and self-reported health by utilizing the mediating variables of perceived internal powerlessness, perceived external powerlessness, and psychological distress. Additionally, I have found how minority/majority group status moderated the relationship between perceived neighborhood disorder and self-reported health when perceived powerlessness and psychological distress were used as mediating variables.

Medical sociological research, my dissertation included, has consistently shown a relationship between the neighborhoods in which people reside and their subsequent mental and physical health. At the same time, politicians have inadequately included sociological findings concerning the causes of poor mental and physical health in their public discourse concerning the changes needed to improve health and health care in the United States.

In my opinion, until people in decision-making positions recognize the validity of our sociological findings and act in meaningful ways to improve the overall mental and physical well-being of our citizenry we, as a nation, will continue to suffer. The oft-discussed place to begin is offering a form of universal health care in the United States. State-funded health care is provided in some form in all industrialized country except for the United States. Sadly, no one in decision-making positions can agree upon the best way to implement a system of
universal care for American citizens. I suggest that a first step is to simply offer free preventive health care in impoverished or disordered neighborhoods. Ample evidence, coming from years of sociological research, shows that impoverished and disordered neighborhoods have a disproportionate number of people with poor mental and/or physical health. This consistent finding must be at least one source of the high cost of health care. A significant drain on our health care system is the uninsured people that regularly put off less expensive preventive care, resulting in more expensive medical treatments at the taxpayers’ expense. While not addressing all of our nation’s health and health care problems, focusing on impoverished and disordered neighborhoods, where many uninsured and poor people reside seems to be an obvious and effective place to start. My sincere hope is that my and other medical sociological research will begin to be used in a way to improve the health and lives of our American citizenry.
APPENDIX A

DIAGNOSES

1. heart disease
2. high blood pressure
3. lung disease
4. breast cancer (not used in analysis because only included females)
5. unspecified cancer
6. diabetes
7. arthritis rheumatism
8. osteoporosis
9. allergies/asthma
10. digestive problems
APPENDIX B

NEIGHBORHOOD DISORDER SCALE

1. “There is a lot of graffiti in my neighborhood”
2. “My neighborhood is noisy”
3. "Vandalism is common in my neighborhood"
4. “There is a lot of abandoned buildings in my neighborhood”
5. “My neighborhood is clean”
6. “People in my neighborhood take good care of their houses and apartments”.
7. “There are too many people hanging around on the streets in my neighborhood”
8. “There is a lot of crime in my neighborhood”
9. “There is too much drug use in my neighborhood”
10. “There is too much alcohol use in my neighborhood”
11. “In my neighborhood people watch out for each other”
12. “My neighborhood is safe”
13. “I can trust most people in my neighborhood”
APPENDIX C

POWERLESSNESS SCALE

1. “The really good things that happen to me are mostly luck”
2. “There’s no sense planning a lot—if something good is going to happen it will”
3. “Most of my problems are due to bad breaks”
4. “I have little control over the bad things that happen to me”
5. “I am responsible for my own successes”
6. “I can do just about anything I really set my mind to”
7. “My misfortunes are the result of mistakes I have made”
8. “I am responsible for my failures”
APPENDIX D

DISTRESS INDEX

1. “felt you couldn’t get going”
2. "felt sad"
3. “had trouble getting to sleep or staying asleep”
4. “felt that everything was an effort”
5. “felt lonely”
6. “felt you couldn’t shake the blues”
7. “had trouble keeping your mind on what you were doing”
8. “enjoyed life”
9. “felt happy”
10. “felt hopeful”


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