5-2018

The Relationship Between Mentally Unhealthy Days and Access to Healthcare and Healthcare Services Utilization Among the Long-term Uninsured in South Carolina

Tamara Semaj Dobson-Brown
Clemson University, tamara.dobsonbrown@yahoo.com

Follow this and additional works at: https://tigerprints.clemson.edu/all_theses

Recommended Citation
https://tigerprints.clemson.edu/all_theses/2832

This Thesis is brought to you for free and open access by the Theses at TigerPrints. It has been accepted for inclusion in All Theses by an authorized administrator of TigerPrints. For more information, please contact kokeefe@clemson.edu.
THE RELATIONSHIP BETWEEN MENTALLY UNHEALTHY DAYS AND ACCESS TO HEALTHCARE AND HEALTHCARE SERVICES UTILIZATION AMONG THE LONG-TERM UNINSURED IN SOUTH CAROLINA

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
Applied Sociology

by
Tamara Semaj Dobson-Brown
May 2018

Accepted by:
Dr. William Haller, Committee Chair
Dr. Veronica Parker
Dr. Kenneth Robinson
Dr. Brenda Vander Mey
ABSTRACT

Background: The Patient Protection and Affordable Care Act (ACA) made a tremendous impact on the nation’s nonelderly (ages 18-64) uninsured population. Despite the ACA provisions, they fell short of universal health insurance coverage; especially in states that chose not to expand Medicaid, like South Carolina. Those left uninsured are likely to experience great difficulty with the health care delivery system, especially in areas that have a high concentration of uninsured residents.

Purpose: To assess the effect of psychological vulnerability, as measured by mentally unhealthy days, on access to healthcare and healthcare utilization among the long term uninsured in South Carolina.

Methodology: Chi square, Spearman correlations, and regression analyses were run between mentally unhealthy days and questions relating to access to healthcare and healthcare services utilization.

Results: Access questions that were found to have a statistically significant relationship to mentally unhealthy days: usual source of care, means of transportation to care, difficulty to receive care, amount of time taken to get to care, amount of time since last doctor’s visit, delay receiving care because of cost, and inability to get a necessary prescription. Utilization questions that were found to have a statistically significant relationship to mentally unhealthy days: time since last check-up, amount of time spent on healthcare within the last year, hospitalized in last twelve months, and emergency room visit in last twelve months.

Discussion/Conclusion: Results show an overall lesser degree of fit between the health care system in the hotspots and the individuals residing in the area. Ultimately, psychological vulnerability is a significant factor relating to access to healthcare service, which subsequently translates into the adverse relationship between healthcare service utilization and mentally unhealthy days. Based on these results, it is imperative that policy makers consider how policy will influence the community uninsurance rates and the resources that the community will have available for its members.
# Table of Contents

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title Page</td>
<td>i</td>
</tr>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>Background</td>
<td>1</td>
</tr>
<tr>
<td>The Uninsured</td>
<td>3</td>
</tr>
<tr>
<td>Significance</td>
<td>6</td>
</tr>
<tr>
<td>Theoretical Framework</td>
<td>8</td>
</tr>
<tr>
<td>Literature Review</td>
<td>13</td>
</tr>
<tr>
<td>Access to Healthcare Services</td>
<td>13</td>
</tr>
<tr>
<td>Healthcare Service Utilization</td>
<td>16</td>
</tr>
<tr>
<td>Mental Distress</td>
<td>19</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>24</td>
</tr>
<tr>
<td>Research Design and Methods</td>
<td>27</td>
</tr>
<tr>
<td>Analyses</td>
<td>30</td>
</tr>
<tr>
<td>Results</td>
<td></td>
</tr>
<tr>
<td>Descriptive Characteristics of the Sample</td>
<td>33</td>
</tr>
<tr>
<td>Chi Square Analyses</td>
<td>33</td>
</tr>
<tr>
<td>Regression Analyses</td>
<td>37</td>
</tr>
<tr>
<td>Discussion</td>
<td>43</td>
</tr>
<tr>
<td>Discussion of Results</td>
<td>43</td>
</tr>
<tr>
<td>Political Implications</td>
<td>47</td>
</tr>
<tr>
<td>Community Implications</td>
<td>49</td>
</tr>
<tr>
<td>Conclusion</td>
<td>55</td>
</tr>
<tr>
<td>Appendices</td>
<td></td>
</tr>
<tr>
<td>Appendix 1</td>
<td>58</td>
</tr>
<tr>
<td>Citations</td>
<td>62</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1:</td>
<td>Conceptual Framework</td>
<td>12</td>
</tr>
<tr>
<td>Figure 2:</td>
<td>Map of the counties in SC where study respondents reside</td>
<td>28</td>
</tr>
<tr>
<td>Figure 3:</td>
<td>Methodology models for regression</td>
<td>31</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 1: Mentally Unhealthy Days and Indicators of Access and Utilization, Chi-Square Analyses..................................................................................................................34
Table 2: Mentally Unhealthy Days and Indicators of Access and Utilization, Regression Analyses ..................................................................................................................37
CHAPTER ONE

INTRODUCTION

Background

The Patient Protection and Affordable Care Act (ACA) made a tremendous impact on the nation’s nonelderly (ages 18-64) uninsured population. The law extended health insurance coverage to many of the previously uninsured by banning pre-existing conditions exclusions, extending coverage for dependents until the age of 26, mandating employer-provided coverage for all full-time employees, mandating insurance be purchased by all individuals, offering tax subsidies to help cover costs of insurance, and expanding Medicaid eligibility to 138% the federal poverty limit (Kaiser Commission 2012a). An estimated 20 million nonelderly adults gained insurance coverage under the ACA from 2010 to 2016 (Uberoi et al. 2016).

Despite the ACA provisions, they fell short of universal health insurance coverage. In its passage, the ACA was widely contested politically. Lawsuits from several states were enacted against the federal government to challenge the constitutionality of the law. National Federation of Independent Business v. Sebelius found most of the ACA provisions as Constitutional. However, the case ensured that the Medicaid eligibility expansions could be left up to the individual states to implement (Kaiser Commission 2012c; Uberoi et al. 2016). As of April 15, 2018, 18 states chose not to expand Medicaid coverage (Kaiser Commission 2018).
Prior to the implementation of the ACA, South Carolina had a high uninsured rate, as did much of the southern and western United States (Kaiser Commission 2012b). Still today, South Carolina has significant unmet health needs. Many residents report health as fair or poor, have had diagnoses of diabetes, and are overweight or obese. South Carolina also has a high infant mortality rate and cancer death rate. Due to these health needs, expansion of health insurance and Medicaid represents a first step towards better health (Kaiser Commission 2016). Despite this, South Carolina showed early signs of preferring to opt out of ACA provisions to the extent allowable under federal law (Wishner et al. 2014); as such, South Carolina was among the 19 states to refuse the Medicaid expansion. Due to this opt-out Medicaid scenario, hundreds of thousands of people in South Carolina remained uninsured. One study estimated that approximately 3.6 million more Americans would remain uninsured nationwide due to the partial implementation of the ACA provisions (Price & Eibner 2013).

Medicaid expansion states saw significantly higher percentage reductions in their uninsured rates compared to non-expansion states (Antonisse et al. 2016; DHHS 2016). Although more research is needed for verification, findings show some indication that the expanded health insurance coverage is associated with better health outcomes (Antonisse et al. 2016). Because the ACA was federally implemented, South Carolina showed significant reductions in the uninsured percentage. As of 2016, the South Carolina uninsured percentage is 10.8%, down from 18.9% from the pre-ACA implementation (Kaiser Commission 2017). However, if South Carolina had expanded Medicaid, almost
36% of those remaining uninsured would be eligible for coverage (Garfield and Damico 2017).

*The Uninsured*

The estimated 24 million who remain uninsured nationwide largely resembles the pre-ACA uninsured population. The low-income of less than 138% of the federal poverty level; working aged adults under 35; racial and ethnic minorities, especially Latino; and small business employees accounted for approximately 21 million of the remaining uninsured (Garfield et al. 2014; Garfield and Young 2015; Kaiser Commission 2017; Collins et al. 2016). Many of these individuals were eligible for coverage under the Medicaid expansion, but fell into the coverage gap due to many states opting out (Garfield & Damico 2014; Kaiser Commission 2017). Low-income working families are the most susceptible to being uninsured as they are less likely to be offered coverage from an employer and less able to afford the costs associated with individual insurance market (Kaiser Commission 2012b). Despite the uninsured more likely consisting of younger adults, under 26 years, the dependent coverage provision of the ACA is likely to allow them to gain insurance (Kaiser Commission 2012b).

The remaining uninsured are more likely to rate their health as fair or poor, despite being less likely to not receive a clinical diagnosis (Garfield & Young 2015). Additionally, the uninsured have a greater likelihood of engaging in adverse health behaviors, such as less physical activity (Shi & Stevens 2005a). Despite the likelihood for worse health conditions and behaviors, the uninsured face greater difficulty accessing healthcare services and using those services. The uninsured are less likely to have a regular source of
care, more likely to delay receiving needed care, and less likely to use preventive services (Kaiser 2012; Hu et al. 2014). When the uninsured do receive care, it is likely lacking in quality. The uninsured have greater access to community and public facilities rather than high-quality hospitals (Kaiser Commission 2012; Popescu et al. 2017). Additionally, public healthcare facilities for the uninsured do not sufficiently substitute for access to care that would be made possible through obtaining insurance coverage (Kaiser Commission 2012). The uninsured often receive care from less experienced providers (Gardner & Vishwarao 2010).

Emergency department care has been routinely a source for the uninsured, typically for nonurgent conditions (DHHS 2011; Weisz et al. 2015; Weiwei et al. 2015). This behavior could be due to the experiences faced by the uninsured in healthcare facilities. Lack of insurance prevents obtaining medically necessary care and respondents cited lack of confidence in receiving care and experiencing provider-level barriers (Han et al. 2015).

Cost for medical care services is a deterrent for the uninsured, as they are vulnerable to financial barriers to receiving care (Shi & Stevens 2005a). When they receive care, they are unlikely to be able to pay, resulting in uncompensated care (Institute of Medicine 2009). Uninsured families on average are only able to pay a portion of medical bills, regardless of income level (DHHS 2011). Financial strain from medical bills is often cited as the main reason the uninsured forgo healthcare (DHHS 2011; Kaiser Commission 2017). In fact, this financial vulnerability is a major cause of stress among the uninsured (Kaiser Commission 2012; Brown et al. 2016).
The strain inherent in uninsured status can be exacerbated by longer duration of lack of insurance. A large percentage of the uninsured have lacked coverage for twelve months or longer (Garfield & Young 2015). Chronic lack of insurance exacerbates the issues prevalent among the uninsured. Extended duration without coverage is negatively associated with the probability of receiving care. Those uninsured for shorter duration receive necessary care in less time than those who are long-term uninsured (Kaiser Commission 2004; Abdus 2014). Additionally, the uninsured are more likely to consist of already disadvantaged subpopulations. The low-income, the near elderly (aged 50-64 years), and Hispanics have greater likelihood of being uninsured for longer durations (Kaiser Commission 2004). Prior to the implementation of the ACA, approximately 31.3 million people were uninsured for all of 2011 and 2012. Those uninsured for the full four years between 2009 and 2012 is an estimated 22.2 million (Rhoades and Cohen 2014). The long-term uninsured were largely represented among those who received coverage after the ACA implementation (Decker & Lipton 2017).

Additionally, there can be entire areas that have a high population of uninsured people and that can have implications for the health care system of that area. Areas that consist of higher percentages of uninsured persons are likely to suffer from various aspects of inadequate healthcare services. Communities with high rates of the uninsured have an average of 26.9% uninsured, communities with low rates average approximately 6.8%; this proportion is reflected in the poverty rates in these respective communities. These high uninsurance populations additionally showed a higher percentages of minority occupants:
27.9% Latino/Hispanics and 11% blacks, compared to 5.7% and 7.4% for Latinos and blacks in low uninsurance communities, respectively (Pauly & Pagan 2007).

According to Pagan and Pauly (2006), the vulnerable uninsured also affect those who have coverage due to greater frequency of critical care in the same health systems. If access to care is supplied by a charity services, there may still be issues in utilization as there might be higher prices for services to the uninsured; potential impact on quality of care. Insured adults were less likely to have a place to go when they were sick. The uninsured residing in communities with high uninsurance rates perceived unmet medical needs. Providers that serviced areas of high uninsurance report dissatisfaction with their careers and perceived that the quality of care they provided was lower. Additionally, patients experienced lower levels of trust and satisfaction with their doctors. Availability of specialized services was negatively related to uninsurance rage in the community. Primary care physicians were less likely to refer to specialists; consequently, the available specialists are less likely to be able to deliver quality care. Number of physicians per capita was negatively associated with unmet healthcare needs. It is worth noting that uninsured individuals in high and low uninsurance rates showed very consistent perception of unmet needs.

Significance

During the current period of health reform, it is important to assess the vulnerability inherent in the uninsured population. The Institute of Medicine (2009) recommended that the federal government seek to achieve health insurance coverage for everyone. The ACA
provided significant expansions, although insurance coverage for all remains an elusive goal. The uninsured are vulnerable; due to this vulnerability, the federal government has a responsibility to account for them in further healthcare reform (Flaskerud & Winslow 2010). Despite the ACA, health insurance coverage is viewed in the United States from a market justice perspective and the United States is at variance with nearly all other advanced industrialized countries in maintaining that view. However, the vulnerability surrounding the uninsured is a major social problem. Uninsurance is both a health problem and a social problem. Resolution of the problem requires social action (e.g., changes in policies and law). From a social justice perspective, health insurance is a right; with the expansion of insurance coverage would be a crucial step in providing healthcare for all citizens.

The uninsured face substantial vulnerability with healthcare utilization, both on community and individual level. Due to this, their experiences require closer examination to assess their difficulties with the health care system. As mentioned earlier, uninsurance does not negate the possibility of access to and use of services. It is primarily a significant predictor, due to the influence insurance status has over quality of life and healthcare services. Thus, it is imperative to study the matter of the uninsured further. Insufficient resources cause the uninsured stress, especially regarding healthcare services. Stress among the uninsured potentially results in additional vulnerability that could be psychological in nature. Among the uninsured population, there is perceived stress and negative coping strategies that are both significant predictions of depression (Kanimura et al. 2015). Furthermore, approximately 19% of the uninsured report their mental health
status as fair or poor (Garfield & Young 2015). Such stress could in turn be a cause of mental health vulnerability. Thus, due to this added potential vulnerability among the uninsured, the presence of psychological vulnerability could negatively influence access to healthcare and healthcare utilization. The interconnection of risk factors (i.e. uninsured status and psychological vulnerability) may compound the barriers to healthcare prevalent in each vulnerability. This sets the stage for a vicious cycle, with mutually reinforcing risks and stressors accompanying uninsured status. Although a vicious cycle, these would require longitudinal data to analyze, but cross-sectional data can help as a first step by analyzing statistical associations at one point in time. Hence, the purpose of this study is to assess the effect of psychological vulnerability, as measured by frequent mental distress, on indicators of access to healthcare and healthcare utilization among the long term uninsured in South Carolina.

Theoretical Framework

Aday (2002) developed a comprehensive vulnerability model that incorporated individual- and community-level risk factors to determine vulnerability in the various dimensions of health. Community-level factors can include neighborhood characteristics that also can influence individual-level factors, and social factors such as cohesion and social support. The uninsured population can experience vulnerabilities at both individual and community levels. Uninsured status on the individual can result in worse health outcomes and greater health care needs. Furthermore, community uninsurance is related to community disadvantage and less access to and use of health care services. Aday’s combination of individual and community attributes to vulnerability was very
comprehensive. However, it specifically denoted 9 populations as the most vulnerable: high risk infants and mothers; chronically ill and disabled; people with HIV/AIDS; mentally ill and disabled; alcohol and substance abusers; the suicidal and homicidal; abusing families; the homeless; and immigrants and refugees.

Aday’s vulnerable populations conceptual model (VPCM) expands upon earlier models that focused primarily upon individual health and healthcare factors. While uninsurance is an individual factor, it can contribute to various community level issues. For example, community uninsurance could lead to limited quality healthcare resources, subsequently promoting greater health vulnerabilities, physically and mentally.

Vulnerable populations are the result of an interactive relationship between resource availability, relative risk, and health status. Resource availability influences individuals while individual risk varies as a function of the opportunities and resources, both material and nonmaterial, associated with the social characteristics of the individual themselves and the nature of their social and neighborhood ties. These varied social factors (including social status, social capital, and human capital) can be viewed as the fundamental social causes that shape differential environmental and behavioral exposure to health risks. An example of this could explain the different rates of frequent mental distress (FMD) among the uninsured population. Social support serves as a means of coping with negative life events, minimizing their effects of physical or mental well-being. Communities foster social resources that are drawn on by individuals within them (Aday 2002).
Relative risk of vulnerable populations is directly influenced by community and individual factors associated with poor health. “Relative risk refers to the ratio of the risk of poor health among groups that are exposed to risk factors and those who are not,” (Last et al. 1995 as cited in Aday 2002:4). Being in poor health in any one of the dimensions of health care make an individual vulnerable to poor health in other dimensions. Health status is related to the World Health Organization definition of health that incorporated physical, mental, and social dimensions to create a more holistic picture of health. Health needs/deficits can be assessed at both the community and individual level. Community assessment would focus on statistical indicators of things like morbidity or mortality. Individual assessment would be conducted of individual health status. While physical and social health are both important, for this paper focuses on mental health and well being.

Shi and Stevens (2005a) applied the vulnerability framework towards the uninsured. They stated that there was cumulative evidence that the uninsured were likely to suffer from poor health status, subpar access and utilization of healthcare services, and subpar services. First, the uninsured were more likely to report greater health risk behaviors. Secondly, the uninsured population consists of various other high-risk populations such as those with low income and racial and ethnic minorities. Due to the uninsured susceptibility towards encompassing additional vulnerabilities it is worth noting that multiple vulnerabilities are prone to greater differentials in accessing or utilizing healthcare services (Shi 2001). Shi & Stevens (2005b) calls attention the potential hindrance simultaneously occurring risk factors can have on access to care and healthcare utilization for vulnerable populations.
For this thesis, I postulate that the same community factors that affect accessibility of healthcare services and the individual factors that utilization of care will be related to psychological vulnerability. Within the uninsured population, the added vulnerability relates to worse access to healthcare facilities and less use of regular healthcare services.

The community- and individual-level relationship to psychological vulnerability, i.e. mentally unhealthy days, is explained by stress theory. Following Pearlin et al. (1981), community-level factors directly affect individual ability to cope with stress. Inability to cope with stress, could result in individual distress and psychological vulnerability. This psychological vulnerability can impede the individual’s perceived ability to successfully accomplish something, or their self-efficacy. Impeded self-efficacy within an already vulnerable population can result in less perceived ability to improve their situation themselves through various means, including those available through and facilitated by health care services.
Figure 1: Conceptual framework

- **Community Level Factors**
  - Such factors serve as stressors for individuals which elicit individual-level health behaviors.

- **Access to Healthcare Services**
  - Such factors affect the availability of resources, e.g., healthcare resources.

- **Mentally Unhealthy Days**
  - Individualized response which influences the action of using healthcare services.

- **Healthcare Service Utilization**
CHAPTER TWO

LITERATURE REVIEW

Access to Healthcare Services

The concept of access to healthcare services does not have a universally agreed upon meaning. In research, the definition of access remains largely dependent on the needs of the study. Aday and Andersen (1975a) stated that access has been regarded as more of a political concept than one that is dependent on a solely scientific measure. According to Aday (2002), access implies that people have a place to go as well as the financial and other means necessary to obtain care. Penchansky and Thomas (1981) defined access as a concept that regards the degree of fit between the patients and the healthcare system. For this thesis, access will be defined as “the ability of persons needing health services to obtain appropriate care in a timely manner,” (Shi & Singh 2015: 571). This definition refers mainly to the potential for access as described by Aday and Andersen. Potential access is determined through different characteristics of the healthcare system and of the population at risk (Andersen 1995). These factors can furthermore affect the utilization of care but access more closely addresses the supply of healthcare, which directly influences use of care.

Dimensions of access are very important to consider as they are influential for the use of services. Aday et al. (1980) related the structural indicators of access to the availability of healthcare providers and personnel, as well as how the healthcare system is organized. These definitions lend themselves to the dimensions of healthcare used by
Penchansky and Thomas (1981). Dimensions of healthcare access are: “Availability: adequacy of supply of providers, facilities, and specialties… accessibility: relationship between location of supply and location of clients, includes time, distance, and cost to travel… accommodation: relationship between the manner supply resources are organized to accept clients’ and clients ability to accommodate them, including hours of operation, appointment times, walk-in facilities… affordability: price of services and providers insurance or deposit requirements to income and ability to pay (client perception is important here); acceptability: clients attitudes about acceptable personal characteristics of clients…” (128-129). The dimensions relate to how the overall health system of an area can be useful to the population at risk.

Attributes of the healthcare delivery system are largely related to the social conditions of an area, including the external environment and the community (Phillip et al. 1998). Geographic location is a highly influential determinant of accessibility of healthcare. It may limit availability of providers that are in a certain area. Furthermore, community location influences the distribution of healthcare providers, as well as, access to primary or specialty services (Shi & Stevens 2005a). Location could be a barrier to potential patients in need of care. Distance to care facilities and transportation limitations to facilities are a hindrance to using services, ultimately resulting in unmet need (Arcury et al. 2005; Comber et al. 2011; Haley et al. 2017). Community-level disadvantage limits the access to healthcare, reducing likelihood of usual sources of care (Kirby & Kaneda 2005; Archibald & Rankin 2013).
Community disadvantage directly relates also to the population at risk in an area. Populations at risk can be conceptualized at both individual and community levels. Populations conceived as individuals bring the focus on utilization behaviors; while community-level characteristics influence the supply of resources. Both populations at risk reflect predisposing, enabling, and need attributes. On a community level, predisposing characteristics are neighborhood compositions, geographic location, political environment, and social norms. Enabling characteristics are a function of socioeconomic status of an area, social assets, social cohesion, and social inequalities. Need factors are the population health behaviors, population well-being, and overall health disparities (Shi & Stevens 2005a). Disadvantaged populations at risk fare worse regarding access to healthcare resources. Metropolitan residence, rather than rural, generally means better access to healthcare services and providers; in fact, increasing rurality relates to less access to specialty doctors (Hendryx et al. 2002; Chan et al. 2006). The population at risk within an area can significantly influence its healthcare system. Disadvantaged individuals tend to concentrate in a given area, resulting in the disadvantaged becoming a defining community characteristic and ultimately, predicts the ability of its residents’ access to healthcare (Jiang & Begun 2002; Kirby & Kaneda 2005). Lack of neighborhood cohesion and community social support is associated with fewer healthcare services and affects the delivery of care from health providers (Ahern & Hendryx 2003; Prentice 2006; Aysola et al. 2011; Willet et al. 2012).

Influence of community attributes on access to care can be explained by the community social resources model from Flaskerud and Winslow (1998). The model
suggests that community resources impact the overall health of the community; as such, community vulnerability influences individual vulnerability. Community vulnerability is related to limited resources (e.g. healthcare services), ultimately leading to negative health outcomes. Resource availability is reflected in both environmental and socioeconomic factors. Such factors are a source of stress for the community (Phillips et al. 1998).

Community-level uninsurance is an impeding factor to healthcare services availability. If a community has a relatively high occurrence of uninsurance that community is going to have difficulties obtaining necessary care and receiving lower quality care (Institute of Medicine 2009; Gresenz & Escarce 2011). In fact, communities with higher uninsurance can have approximately twice as many difficulties regarding care (Cunningham & Kemper 1998). This community uninsurance highlights the vulnerability the individuals face due to community attributes.

*Healthcare Service Utilization*

Use of healthcare services is closely related to access to care; so much so that problems with access to healthcare directly influence barriers to use of the services (Pacula & Strum 2000). Use is often regarded as realized access and as an objective indicator of access (Andersen 1995). Indicators of realized access can be found in the type of services used, purpose of use, location of services, continuity of care, duration of use and frequency of service visits (Aday et al. 1980). Customer satisfaction is also directly related to use; it is a subjective indicator of realized access.

Because use of services is largely dependent on access to services; use of services can be largely dependent on community factors. Disadvantaged neighborhoods, subject to
poor environmental conditions and fewer social resources, are directly related to not using preventive services, lack of primary care service use, and greater use of emergency room services (Ricketts et al. 2001; Kirby & Kaneda 2005; Weisz et al. 2015). Neighborhood conditions are reflected in social support which is likewise related to seeking health care services. Social support is positively related to barriers to care and is positively associated with help-seeking and use of services (Honda & Jacobson 2005; Perry et al. 2008; Fleury et al. 2014; Wiesz et al. 2015). Lower sense of community is also associated with issues of provider choice and less provider satisfaction.

Individual-level characteristics of the population at risk directly affect use of healthcare services. Predisposing characteristics include race/ethnicity, age, gender, marital status, etc. Enabling characteristics include income and insurance coverage status. Need characteristics include health status issues and mental/physical well-being (Shi & Stevens 2005a). Whites are shown as more likely to report unmet need (Shi & Stevens 2005b). Age is shown to be positively associated with emergency room use and use of prescription drugs (Goodwin & Anderson 2002; Chen et al. 2015). Women show greater need for healthcare than men (Saliganicoff 2014). Marital status is positively associated with receipt of care (Goodwin & Anderson 2002; Glover et al. 2004). Racial and ethnic minorities are more likely to use emergency care services and less likely to report a usual source of care (Glover et al. 2004; Chen et al. 2015).

Disadvantaged members of at-risk populations can experience discrimination in the healthcare system which is largely deters use of services. Reports of race, age, and insurance status discrimination are related to delays in needed care, reposts of unmet need
for care, poor perception of care and worse health outcomes (Calsyn & Winter 2001; Casagrande et al. 2007; Allen et al. 2014). Racial and cultural factors are influential to minority patients’ adherence to treatment and use of services. Black and Latino patients are shown to find greater satisfaction with care when they have the same race or ethnicity as their provider (Saha et al. 1999; Chen et al. 2005). Patient satisfaction is largely influential to patient health outcomes (Kane et al. 1997). Unsatisfactory experiences impede patient self-efficacy further limiting the likelihood of use of services (Cavalhieri 2016). Trust in physicians is shown to be related to community social factors and is indicative of not seeking care even if necessary (Ahern & Hendryx 2003; Mohseni & Lindstrom 2007).

The social relationship between patient and provider is largely influenced by discrimination and other stressors. Poorer relationships may influence self-efficacy among the vulnerable populations (Lantz et al. 1998). Such a hindrance on vulnerable populations can result in fewer health promoting behaviors, like using healthcare services. Self-efficacy is positively related with help-seeking and using healthcare services (Judd et al. 2006; Janicke & Finney 2010; Weng et al. 2010; Raymond et al. 2011; Wu et al. 2015; Umubyeyi et al. 2016).

Insurance status can serve as a stressor and a hindrance to using healthcare services. The uninsured are likely to delay necessary care (Shi & Stevens 2005b). Also, uninsured status is associated with less satisfaction with care services (Wan et al. 1997). The uninsured are still likely to routinely utilize the emergency room services, although this is typically used for nonurgent issues (Koziol-McClain et al. 2000; Weisz et al. 2015; Weiwei et al. 2015). This use of services is a last resort as the uninsured likely have no other options
for healthcare services; citing lack of public health facilities or a source of care (O’Brien et al. 1997; Byrne et al. 2003; Rust et al. 2009).

*Mental Distress*

Frequent mental distress (FMD) is derived from the Center for Disease Control and Prevention’s (CDC) Behavioral Risk Factors Surveillance System (BRFSS) core HRQoL “Healthy Days” measure. The question states, “thinking about your emotional or mental health, which includes stress, depression, and problems with emotions, for how many days was your emotional or mental health not good?” (CDC 2000b:8). Individual who indicate a greater number of days of experiencing “not good” days are said to have worse recent mental health. A report of 14 or more days within a 30-day period of “not good” emotional/mental health constitutes “frequent mental distress.”

The Healthy Days care module is designed to be compatible with the World Health Organization’s (WHO) definition of health (CDC 2000b). According to the WHO (1948), health is defined as “a state of complete physical, mental, and social well-being.” Each of the core question measures a different dimension for a more holistic picture of health. Population-level use of the cost measures has been used to identify health trends and disparities, which in turn may be useful to address population health needs (CDC 2000b; Zack et al. 2004; Moriarty et al. 2005). Each dimension has been associated with each other, indicating the importance and interconnectedness of each aspect of health (Kobau et al. 2004). As a core measure of the “healthy days,” mentally unhealthy days indicate the potential for psychological vulnerability i.e. mental distress. Due to its proven
interconnectedness (Kobau et al. 2004; Baune & Aljeesh 2006), mental distress could show indication of other areas of need. Thus, ascertaining its influence is imperative.

Overall, the measures, especially mental distress, are useful at a community level because they reflect the influence population-level conditions, resources, and policies can have on the perceptions of health status and function of the population (CDC 2000b), inevitably indicating areas of need. The community can cultivate stress, influencing psychological vulnerabilities. Neighborhood disadvantage is associated with psychological, social and environmental well-being, even causing signs of depression in area residents (Kubzansky et al. 2005; Gadalla 2010; Erin et al. 2012; Kamimura et al. 2014). Socioeconomic conditions of an area are strong determinants of mental distress (Jia et al. 2009; Gadalla 2010). Furthermore, more populous, urban regions have indicated higher prevalence of distress, with greater numbers of unhealthy days (CDC 2000a; Fredriksen-Goldsen et al. 2010).

Social causes of mental distress align with the fundamental cause theory for disease (Link & Phelan 1995). Social context, especially, socioeconomic factors and social support, are the fundamental causes of disease as they effect an individual’s capacity to influence the impact of stress. Social conditions influence access to important resources (e.g. healthcare), hindering sources of intervention, ultimately maintaining the stressors associated with disease.

Social stresses can exacerbate individual vulnerabilities, such as (mental) health perceptions, health risk behaviors, social support, and functional status (CDC 2000b). Individual mental vulnerabilities have been linked to limited to social support and social
capital, which can be related to the social conditions (Sapp et al. 2003; Fortin et al. 2006; Lim & Zeback 2008; Strine et al. 2008a; Nieminen et al. 2010; Farr & Bish 2013). Lack of sufficient social support means that individuals are unable to mediate their stressful experiences, resulting psychological vulnerability that could result in negative health behaviors. These adverse health behaviors include smoking, lack of exercise, overconsumption of alcohol, and lack of good nutrition (Brown et al. 2003; Ahluwalia et al. 2004; Strine et al. 2004a; Strine et al. 2004b; Rapalo et al. 2005; Jiang & Hessler 2009; Frederiksen-Goldsen et al. 2010; Ampara et al. 2011; Thompson et al. 2012; Farr & Bish 2013; Mukherjee 2013). Moreover, functional health outcomes are affected by psychological vulnerabilities, e.g. distress. Distress is associated with weight problems (being either over- or underweight), mental health impairment, limited active function, presences of chronic conditions, and disability (Hassan et al. 2003; Strine et al. 2004a; Strine et al. 2004d; Kobau et al. 2005; Kimmerling & Baumerind 2005; Jiang & Hessler 2009; Fredriksen-Goldsen et al. 2010; Ampara et al. 2011; Chen et al. 2011; Thompson et al. 2012; Farr & Bish 2013; Mukherjee 2013; Zack et al. 2013; Fleury et al. 2014). The negative health outcomes associated with mental distress could even increase need for care.

Furthermore, mental distress is more commonly prevalent among disadvantaged subpopulations. Low socioeconomic status, education, occupation, and income are negatively associated with individual-level mental distress (Ahluwalia et al. 2003; Brown et al. 2003; Zahran et al. 2005; Jiang & Hessler 2009; Cokes & Kornblum 2010; Fredriksen-Goldsen et al. 2010). Age is associated with mental distress, women show greater prevalence of mental distress as well as racial and ethnic minorities. Married
Individuals were less likely to experience mental distress (Ahluwalia et al. 2003; Brown et al. 2003; Zahran et al. 2006; Jiang & Hessler 2009; Cokes & Kornblum 2010; Ampara et al. 2011; Thompson et al. 2012; Mukherjee 2013; Zack et al. 2013; Charara et al. 2016).

Individual prevalence of mental distress has the potential to result in the diminishment of sense of self. Insufficient social support, as well as individual vulnerability caused by mental distress present “the enduring presence of noxious circumstances…(which) functions to strip away the insulation that protects the self against threats to it,” (Pearlin et al. 1981:339). Presence of distress can be attributed to insufficient coping strategies, potentially exacerbated by insufficient social networks, which heighten individual distress, ultimately hindering individual self-efficacy. Vulnerable populations experience discrimination and decreased life satisfaction which in turn creates psychological distress (Strine et al. 2008b; Byrd 2012). Financial strain attributed to socioeconomic status could result in higher distress (Advani et al. 2014). Stressors like these have a hindering effect on self-efficacy, the presence of which would allow for improved psychological well-being and overall quality of life, resulting in greater self-management and promotion of positive health related behaviors (Joekes & Elderen 2007; Gadalla 2009; Gadalla 2010; Motl et al. 2013).

Chronic mental distress can reduce the likelihood of personal motivation to obtain medical care (Shi & Stevens 2005a). The importance of self-efficacy in obtaining necessary healthcare has been noted, especially among those displaying psychological need (Foley et al. 2007; Weng et al. 2010; Raymond et al. 2011; Umubyeyi et al. 2016). Presence of psychosocial stressors result in mental barriers that lead individuals to adopt unhealthy
coping mechanisms, namely smoking, drinking and hinder the adoptions of health promoting behaviors, like use of healthcare services. (Shi & Stevens 2005a).

The need for healthcare can result in the presence of numerous stressors, which may affect those who in turn do not receive the necessary care. Mental distress is associated with not having routine examinations (Willet et al. 2012); delaying necessary care (Jacobs et al. 2015); forgoing outpatient medical visits and preventive care (Thorpe et al. 2006); reporting an unmet need for care (Law et al. 2005); using emergency room care for nonurgent problems (Koziol-McLain et al. 2000); and not having a regular health care provider (Kirchoff et al. 2012). Psychological vulnerability has been found to be associated with lower levels of self-efficacy, which in turn, is associated with individual help-seeking (Judd et al. 2006; Kleinberg et al. 2013). Regular use of the emergency department for health needs is widely believed to contribute to the psychologically vulnerable, by researchers.

A major source of stress from the healthcare system that constituted a hindrance to receiving care was that of cost. Those who reported mental distress were likely to note that financial issues in healthcare as an issue (Mujtabai et al. 2005; Rapalo et al. 005; Gibson et al. 2011; Bruning et al. 2014). Consequently, since health insurance coverage is a significant factor for healthcare costs, its lack is a source of mental distress. The uninsured are consistently shown to have a higher prevalence of mental distress (Penson et al. 2001; Coulter et al. 2002; Ahluwalia et al. 2003; Brown et al. 2003; Strine et al. 2004c Rapalo et al. 2005; Strine et al. 2011; Alang et al. 2014; Bruning et al. 2014; Ward & Martinez 2015). This represents an added vulnerability to the uninsured.
However, there is little research conducted to assess the difference an added vulnerability can make towards access to and use of healthcare services. O’Neal et al. (2014) conducted a study among older African Americans, collected from six churches in North Carolina, assessing the influence insurance status and psychological vulnerability and their interaction on use of preventive care services. It was found that individual psychological vulnerabilities result in variations in the effect of health insurance status. Health insurance coverage increased the likelihood of receiving the preventive treatment when individual displayed higher psychological vulnerability, further indicating the importance of insurance reception for healthcare. Psychological vulnerability inhibited the use of some preventive service. Although the study did not focus only on the uninsured population, it does show the relationship between psychological vulnerability caused by stress and its effect on insurance coverage. From this evidence of dual vulnerabilities effecting use of healthcare services, I draw my hypotheses. There are two general hypotheses, the first with six sub-hypotheses and the second with five sub-hypotheses. Each sub-hypothesis incorporates a different indicator of its general concept, “access” or “utilization.”

Hypotheses

Hypothesis 1: There will be a negative relationship between frequent mentally unhealthy days and access to healthcare services.

Hypothesis 1a: There will be a relationship between frequent mentally unhealthy days and being more likely to not have a usual health facility to go is they respondent is sick or in need of health advice (Y_{1a}).
Hypothesis 1b: There will be a relationship between frequent mentally unhealthy days and taking public transportation to receive care when sick or in need of health advice (Y_{1b}).
Hypothesis 1c: There will be a relationship between frequent mentally unhealthy days and taking more time to go to a facility when sick or in need of health advice (Y_{1c}).
Hypothesis 1d: There will be a relationship between frequent mentally unhealthy days and greater difficulty in going to a health facility when sick or in need of health advice (Y_{1d}).
Hypothesis 1e: There will be a relationship between frequent mentally unhealthy days and delaying getting needed medical care (Y_{1e}).
Hypothesis 1f: There will be a relationship between frequent mentally unhealthy days and being more likely to not be able to get a prescription (Y_{1f}).
Hypothesis 2: There will be a negative relationship between frequent mentally unhealthy days and healthcare service utilization.
   Hypothesis 2a: There will be a relationship between frequent mentally unhealthy days and more time since going to the doctor for a routine checkup. (Y_{1-2a})
   Hypothesis 2b: There will be a relationship between frequent mentally unhealthy days and more time since going to the doctor for any other preventive treatment (Y_{2b}).
   Hypothesis 2c: There will be a relationship between frequent mentally unhealthy days and less household expenditures on healthcare (Y_{2c}).
Hypothesis 2d: There will be a relationship between frequent mentally unhealthy days and less hospitalizations ($Y_{2d}$).

Hypothesis 2e: Prevalence of frequent mentally unhealthy days and greater utilization of the emergency room ($Y_{2e}$).
CHAPTER THREE

RESEARCH DESIGN AND METHODS

The Health Care Access survey was included in a larger study funded by a grant from The BlueCross BlueShield of South Carolina Foundation. This study was conducted in summer 2014, during the first wave of the Affordable Care Act enrollment. After the implementation of the ACA, South Carolina still faces substantial health and healthcare needs. As of 2016, 20% of South Carolina residents rate their health as fair or poor, 67% are overweight or obese, and South Carolina continues to have high rates of infant mortality in comparison to the rest of the nation. Fifteen percent of the adult population remains uninsured; among them, almost one in five would have been eligible for insurance coverage under the Medicaid expansion provision of the ACA (Kaiser Family Commission 2016).
Figure 2: Map of the counties in South Carolina where study respondents reside.

Green= < 10 respondents; Yellow= 10-99 respondents; Red= <100 respondents

While respondents were from all parts of South Carolina, ten counties provided the bulk of the data. These counties are Calhoun (n=10), Orangeburg (n=196), Berkeley (n=11), Dorchester (n=59), Charleston (n=128), Florence (n=107), Marlboro (n=72); Greenville (n=135), Anderson (n=176), Oconee (n=14). Due to their prominence, it is important to consider the health landscape of these areas independently of the study. Beyond the presence of insurance hotspots and the scope of the research study, several of these areas fare well concerning health. Oconee, Anderson, Greenville, Charleston,
Dorchester, Berkeley and Calhoun counties have scored highly for health factors and health outcomes, according to county health rankings (SCaleDown 2015). Presence of health clinics targeted towards the underserved are available in these areas. However, lack of insurance proves to be a constant issue as well as access to needed services.

Researchers conducted the study with hopes to provide evidence to aid in a discussion and development of cost-effective methods to expand healthcare for the long-term uninsured in South Carolina. The projects consisted of four major components, including secondary data analysis of statewide data, focus groups and interviews, and the Health Care Access survey (Clemson University Department of Public Health Sciences 2015). Through secondary data analysis, the researchers identified areas with concentrations of the long term uninsured, deemed “hot-spots.” After determining the location of the long-term uninsured, the researchers conducted the interviews and survey information to develop an understanding of the needs of the long-term uninsured community. The Health Care Access survey was conducted in-person within the “hot-spot communities in South Carolina. “Hot spot” communities are defined as areas with a 30% or greater concentration of the long term uninsured (Department of Public Health Sciences 2015). Respondents were sampled using multistage convenience sampling.

The independent variable is *mentally unhealthy days* (MUD) \((X_1)\). This variable was assessed using a question from the Behavioral Risk Factor Surveillance System (BRFSS): “thinking about your emotional or mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your emotional or mental health not good?” As days increase, so does the amount of
perceived stress as experienced by the individual. Individuals who reported 14 days or greater of “not good” emotional or mental health were considered to have frequent mental distress. The number of respondents who reported frequent mental distress was 236 (25.1% of total respondents).

The dependent variables are access to care and utilization of health services. These are latent variables representing general concepts not directly measured. Access to care is measured through questions in the survey that aligned with Penchansky and Thomas (1981) dimensions of access, as well as the definition that was previously stated: usual source of care, means of transportation to care, difficulty to receive care, amount of time taken to receive care, last time since last doctor’s visit, delay receiving care because of cost, delay receiving care for reasons other than cost, and inability to get a necessary prescription. Utilization of health services was measured by asking the following questions: time since last check-up, time since last sought preventive care services, amount of time spent on healthcare within the last year, hospitalized in last twelve months, and emergency room visit in last twelve months. Demographic variables of gender (X2), age (X3), marital status (X4), race (X5), Hispanic (X6), employment status (X7) and education level (X8), will be used as control variables. These demographics have been shown to be significantly related to both uninsured status and frequent mental distress, as well as predictors to access and utilization of health services.

Analysis

Chi square analyses will be used to ascertain the differences between the long-term uninsured who suffer from frequent mental distress and those who do not. To discover the
direct effects of mentally unhealthy days to the access and utilization variables, two regression models will be used. Model 1 will just show the relationship of mentally unhealthy days and the indicators of access and utilization, highlighting the effect of the potential need for services and the potential barriers. Ordinal regression, binomial regression and multinomial regression analyses will also be conducted on this mode to show whether mentally unhealthy days is predictive of the indicators of access and utilization variables. Model 2 will add the demographic variables with FMD and the indicators of access and utilization of health care services. Separating this will discover the influence of potential need for services is mediated by the other demographic variables.

**Figure 3: Methodological models for regression**

![Methodological models for regression](image)

Model 1:

\[ Y = \alpha + b_1 x_1 + e, \text{ where} \]

- \( X_1 = \text{frequent mental distress} \)
- \( B_1 = \text{slope of} X_1 \)
- \( \alpha = \text{the constant} \)
- \( e = \text{the error term} \)

and \( Y = \text{the dependent variable as follows} \)
Model 2:

\[ Y = \alpha + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + e \]

- \( X_1 = \) frequent mental distress
- \( X_2 = \) gender
- \( X_3 = \) age
- \( X_4 = \) marital status
- \( X_5 = \) race
- \( X_6 = \) Hispanic
- \( X_7 = \) employment status
- \( X_8 = \) education level

- \( b = \) slope of \( X \)
- \( \alpha = \) the constant
- \( e = \) the error term

and \( Y = \) the dependent variable as follows

- \( Y_{1a} = \) usual source of care
- \( Y_{1b} = \) type of transportation to receive care
- \( Y_{1c} = \) time taken to go to a healthcare facility
- \( Y_{1d} = \) difficulty in going to a health facility
- \( Y_{1e} = \) delaying getting needed care
- \( Y_{1f} = \) inability to get a prescription
- \( Y_{2a} = \) time since going to the doctor for routine checkup
- \( Y_{2b} = \) time since going to the doctor for preventive treatment
- \( Y_{2c} = \) household expenditures
- \( Y_{2d} = \) amount of hospitalizations
- \( Y_{2e} = \) use of the emergency room for care

There will be eleven variations on Model 2 according to the choice of dependent variable
CHAPTER FOUR

RESULTS

Descriptive Characteristics of the Sample

The survey was completed by 954 respondents. Respondents ranged from 18 to 64 years of age. They resided in South Carolina and had lived without insurance for two years or longer at the time of the survey. Data were collected from May 2014 through January 2015, beginning just after the first enrollment period for the ACA had ended. The mean age of respondents was 42 years old. Most of the respondents were women (58.1%). The mean annual household income (self-reported) earned was $12,574. Slightly over one-half (53.5%) of the respondents had graduated high school or had received an equivalent diploma. Slightly under one-half (48.7%) were unemployed but seeking employment. Nearly three-fourths (72.0%) of the respondents were African American (Department of Public Health Sciences 2015). On average, respondents reported spending $2,436 on health-related needs annually.

Chi Square Analyses

Chi square analyses were conducted to determine if there were significant associations between the amount of mentally unhealthy days and access to health care services and healthcare service utilization. Complete results are found in table 1.
Table 1: Mentally Unhealthy Days and Indicators of Access and Utilization, Chi-Square Analyses

<table>
<thead>
<tr>
<th>Mentally unhealthy days</th>
<th>1-6</th>
<th>7-12</th>
<th>13-18</th>
<th>19-24</th>
<th>25-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Usual Source of Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>171</td>
<td>16</td>
<td>18</td>
<td>4</td>
<td>34</td>
</tr>
<tr>
<td>Yes</td>
<td>429</td>
<td>79</td>
<td>54</td>
<td>27</td>
<td>100</td>
</tr>
<tr>
<td>df= 4; X² = 8.900; p=.064</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.) How to usually get to care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive</td>
<td>227</td>
<td>39</td>
<td>20</td>
<td>8</td>
<td>33</td>
</tr>
<tr>
<td>Is Driven</td>
<td>191</td>
<td>22</td>
<td>25</td>
<td>9</td>
<td>39</td>
</tr>
<tr>
<td>Taxi, Bus, Train, Public</td>
<td>73</td>
<td>8</td>
<td>11</td>
<td>5</td>
<td>24</td>
</tr>
<tr>
<td>Walks</td>
<td>82</td>
<td>23</td>
<td>13</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Some other way</td>
<td>27</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>df= 16; X² = 30.291; p=.017</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.) How long to get to care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;15 min</td>
<td>259</td>
<td>30</td>
<td>21</td>
<td>9</td>
<td>48</td>
</tr>
<tr>
<td>15-30 min</td>
<td>229</td>
<td>45</td>
<td>34</td>
<td>11</td>
<td>47</td>
</tr>
<tr>
<td>31-60 min</td>
<td>77</td>
<td>18</td>
<td>15</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>61-90 min</td>
<td>17</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>91-120 min</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>&gt;121 min</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>df=20; X² = 33.400; p=.030</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.) How difficult to get to care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very difficult</td>
<td>90</td>
<td>7</td>
<td>15</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>Somewhat difficult</td>
<td>124</td>
<td>31</td>
<td>22</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>Not too difficult</td>
<td>211</td>
<td>31</td>
<td>19</td>
<td>9</td>
<td>33</td>
</tr>
<tr>
<td>Not at all difficult</td>
<td>174</td>
<td>26</td>
<td>15</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>df= 12; X² = 37.816; p=.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.) Delayed care not for money</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>514</td>
<td>80</td>
<td>66</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>Yes</td>
<td>85</td>
<td>14</td>
<td>6</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td>df= 4; X² = 7.917; p=.095</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.) Delayed care due to cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>247</td>
<td>29</td>
<td>23</td>
<td>11</td>
<td>30</td>
</tr>
<tr>
<td>Yes</td>
<td>352</td>
<td>66</td>
<td>49</td>
<td>20</td>
<td>104</td>
</tr>
<tr>
<td>df= 4; X² = 19.425; p=.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentally unhealthy days</td>
<td>1-6</td>
<td>7-12</td>
<td>13-18</td>
<td>19-24</td>
<td>25-30</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----</td>
<td>------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>7.) Could not get necessary prescription</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>315</td>
<td>38</td>
<td>30</td>
<td>11</td>
<td>45</td>
</tr>
<tr>
<td>Yes</td>
<td>283</td>
<td>56</td>
<td>42</td>
<td>20</td>
<td>87</td>
</tr>
<tr>
<td>df = 4; (X^2 = 20.603; p = .000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.) How long since last check up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within past year</td>
<td>216</td>
<td>36</td>
<td>26</td>
<td>14</td>
<td>45</td>
</tr>
<tr>
<td>Within last 2 years</td>
<td>133</td>
<td>18</td>
<td>9</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>Within last 5 years</td>
<td>130</td>
<td>20</td>
<td>17</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>5 or more years</td>
<td>103</td>
<td>20</td>
<td>19</td>
<td>8</td>
<td>41</td>
</tr>
<tr>
<td>Never</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>df = 16; (X^2 = 27.886; p = .033)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.) Sought preventive care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>438</td>
<td>61</td>
<td>50</td>
<td>20</td>
<td>86</td>
</tr>
<tr>
<td>Yes</td>
<td>162</td>
<td>34</td>
<td>21</td>
<td>11</td>
<td>48</td>
</tr>
<tr>
<td>df = 4; (X^2 = 6.690; p = .153)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.) Annual cost of healthcare</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$0-$100</td>
<td>161</td>
<td>26</td>
<td>16</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>$117-$650</td>
<td>145</td>
<td>21</td>
<td>18</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>$700-$2500</td>
<td>212</td>
<td>31</td>
<td>27</td>
<td>15</td>
<td>40</td>
</tr>
<tr>
<td>$2880-$8640</td>
<td>49</td>
<td>9</td>
<td>6</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>$9000-$144000</td>
<td>31</td>
<td>7</td>
<td>4</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>df = 16; (X^2 = 13.403; p = .643)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.) Hospitalized in the last year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>521</td>
<td>79</td>
<td>54</td>
<td>18</td>
<td>97</td>
</tr>
<tr>
<td>Yes</td>
<td>79</td>
<td>16</td>
<td>18</td>
<td>13</td>
<td>37</td>
</tr>
<tr>
<td>df = 4; (X^2 = 32.964; p = .000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.) Visited ER in last year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>364</td>
<td>38</td>
<td>30</td>
<td>13</td>
<td>57</td>
</tr>
<tr>
<td>Yes</td>
<td>236</td>
<td>57</td>
<td>42</td>
<td>18</td>
<td>82</td>
</tr>
<tr>
<td>df = 4; (X^2 = 36.667; p = .000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 1 displays the results of the chi square analyses on the indicators of access to healthcare services and utilization of healthcare services. The results show a weak positive association ($V = .098$) between usual source of care and mentally unhealthy days ($X^2(4, 932) = 8.900$, p = .064); increase in mentally unhealthy days was associated with not having a usual source of care. There also was a weak positive association with getting to care ($X^2(16, 932) = 30.291$, p = .017, $V = .090$), time getting to care ($X^2(20, 924) = 33.400$, p = .030; $V = .095$), and difficulty in receiving care ($X^2(12, 930) = 37.816$, p = .000, $V = .116$). When Spearman correlations were run on the ordinal variables, time getting to care and difficulty getting to care, a weak correlation was found to be statistically significant ($r_s (924) = .107$, p = .001; $r_s (930) = -.148$, p = .000, respectively). Delaying care due to healthcare costs ($X^2(4, 931) = 19.425$, p = .001) and due to other reasons besides money ($X^2(4, 929) = 7.917$, p = .095) also showed a weak, positive association ($V = .092$, and .144, respectively). The results showed a weak positive association ($V = .149$) between mentally unhealthy days and not receiving necessary prescriptions ($X^2(4, 927) = 20.603$, p = .000).

Regarding the utilization of healthcare services, results showed a weak positive association between mentally unhealthy days and duration since last check-up ($X^2(16, 910) = 27.886$, p = .033, $V = .088$). Spearman correlations showed a weak, positive correlation between mentally unhealthy days and time since last routine check-up, which was moderately statistically significant ($r_s (910) = .064$, p = .053). However, the association regarding seeking preventive care was found insignificant ($X^2(4, 931) = 6.690$, p = .153). Similarly, annual household expenditures were not significantly associated with mentally unhealthy days ($X^2(16, 927) = 13.403$, p = .643). A Spearman’s rank-order correlation was
run to determining the relationship between mentally unhealthy days and annual cost of healthcare; however the finding was insignificant ($r_s (927)= .043, p=.186$). The associations for hospitalizations ($X^2(4, 932) = 32.964, p=.000$) and emergency room visits in the past twelve months ($X^2(4, 932) = 36.667, p=.000$) were shown to be slightly stronger ($V= .188$ and $.198$, respectively). Association showed there was a moderately strong positive association between annual cost of healthcare and mentally unhealthy days ($X^2(16, 927) = 13.403, p=.643$).

Regression Analyses

The following section looks at the influence of mentally unhealthy days, for both models, on the indicators of access to healthcare and healthcare utilization. Model 1 looks at mentally unhealthy days on its own. Model 2 adds in the control variables: gender, age, marital status, race, Latino, employment status, and education level. Due to the varied nature of the sub questions of the variables, the regression analyses were conducted to fit the level of measurement for the indicators. Regression analyses used are binomial logistic regression, linear regression, ordinal logistic regression, and multinomial logistic regression. The first model is shown in the left column in Table 2 and the second model is given in the right column.

<table>
<thead>
<tr>
<th>Table 2: Mentally Unhealthy Days and Indicators of Access and Utilization, Regression Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
</tr>
<tr>
<td>$\beta$</td>
</tr>
<tr>
<td>(Std. Error)</td>
</tr>
<tr>
<td>Usual Source of Care</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Table 2 cont.: Mentally Unhealthy Days and Indicators of Access and Utilization, Regression Analyses

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(\beta) (Std. Error)</td>
<td>(\beta) (Std. Error)</td>
</tr>
<tr>
<td>How to usually get to care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is Driven</td>
<td>.014* (.008)</td>
<td>.002 (.010)</td>
</tr>
<tr>
<td>Taxi, bus, train, public</td>
<td>.031** (.010)</td>
<td>.023** (.012)</td>
</tr>
<tr>
<td>Walks</td>
<td>.032*** (.009)</td>
<td>.029** (.011)</td>
</tr>
<tr>
<td>Some other way</td>
<td>.029* (.015)</td>
<td>.018 (.016)</td>
</tr>
<tr>
<td>How long to get to care</td>
<td>.020*** (.006)</td>
<td>.016** (.006)</td>
</tr>
<tr>
<td>How difficult to get to care</td>
<td>-.031**** (.006)</td>
<td>-.032**** (.006)</td>
</tr>
<tr>
<td>Delayed care not for money</td>
<td>.010 (.009)</td>
<td>.006 (.009)</td>
</tr>
<tr>
<td>Delayed care due to cost</td>
<td>.034**** (.007)</td>
<td>.038**** (.008)</td>
</tr>
<tr>
<td>Could not get necessary prescription</td>
<td>.031**** (.007)</td>
<td>.032**** (.007)</td>
</tr>
<tr>
<td>How long since last check up</td>
<td>.012** (.006)</td>
<td>.013** (.006)</td>
</tr>
<tr>
<td>Sought preventive care</td>
<td>.017** (.007)</td>
<td>.013* (.008)</td>
</tr>
<tr>
<td>Household annual cost of healthcare</td>
<td>.057* (23.758)</td>
<td>.044 (25.792)</td>
</tr>
<tr>
<td>Hospitalized in the last year</td>
<td>.038**** (.008)</td>
<td>.036**** (.008)</td>
</tr>
<tr>
<td>Visited ER in last year</td>
<td>.032**** (.007)</td>
<td>.036**** (.007)</td>
</tr>
</tbody>
</table>

Significance level: \(P<.10^*; p<.05^{**}; p<.001^{***}; p<.000^{****}\)
(Note: Model 1 gives bivariate regression results for each indicator; Model 2 gives the net results, estimates for control variables not shown.)
Model 1 was shown to be statistically significant for five of the seven questions related to access to healthcare services. Presence of a usual source of care was not significantly predicted by mentally unhealthy days and Model 1 did not have a significant fit. When solely considering mentally unhealthy days as a predictor of method of transportation, mentally unhealthy days accounted for 1.8% of the variance, and was statistically significant $F(4,941)=16.811, p=.002$. When compared to driving oneself to a care facility, those who experienced increasing amount of mentally unhealthy days took public transportation or walked to the facility ($\beta=.031$ and $.032$, respectively; $p<.01$). There was only a moderately significant association for those who were driven by someone else ($\beta=.014$, $p=.086$) and using another means of travel ($\beta=.029$; $p=.052$). Increase in time taken to get to a healthcare facility was significantly associated by an increase in mentally unhealthy days ($\beta=.020$; $p<.001$), and the model was also significant ($F(1,933)=10.557, p=.001$) and accounted 1.1% of the variance. Similarly, difficulty in getting to care was also significantly associated by mentally unhealthy days ($\beta=-.031; p=.000$) and Model 1 accounted for 3.0% of the variance ($F(1,939)=28.656, p=.000$). Based on the phrasing of the questions, an increase in mentally unhealthy days was associated with experiencing greater difficulty. The results showed a split when delaying care due to money versus delaying care due to other reasons. Model 1 accounted for only 2.5% of the variance for delays attributed to money ($F(1,940)=23.323, p=.000$). Mentally unhealthy days was also significantly associated ($\beta=.034; p=.000$) with delaying care due to money. Delaying care due to other reasons was not significant in Model 1 nor was mentally unhealthy days significantly associated. Additionally, receiving a necessary prescription was significantly
associate with mentally unhealthy day (β= .031; p<.000) and Model 1 accounted for 2.4% of its variance.

The bivariate relationships in Model 1 was shown to be a statistically significant fit for all five indicators for healthcare service utilization (p< .10). Mentally unhealthy days was significantly associated for more time since getting a routine check-up (β= .012; p<.038). Model 1 also accounted for 0.4% of the variance in that indicator (F(1, 919)=4.062, p=.044). The model for seeking preventive treatment accounted for 0.6% of the variance (F(1, 940)=6.040, p=.014), with mentally unhealthy days being significantly associated of seeking preventive care in the past two years (β= .017; p<.014). The relationship between annual healthcare expenditures and mentally unhealthy days was moderately significant (β= .057; p<.082), showing concurrence of increases inn annual costs and unhealthy days; Model 1 accounted for 0.3% of the variance (F(1, 935)=3.030, p=.082). In Model 1, mentally unhealthy days showed a strong influence in hospitalizations and emergency room visits in the past years; accounting for 2.5% and 2.6% of the variance, respectively (F(1, 941)=23.772, p=.000; F(1, 941)=25.150, p=.000). Staying in hospitals (β= .038) and emergency rooms (β= .032) in the past year was significantly associated (p=.000).

As expected with multiple verses bivariate regressions, Model 2 accounted for a higher percentage of the explanation of differences for all variables, except annual household expenditure for healthcare, than Model 1. Additionally, several models were proven to be of higher significance with the inclusion of the covariates in Model 2; the model explained 3 to 13.5 times the percentage of the variance in the dependent variable.
questions. Like Model 1, usual source of care was not found to be significantly associated with mentally unhealthy days ($\beta = .006$, $p = .479$); however, Model 2 did have a better fit, accounting for 4.6% of the variance ($F(17, 913) = 43.226$, $p < .000$). Model 2 accounted for almost a quarter of the variance (24.3%) for method of transportations ($F(68, 913) = 254.768$, $p = .000$). Mentally unhealthy days was associated with using public transportation ($\beta = .023$, $p = .044$) and walking to get to a healthcare facility ($\beta = .029$, $p = .007$), in comparison to driving oneself. Taking more time to get to facility ($\beta = .016$, $p = .014$) and experiencing difficulty in getting to a facility ($\beta = -.031$, $p = .000$) was significantly associated with mentally unhealthy days; the model accounted for 4.7% ($F(17, 905) = 43.366$, $p = .000$) and 8.0% ($F(17, 911) = 76.338$, $p = .000$) of the variance, respectively. Unlike Model 1, Model 2 was a significant fit for both delaying care due to monetary issues ($F(17, 912) = 53.032$, $p = .000$) and delaying due to other reasons ($F(17, 911) = 28.074$, $p = .044$), accounting for 3.0% and 5.6% of the variance. Model 2 accounted for 5.6% of the variance in accessing necessary prescriptions ($F(17, 908) = 52.048$, $p = .000$); results showed that lack of ability to get a necessary prescription was significantly associated with mentally unhealthy days ($\beta = .031$, $p = .000$).

Model 2 was shown to be a statistically significant fit for four out of five questions regarding healthcare service utilization. Model 2 accounted for 7.0% of the variance for routine check-up ($F(17, 892) = 64.334$, $p = .000$); mentally unhealthy days was statistically significantly associated with experiencing more time since having a check-up ($\beta = .013$; $p = .044$). Seeking preventive care was of similar significance, with Model 2 accounting for 4.6% of the variance ($F(17, 912) = 45.354$, $p = .000$). However, mentally unhealthy days was
only moderately significantly associated with receiving preventive treatment ($\beta = .013; p=.081$). Interestingly, annual healthcare cost found Model 2 to not be a significant fit, although mentally unhealthy days was still found to be significantly associated with greater expenses ($\beta = .044; p=.000$). Model 2 accounted for 5.0% of the variance for hospitalizations in the past year ($F(17, 913)=47.258, p=.000$) and 7.2% of the variance for emergency room visitation in the past year ($F(17, 913)=68.078, p=.000$). “Mentally unhealthy days” was still found to be significantly associated with hospitalization ($\beta = .036; p=.000$) and ER visits ($\beta = .036; p=.000$).
CHAPTER FIVE

DISCUSSION

Discussion of Results

The study examined effects of psychological vulnerability, measured by mentally unhealthy days, among the long term uninsured in South Carolina on access to healthcare and healthcare service utilization. Access was defined as the “ability of persons needing health services to obtain appropriate care in a timely manner,” (Shi and Singh 2015:571). This definition is derived from Penchansky and Thomas’s (1981) dimensions of health care: availability, accessibility, accommodation, affordability and acceptability. The indicators on access used in this study were chosen due to their adherence to these dimensions. Indicators pertaining to utilization of healthcare services were chosen because they were instance that dealt with the individuals’ actions in using healthcare. Other variables included were gender, age, marital status, race, Hispanic, employment status, and education level; they were added as control variables to clarify the relationship between the independent and dependent variables. Results show an overall lesser degree of fit between the health care system in the hotspots and the individuals residing in the area. Ultimately, psychological vulnerability is a significant factor relating to access to healthcare service. This adverse relationship subsequently translates into the adverse relationship between healthcare service utilization and mentally unhealthy days.

Usual source of care and the ability to get necessary prescriptions coincide under the availability dimension of access and are directly related to the enabling characteristics
of the study area. Findings indicated inadequate availability of prescriptions and no significant relationship between mentally unhealthy days and having a usual source of care. Previous research on the mentally distressed and the uninsured were contrary to this findings for usual source of care (Kaiser 2012a; Kirchoff et al. 2012), which were used to determine hypothesis 1a. However, the data in this study were not a probability sample. Additionally, the usual source of care is largely reflective of the health system of an area and of the community in its entirety. When the researchers of this study spoke to the community at large, they emphasized difficulties with the healthcare delivery system collectively. They spoke about having difficulty seeing healthcare providers; however, this discussion did not include other factors within the uninsured population (Department of Public Health Sciences 2015). Due to this, instances of usual source of care would not be strongly influenced by the individual level need factors, like psychological vulnerability.

However, individual-level need characteristics offer a better explanation of differential access within a community (Andersen et al. 2002), e.g. the relationship between the supply of health care and the population being served. The uninsured within the hot spot communities who simultaneously experienced more mentally unhealthy days were also likely to experience accessibility issues. Transportation limitations, increased time spent getting to a care facility, and general difficulty receiving health care services were prevalent with increased vulnerability measured by mentally unhealthy days. Transportation besides driving oneself has a direct relationship to realized access to regular care and chronic care services (Arcury et al. 2005). Increased distance from health services has been found to decrease use of regular health care and also to be associated with the
use of nonurgent emergency room visits (Mathison et al. 2013). Previous research indicated spatial accessibility as a routine cause of stress, among various study populations (Arcury et al. 2005; Peipins et al. 2010; Comber et al. 2011; Sagretano et al. 2014; McGrail et al. 2015; Haley et al. 2017). Results indicated that the community health resources were not optimal to be obtained by those who experience mentally unhealthy days, ultimately hindering the individuals’ ability to use services as needed.

Delayed use of care services represents this point where potential access of the health care system is hindered. Study participants vocalized their difficulties with getting care as needed; wondering why they should bother with going to care and spoke of getting tired of going to get their needed care (Department of Public Health Sciences 2015). Delaying care was significantly directly related to this population’s use of services, primarily attributed to financial issues than other motives.

Uninsured individuals are susceptible to financial difficulties associated with health care expenses. Health insurance is a means to buffer individuals from potentially unaffordable payouts for medical care. Increased psychological vulnerability is associated with increased annual household expenditures for healthcare. Those who owe more money would likely feel more intense burdens; focus group study participants cited monetary issues as a main deterrent to receiving healthcare (Department of Public Health 2015). Financial difficulties and debt are routinely cited as significant sources of stress for the uninsured, as well as for the psychologically vulnerable (Bruning et al. 2014; Chin et al. 2017; Han et al. 2015; Pirraglia et al. 2011; Byrne et al. 2003; Wilson and Klein 2000; Department of Public Health Sciences 2015). As such, distress becomes compounded with
high medical cost, resulting in delaying necessary healthcare. (Smolderen et al. 2011; Burgard and Kaplousova 2013).

Despite use of preventive care for those experiencing greater numbers of mentally unhealthy days, receipt of routine check-ups was found to have the opposite relationship. Routine check-ups and preventive care are health-promoting behaviors that are typically secured through primary care services. Access barriers to such care is likely due to the lack of ability to successfully take advantage of those services, due to the stress caused by social environments; potentially explained by increased psychological vulnerability ultimately resulting in greater instances of hospitalizations and emergency room visits. While the findings may seem contrary to the presence of a usual source of care, the prevalence of visits to the hospital and emergency room may be a compounded result of delaying care and annual costs borne by patients.

Respondents recalled situations in the healthcare facilities where they felt relegated to certain clinics or the emergency room instead of a typical usual source of care (Department of Public Health 2015). Those firsthand accounts have been substantially corroborated through previous literature. Bodenmann et al. (2015) found that frequent attenders of the emergency room were likely experiencing several vulnerabilities, less financially able to handle exorbitant medical costs, and without a primary care physician. Emergency room visits also are easier to secure or access than primary care (Grumbach et al. 1993; Hadley and Cunningham 2004). Substituting emergency room use for nonurgent reasons instead of using a regular source of care is a typically a last resort for the
vulnerable; it is the culmination of stress, psychological comorbidities, and lack of social support (Padgett and Brodsky 1992).

Overall, this study provides insight and necessary nuance to the plight of the uninsured. Particularly, how additional vulnerability, i.e. psychological vulnerability, shows inadequate access to health care service and adverse utilization behaviors, related to the problems of health care system within the community. Inadequate access suggests the community resources work to impede individuals’ actions and motivation to successfully realize the necessary healthcare services. Mechanic & Tanner (2007:1222) wrote that “vulnerability involves several interrelated dimensions, individual capacities and actions; the availability or lack of intimate and instrumental support; and neighborhood community resources that may facilitate or hinder personal relationships.” The community atmosphere of these uninsurance “hot spots” does not prompt positive health behaviors in the individuals within it who need the empowerment the most. This study adds weight to the consideration of how to best serve those who are the most vulnerable, specifically regarding this current era in healthcare reform. In addition to providing more information about the uninsured, this research can have practical implications in the political sphere, as well as within South Carolina community initiatives.

**Political Implications**

Health care reform is at the forefront of current political debates. This study adds nuance to understanding the circumstances of the uninsured and is useful to further understand the plight of the uninsured. The study framework offers a perspective on how community resources or their lack can affect a vulnerable population. The
uninsured are the primary focus of the ACA, learning about their welfare and how the experience the health care system would aid in eliminating the attendant disparities. Furthermore, this would encourage the national push towards targeting hot spots that experience poor health and health care deficits. It has been stated that “in South Carolina, we are asking ‘how do we most improve the health of [our] own citizens,’” (Keck 2012), citing a focus on health and well-being, as well as the social determinants of health. Because this study is specifically related to psychological well-being, it aligns with the need to target individual vulnerabilities, using state-specific data that may prove useful for developing analyses for a unique state-based reform.

During political discussions for repealing and replacing the ACA, conservative politicians posited implementation should be focused at the state level. The Graham-Cassidy bill (H.R.1628) was founded on a state-specific premise: the federal government should remove itself from many of the policy decisions about the regulation of health insurance (Antos & Capretta 2017). States would tailor programs to local conditions, using their specific data. Such specificity could allow reform to occur with the states having more control and flexibility. If implementation of state-based exchanges were to occur, greater information about the uninsured would be extremely necessary.

Furthermore, the recent alterations to the tax code have their own implications for health care reform. Congress voted to repeal the ACA’s individual shared responsibility penalty in 2019 (Schencker 2017). The healthcare delivery system may face profound reductions in federal funding as the bill is estimated to increase the federal deficit by $1.45
trillion. The deficit would mean less money for doctors and hospitals to provide necessary services. Articles have said that Medicare and Medicaid are major targets for the efforts to limit spending (Blumenthal 2017; Moulds and Bishop 2017; Sanger-Katz et al. 2018). The Congressional Budget Office estimated an increase of the uninsured population by 13 million, due to elimination of the individual shared responsibility penalty (Congressional Budget Office 2017). Less coverage could be available for the vulnerable such as the elderly and the poor. With the potential rise in the uninsured population, studies that focus on vulnerable populations and communities are vital for future healthcare initiatives.

The influence of the ACA is tentative, as it is subjected to several efforts towards repeal and replacement under the current administration. Prior to the passage of the tax bill there were several orders given under the Trump administration that undermine the ACA, e.g. repealing the individual mandate, ending the cost-sharing reimbursement, expanding access to plans that allow employers to opt out of the ACA packages, etc. (Liptick et al. 2017; King 2018; Pear 2018). Additionally, amidst uncertainty in the federal health insurance policy, several Americans have forgone health insurance, resulting in an increase in the uninsured population of approximately 3.2 million (Bump 2018). Based on the results of this study, it is imperative that policy makers consider how policy will influence the extent of uninsurance in communities and the resources that communities will have available for their members.

Community Implications

Community-level implications of this research could directly influence the availability of health care resources and empower the individuals in the community.
Despite the positive changes associated with the ACA, there are still changes that could be made to reach those who are vulnerable. Community initiatives can be implemented to help bridge the gap between the political maneuverings and individual action. This study, in combination with community assessment data that was mandated under the ACA, would be useful to illustrate the specific health needs of these places. Even under the new administration, such data remain necessary to revisit the system and the health care market. New initiatives and services could be implemented to bridge the gap for the underserved and the uninsured.

Under the ACA, hospitals had to conduct community health needs assessments and create plans to help population health. Results of the 2016 assessments deem access to healthcare services as a priority, especially in hotspot areas. Each assessment suggested strengthening the areas’ health care systems to more effectively reach those who need the most assistance. The primary counties of the study population were Oconee, Anderson, Greenville, Marlboro, Florence, Charleston, Dorchester, and Orangeburg, and Calhoun. Oconee, Anderson and Greenville have health care under the Greenville Health System (GHS), most do have health insurance in Greenville but they say they know someone with difficulty getting care due to the cost of insurance or out of pocket payments. There were lower instances of preventative care for women and lower income facilities for basic care (GHS 2016).

Marlboro County is regularly a poor performer for healthcare in South Carolina. Access to healthcare is a top priority, as well as collaboration with providers, local government, and human service organizations, to address the socioeconomic barriers.
Furthermore, the area has no bus system, so transportation reform is crucial (McLeod Health 2016a). Florence County seeks to improve access by working with health initiatives to support free clinics providing free care, as well as offering transportation to health care facilities (McLeod Health 2016b). Charleston and Dorchester Counties are taking action to strengthen access to care by engaging their communities, reinforcing activities, and improving transportation (Roper St. Francis 2016).

Orangeburg and Calhoun Counties’ access problems are rooted in poverty, lack of knowledge about the ACA, and lack of community support and resources (Tri County Health Network 2016). Initiatives should be given greater resources to promote outreach and tackle the issues that were uncovered through the health needs assessments.

Community initiatives have a more direct impact for empowerment. Focus on health hotspots has been focal in population health initiatives under the ACA. Hot spot initiatives are supposed to enhance primary care services in collaboration with various resources of the communities they serve (Gawande 2011). For example, California started a hot spot initiative that focuses on a high uninsured population. Officials there said that focusing on the hotspots helps to get the word out on a community level (Ostrov 2015). San Francisco implemented a dual health insurance/healthcare service program, the San Francisco Health Care Security Ordinance and City Option that worked to lower their insurance rates and provide healthcare services to the uninsured (Kauffman 2017). Both programs substantially reduced the uninsurance rates within their communities (Kramer & Alberts 2016; Kauffman 2017). Communities have a great influence on the
enabling characteristics of access and must enforce greater awareness of care directly to the members of the community. Greater outreach and knowledge can be an important step towards servicing the vulnerable, developing community healthcare resources, and encouraging utilization of healthcare (Andersen et al. 2002; Cunningham et al. 2007; Hardt et al. 2013).

Study participants indicated a disconnect between the information healthcare providers gave and a lack of health literacy (Department of Public Health 2015). A lack of understanding may be a potential barrier for someone who wants and needs some form of healthcare assistance. Since the implementation of the ACA, South Carolina has several initiatives that focus on better access to healthcare services. Programs such as AccessHealth SC, HeART initiative, the Healthy Outcomes Plan, Welvista, are implemented in various places through the state to deliver care to people who are vulnerable. Improvement is required. AccessHealth SC does not deliver services to four counties that contain hotspot locations for the uninsured included in this study (i.e., Marlboro, Calhoun, Orangeburg, Anderson). HeART, Healthy Outcomes Plan and Welvista are connected to the state’s Medicaid program; they would not be helpful for those who are uninsured and already a part of the coverage gap. Furthermore, these programs must include methods to empower individuals who are vulnerable so that they access and use services as necessary.

One method SC initiatives for health care could implement in their programs to empower patients and influence individual self-efficacy is to utilize community health workers (CHWs). CHWs are “lay members of communities who work either for pay or
as volunteers in association with the local health care system in both urban and rural
environments and usually share ethnicity, language, socioeconomic status and life
experiences with the community members they serve,” (Goodwin & Tobler 2008:1). In
South Carolina, the objective of such workers is to assist health care providers and
improve patients care and their health outcomes. These individuals act as a bridge
between the health care system and the patient to maximize health outcomes (SCDHHS
2012a). These workers would aid the uninsured by disseminating information and work
with the vulnerable to properly navigate the primary care options available in the
community resource that takes an active role in empowering the vulnerable
populations. CHWs are testing various strategies to educate and empower their clients
towards self-sufficiency (Lang et al. 2014).

The ACA showed interest in expanding the number of CHWs. The ACA
“increased access to preventative health services under Medicaid, implementing
regulations classified that states may designate non-licenses providers to provide
preventative service,” (Katzen and Morgan 2014). In South Carolina, most CHWs work
under the Medicaid program to assist with the department of health and human services’
Health Access at the Right Time (HeART) initiative (SCDHHS 2012b). However, due
to the non-expansion of Medicaid in South Carolina, the benefits of CHWs are not
available to many who require their services. Despite this limitation, there are still
avenues to empower individuals to optimize use of the health care system.

The practical implications for this research would have widespread influence.
Politically, these data would be useful to make changes for the community level. The
state-specific focus for insurance markets can work to the benefit of the communities that are most of need. A tailored health care system would allow for greater penetration on the specific local issues. Areas like these hotspots, with a high level of community uninsurance, experience great disadvantage due to their lack of community resources which impedes the ability of the individuals that reside within the community to fully realize their access to care. Political reform could increase the available resources for disadvantaged communities and/or enable communities to utilize what they have at their disposal to aid those in need better. While this research seemingly targets a very particular issue, the implications could be beneficial to the national health care system. Policy works to target the interrelated risks present at the community level and provide community resources to empower vulnerable individuals.
CHAPTER SIX

CONCLUSION

The implementation of the ACA was one of the most historically significant changes to the United States health care system. While it sought to expand health insurance coverage and assist in spreading access to health care services to the remaining uninsured, it fell short of its many objectives. Those left without health coverage continue experiencing difficulties that uninsured status causes at both the community and individual levels. Community resources are a deciding factor for individuals residing within the community. More initiatives must be undertaken at the community level to share these resources properly to the vulnerable individuals, especially those that experience multiple vulnerabilities.

This thesis posits that the issues in the community affecting the community resources additionally affects the population at risk, which in turn affects individuals’ use of healthcare services. This analysis serves as an extension of the stress theory where the stressors are related to that of the community health system. Community stressors affect the healthcare system and the population at risk independently, subsequently putting individuals at risk who are then further affected by the health care system. Several studies were used to shape the concepts of access to healthcare services and healthcare service utilization. Thus, this thesis seeks to assess the significance of the relationship between psychological vulnerability, as measured by mentally unhealthy days on healthcare access and use among the long term uninsured in South Carolina. Chi square analyses were
conducted to test the association between mentally unhealthy days and access to healthcare services and healthcare service utilization. Regression analyses were conducted to assess access and use as influenced by psychological vulnerability.

Overall, this study found that the interconnected effect of psychological vulnerability and uninsured status, produced an adverse relationship on access to care and healthcare service utilization. Findings indicate that there is a disconnect between the health care system and the people who experience multiple vulnerabilities. Focus on the relationship between psychological vulnerability, insurance status and their combined influence on healthcare services utilization is recent development in academic research. O’Neal et al. (2014) is the most prominent, discovering that psychological vulnerability as well as psychological competency influences the use of healthcare services, regardless of insurance status. This thesis adds to that work by affirming their findings on utilization of healthcare services and adds to the literature by showing a connection between psychological vulnerability and access to healthcare service. Ultimately, the implication is that community factors and mental distress are linked and can manifest themselves in preventive healthcare and other healthcare seeking behaviors.

Additional implications of these findings are that policymakers should consider the importance of healthcare resources on the uninsured and consider how they experience disadvantage in the healthcare system and are not empowered to seek timely and appropriate healthcare. This research adds nuance to understanding the experience of the uninsured and should be considered in further reform. Additionally, as this research concentrated on “hotspot” communities, it is worth considering when designing or
changing access to health care programs. This research implies that the vulnerable require
greater outreach from such programs to foster social support and empower them to get
needed healthcare.
## APPENDICES

### Appendix 1
Survey Questions Used in Analysis

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Questions included as indicators of this variable:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to Healthcare</td>
<td>“Is there a particular doctor’s office, clinic, minute clinic, health center, or other place that you usually go if you are sick or need advice about your health?” Recoded 0. No 1. Yes</td>
</tr>
<tr>
<td></td>
<td>“How do you usually get to where you typically go when you are sick or need health advice?” Recoded 1. Drive 2. Is driven 3. Taxi, Bus, Train, Public Transportation 4. Walks 5. Other</td>
</tr>
<tr>
<td></td>
<td>“How long does it usually take you to get to where you typically go when you are sick or need health advice?” 1. Less than 15 minutes 2. 15-30 minutes 3. 31-60 minutes 4. 61-90 minutes 5. 91-120 minutes 6. More than 120 minutes</td>
</tr>
<tr>
<td></td>
<td>“How difficult is it for you to get where you typically go when you are sick or need health advice?” 1. Very difficult 2. Somewhat difficult 3. Not too difficult; 4. Not at all difficult</td>
</tr>
<tr>
<td>Use of Healthcare</td>
<td>Questions included as indicators of this variable:</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>“Have you delayed getting needed medical care for reasons other than affordability and insurance?” Recoded 0. No 1. Yes</td>
</tr>
<tr>
<td></td>
<td>“Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?” Recoded 0. No 1. Yes</td>
</tr>
<tr>
<td></td>
<td>“Was there a time in the past 12 months when you needed to get a prescription but could not?” Recoded 0. No 1. Yes</td>
</tr>
<tr>
<td></td>
<td>“About how long has it been since you last visited a for a routine checkup? A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition.” Recoded 1. Within past year [anytime less than 12 months ago] 2. Within past 2 years [1 year but less than 2 years] 3. Within past 5 years [2 years but less than 5 years] 4. Never</td>
</tr>
<tr>
<td></td>
<td>“Other than routine checkup, have you sought prevention care in the past two years? Prevention care includes services like vaccination, testing, screening, assistance to quit smoking, etc.” Recoded 0. No 1. Yes</td>
</tr>
<tr>
<td></td>
<td>“What is your household’s total cost on healthcare last year [including buying drugs, paying medical bills, using alternative therapies to treat acute or chronic conditions]?”</td>
</tr>
<tr>
<td></td>
<td>“Have you been hospitalized in the last 12 months?” Recoded 0. No 1. Yes</td>
</tr>
<tr>
<td>Independent Variables</td>
<td>Demographic Variables</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>----------------------------------------</td>
</tr>
</tbody>
</table>
| “Have you visited the emergency room in the last 12 months?” | Gender 1. Male  
2. Female  
3. Other |
| Recoded 0. No 1. Yes                    | Marital Status Recoded into 2  
0. married  
1. unmarried |
| Frequently Mentally Distressed        | Age Age will be coded as a continuous variable, representing the actual age of the respondent at the time they took the survey. |
| “Thinking about how your emotional or mental health, which includes stress, depression and problems with emotions, for how many days during the past 30 days was you emotional or mental health not good?” [BRFSS] | Employment Recoded into 5  
0. unemployed and not seeking employment  
1. Other  
2. unemployed and currently seeking employment  
3. employed part time  
4. employed fulltime/ self employed |
| 14 or more days in a 30-day period feeling mentally distressed meets threshold for mental distress | Education Level 1. No formal education  
2. Did not finish primary school  
3. graduate from elementary school  
4. Graduate from middle school  
5. Graduate from high school  
6. Graduate from vocational school  
7. Graduate from 2/3 year college/ Associate degree  
8. Graduate from 4 year college/Bachelor degree  
9. Advanced Degrees |
|                                       | Race Recoded into dichotomous variable:  
0. White |
<table>
<thead>
<tr>
<th></th>
<th>1. Non-white</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>1. Yes</td>
</tr>
<tr>
<td></td>
<td>2. No</td>
</tr>
</tbody>
</table>


Department of Public Health Sciences. 2015. “The Long-Term Uninsured and ‘Hot Spots’ in South Carolina: Their Health Status and Access to Healthcare.” Clemson, SC: Clemson University


Jiang, Yongwen and Jana E. Hesser. 2009. “Using Item Response Theory to Analyze the Relationship Between Health-Related Quality of Life and Health Risk Factors.” *Preventing Chronic Disease, 6*(1):A30.


Pagán, Jose A. and Mark V. Pauly. 2006.” Community-Level Uninsurance And the Unmet Medical Needs of Insured and Uninsured Adults.” Health Services Research, 41(3p1):788-803.


South Carolina Department of Health and Human Services. 2012b. “South Carolina Medicaid and the Community Health Worker Program”. Retrieved October 12, 2017 from


