Biopsychosocial Factors of Resilience in the Medically Indigent Adult Population

Kaitlin E. Puckett

Abilene Christian University, kep10d@acu.edu

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ABSTRACT

The medically indigent adult population continues to struggle with the effects of not having insurance coverage, despite the efforts of the Affordable Care Act to provide more affordable healthcare coverage to the population. Based on the United States Census Bureau’s reported population in 2015, an estimated 45 million Americans are without insurance. This study aims to identify and explore the impacts of the biopsychosocial factors of resilience that enable the population to face adversity, stress, and manage distress in the face of trauma (Masten, Best, & Garmezy, 1990; Rutter, 2006; Zimmerman, 2015). Four hypotheses follow a review of literature and predict findings of data obtained from 26 participants in a purposive and quantitative study design comprised of surveys and questionnaires. Findings suggest that there is a statistically significant difference in resilience based on the employment level of a medically indigent person ($p = .013$). There does not appear to be any statistical difference in resilience based on receiving services from a social services representative, time without insurance, or strength of the support system ($p = \text{n.s.}$). However, there were tendencies that may be important to note when working with this population regarding the impact of time without insurance on resilience and the size of the support system.
Biopsychosocial Factors of Resilience in the Medically Indigent Adult Population

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To Dr. John Huber Sr. for inspiring my journey in higher education and to Mason Puckett for walking with me through the end of it so faithfully.
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CHAPTER I
INTRODUCTION

As the medically indigent adult population continues to struggle with coverage gaps created by the Affordable Care Act, it is essential to determine factors of resilience related to this population in order to develop best practices that foster resilience. The following will introduce the concepts and key terms related to the relationship between resilience and varying biopsychosocial factors present in this population. This will provide important information in beginning to explore resilience in medically indigent adults.

The Remaining Uninsured

In the past five years the Affordable Care Act (ACA) made attempts to revolutionize the healthcare system and provide more affordable healthcare coverage for all living in the United States. While it is agreed upon that the number of uninsured adults, ages 18-64, has decreased by eight million since the beginning of the ACA’s Marketplace open enrollment, as of June 2014, 13.9 percent of the non-elderly adult population in the U.S. remained uninsured (Shartzer, Kenney, Long, Hempstead, & Wissoker, 2014). Based on the United States Census Bureau’s online report on July 4, 2015, the total U.S. population is 321,216,397. While 13.9 percent of this population does not initially appear to be a significant portion of the population, it amounts to
approximately 44,649,079 people remaining uninsured. While this is certainly an improvement it does not sufficiently resolve the healthcare crisis in the United States.

The 2014 Health Reform Monitoring Survey reports that three out of five of the remaining uninsured are so as a result of high insurance premiums and costs, or other affordability issues (Urban Institute Health Policy Center, 2014). This creates a gap in services for individuals in need of costly medical assistance who also have financial limitations and no affordable insurance options. This population may also be referred to as the medically indigent.

**The Medically Indigent**

While it may be ideal that the medically indigent receive quality education and provision of information regarding available Marketplace insurance options, it is also imperative that medical care is available in the event that these options are not utilized or attainable. This has created the need for charitable clinics or reduced rate medical facilities offering quality medical care to the uninsured at a lower cost. Currently, primary care physicians in such clinics are expected to, at some level, be able to triage, screen, diagnose, and manage a wide variety of conditions and illnesses (Vasan et al., 2014). However, there is a key component of the human experience that is lacking within the current use of this model.

Within the medically indigent population, there are often needs present that transcend traditional medical facility capabilities. For example, two-thirds of uninsured adults in June of 2014 had family incomes at or below 138 percent of the federal poverty level (Shartzer et al., 2014). Based on this knowledge, it can be assumed that the medically indigent are often receiving services from a variety of different organizations
providing assistance to the low-income or uninsured populations. However, these organizations are likely to be difficult to navigate, and the needs of this population are likely to be complex. Additionally, many of these resources may be unknown to people within the medically indigent population. Through this lack of awareness of needs and resources, patients often do not receive holistic or integrated care and are left to fend for themselves in a system that is difficult to navigate.

Health centers and clinics have the unique capability to transform the delivery of holistic care as a result of their position at the crossroads of medical care and community assistance (Hawkins & Groves, 2011). As a result of this, there has been a recent shift in healthcare provision to the medically indigent that calls for an integrated health care model. While this currently exists in some form in the primary care model, this is not a complete integrated health care model.

Comprehensive integrated health care models serving the medically indigent should include the provision of a variety of medical and social services that address the holistic needs of the patient. However, in order to provide this type of service it is imperative to understand the needs of the medically indigent population. While it is beneficial to understand the needs of the population as they currently exist, it is also important to understand the factors that enable a person within this population to remain resilient.

Focus on the person-in-environment and the patient allows for factors related to resilience to be revealed. For example, the *British Journal of Social Work* suggests that social workers must work towards being actively engaged in the environments that have the potential to foster and support the biopsychosocial factors essential to enhancing and
maintaining resilience (Green & McDermott, 2010). As a result, the use of research regarding those factors has the potential to guide practice and provide evidence-based practice in medicine and social work, which integrates patient care with the best available research evidence (Jacobsen & Jim, 2008). Through the lens of holistic and integrated health care, understanding the factors related to resilience in medically indigent adults, ages 18-64, can provide opportunities for interdisciplinary medical and support staff members to provide proactive and supportive care measures in order to increase overall well-being in patients across the continuum of illness and treatment.

This study addressed the incorporation of social work within the integrated health care model by investigating the biopsychosocial factors related to resilience in the medically indigent adult population. This provides important knowledge and understanding regarding the biopsychosocial factors within this population that elicit resilience and further points out areas social work may address within an integrated healthcare model in order to facilitate and encourage resilience in this population.

**Definition of Terms**

*Resilience.* Resilience is a person’s ability or capacity to successfully adapt to acute stress, trauma, chronic forms of adversity, or threatening circumstances (Masten, Best & Garmezy, 1990; Rutter, 2006; Zimmerman, 2015). Resilience is further made up of three basic factors including the stressor itself, the individual person, and the society and the culture in which that person lives (Holland, 2003).

*Medically Indigent.* An individual is considered to be medically indigent based on eligibility requirements varying by state. Counties that are not fully served by a hospital district or a public hospital are responsible for administering an indigent health care
program for the indigent residents of all or any portion of the county not served by a hospital district or public hospital (Texas Department of State Health Services, 2015). In Taylor County, Texas, an individual is medically indigent provided that the individual does not have Medicare, Medicaid, or private insurance coverage and is at or below 21% of the federal poverty income level (211 Texas, 2015). Based on the nature of the sample population, this term will be expanded to include all self-identified low-income adults without Medicaid, Medicare, or private insurance.

Integrated Health Care. The newly introduced integrated health care model was created to reach and to provide services to the medically underserved. In contrast to traditional primary care facilities, this new model aims to combine resources available in local communities with federal funds provided to the health facility in order to establish community-based health care systems. Integrated health care models further aim to empower communities to provide holistic, or comprehensive, healthcare services at a local level that is both affordable and accessible (Hawkins & Groves, 2011; Vasan et al., 2014).

Biopsychosocial Factors. In relation to resilience, the factors through which resilience is determined include but are not limited to biological, psychological, and social factors an individual possesses. Resilience, or an individual’s response to trauma or stressors, largely depends on an “interconnected and synergistic mix of [these] factors, including the individual’s neurobiological and psychological profile, personal trauma history, and [additional] circumstances, such as availability of social support networks” (Haglund, Nestadt, Cooper, Southwick, & Charney, 2007).
Person-in-environment. The person-in-environment theory is a social work perspective that views the individual within the context of his or her environment, rather than as an independent part of society. Additionally, this theory identifies the interconnectedness between various factors that may impact an individual. These additional factors include but are not limited to the environment, economics, overall health, education, gender, and various societal stereotypes or role expectations. This framework is based on the understanding that “individuals are influenced by and influence their environments through their actions” (Kondrat, 2002). This provides the foundation for the necessity of information regarding the factors that are a part of an individual’s biopsychosocial person and environment related to resilience.

Primary Care. According to the American Academy of Family Physicians, primary care is care provided by generalist physicians who specialize in first contact care and continuing care. This includes but is not limited to “health promotion, disease prevention, health maintenance, counseling, patient education, diagnosis, and treatment of chronic illnesses” (American Academy of Family Physicians, 2015). However, this does not include emergent care, social services, or the treatment of more severe diseases or illnesses.

Affordable Care Act. The Affordable Care Act is a healthcare plan enacted by President Barack Obama in 2010, during his first term as President. This act aimed to change the fragmented American health care system through greater access to affordable quality health care, expansions in insurance coverage, and experimentation with new initiatives and plans to integrate and to improve care (Hawkins & Groves, 2011; Fitzpatrick, Butler, Pitsikoulis, Smith, & Walden, 2014; Timmermans, Orrico, & Smith,
The law aimed to make preventative care more accessible and affordable for many Americans. However, the Supreme Court ruled that states were able to choose if they would expand Medicaid coverage. This coverage would have allowed more individuals to obtain Medicaid and therefore leave fewer individuals in need of Marketplace insurance. However, several states, including Texas, chose not to expand Medicaid. This, in effect, left a larger amount of the population searching for affordable and effective insurance plans.

*Marketplace Open Enrollment.* Marketplace Open Enrollment is the title given to the period of time in which individuals may sign up for a public insurance plan provided through the Affordable Care Act Marketplace plan. For the 2016 year, this enrollment period “began November 1, 2015 and will continue through January 31, 2016. Health coverage can start as soon as January 1, 2016 for consumers who sign up by December 15, 2015. Consumers who have already received health coverage through the Marketplace [are also encouraged to] review their coverage options by December 15, 2015 as new, better and more affordable plans may be available for them in 2016” (Health Resources and Services Administration, 2015)
CHAPTER II
LITERATURE REVIEW

While it will quickly become clear that the biopsychosocial factors of resilience in the medically indigent adult population are important to consider, there is limited literature regarding resilience within this specific population. The following literature review outlines resilience, integrated health care models, and the medically indigent adult population. This research provides a foundation of research and current information will be provided for research related to these factors and variables.

Biopsychosocial Factors of Resilience in Medically Indigent Adults

While holistic care has existed across populations for quite some time, within the last 5 to 10 years there has been a shift to focus on this concept as it applies to medical care. As a result of this shift, integrated health care has been brought to attention as a desirable model for health care delivery. This model may include the integration of care provided by primary care physicians, physical therapists, lab technicians, specialists, social workers, etc.

While this model is potentially beneficial for all patients receiving integrated care, it is perhaps most beneficial in providing care to those whom do not have private insurance or government-funded insurance. Integrated care within this population, otherwise known as the medically indigent population, may even be an essential component to the delivery of quality and comprehensive health care.
In order to provide quality social services within this model, it is imperative to understand the biopsychosocial factors related to the resilience of a medically indigent patient. This is a basic assumption of this literature review. Biopsychosocial factors include biological, psychological, and social components of resilience.

**Methodology of Literature Review**

Articles were obtained through a comprehensive search of literature published within the last 10 years. These searches were done through EBSCOHost, Academic Search Complete via the Abilene Christian University Library database, and published dissertations and theses on ProQuest. This provided a collection of literature that was peer-reviewed and included the most recent literature regarding the topic. Inclusion criteria included a publication date during or after the year 2005, peer-reviewed, and relevance to the topic. Literature published prior to this date was included on a limited basis if pertinent information was provided and methods were appropriate. Based on the nature of the population being researched, smaller sample sizes were considered and allowed for inclusion provided methods appeared appropriate.

Keywords used during the search included but were not limited to resilience, medically indigent, adults, integrated health care, social work in medical clinics, biopsychosocial, and Affordable Care Act. These criteria and keywords provided a holistic view of medically indigent adults and resilience. However, there appear to be various gaps in the literature regarding the relationship between the two, which are outlined later in this review of literature.
Outline of the Affordable Care Act

The Affordable Care Act of 2010 aimed to change the fragmented American health care system through greater access to affordable quality health care, expansions in insurance coverage, and experimentation with new initiatives and plans to integrate and improve care (Hawkins & Groves, 2011; Fitzpatrick et al., 2014; Timmermans et al., 2014). This provided an opportunity to change the healthcare system in America in drastic ways. It has been suggested that “providing insurance to a previously uninsured population is expected to benefit individual and population health, but [also that] the impact will likely go beyond health access proper” (Timmermans et al., 2014, p. 360). However, the impact the new legislation would have on Americans was unclear.

According to the Health Reform Monitoring Survey conducted through the Urban Institute Health Policy Center, the number of uninsured adults “fell by an estimated 8 million [people] between September 2013 and June 2014, with proportionately larger coverage gains among low and middle income adults” (Shartzer et al., 2014, p. 1). However, this survey also indicated an estimated 13.9% of adults remain without insurance coverage. This reveals flaws within the Affordable Care Act, as there is evidence of a large number of adults without coverage, even with the availability of Marketplace Open Enrollment and the Affordable Care Act plans. Reports for this survey also note that “two-thirds of uninsured adults in June 2014 had family incomes at or below 138 percent of the federal poverty level” and that “most [of the remaining] uninsured said they were uninsured for financial reasons” (Shartzer et al., 2014). This indicates that many of the remaining 13.9% may be considered medically indigent.
It is clear that there are existing needs regarding medical services provision for the remaining uninsured and medically indigent. While the number of people in need of these types of services has dramatically decreased, there still remains a large enough portion of the adult population that is uninsured to warrant further action and research regarding the remaining medically indigent population.

**Effects of the Affordable Care Act on the Medically Indigent**

In a 2009 study conducted by Todd Gilmer and Richard Kronick of the University of California, it was estimated that 19.2 percent of Americans would remain uninsured as of 2010. This study predicted an increase in the uninsured through the utilization of a logistic regression model that considered the probability of coverage based on per capita health spending, personal income, employment characteristics, and demographic and socioeconomic characteristics of the population. Their findings stated that an estimated 52 million non-elderly Americans would lack coverage by 2010 if there were not a policy change (Gilmer & Kronick, 2009).

However, as mentioned above, there was a policy change that occurred through the Affordable Care Act. This change decreased the number previously predicted by Gilmer and Kronick, but not as dramatically as it was intended to be. While the medically indigent population has decreased since the implementation of the Affordable Care Act, there are still 13.9% of those living in the United States remaining without healthcare coverage or insurance plans (Shartzer et al., 2014). This decrease is a positive sign for the state of health care delivery in the United States, but many of the remaining uninsured are also from low-income situations. For example, an approximate 63.5% of the remaining uninsured, as of 2014, reported a total family income at or below 138 percent of the
federal poverty level (Shartzer et al., 2014). This severely limits the availability of accessible health care to this population bracket and creates a large gap in service provision.

Health care is a service that is commonplace in the American system of living. However, it is not a service that all have access to, as mentioned above. The remaining medically indigent population has fallen victim to the consequences of the gaps in public insurance programs and healthcare provision, (Freeman, Aiken, Blendon, & Corey, 1990; Iglehart, J., 2005; Pizer, Frakt, & Lezzi, 2009; Timmerman et al., 2014). The spillover that occurs from these gaps influences the population in tangible and harmful ways. For example, many of the medically indigent are a part of other vulnerable populations. As reported by Pizer, Frakt, and Lezzi in 2009 gaps in public insurance programs are often aimed at or deeply affect the medically indigent with chronic health problems or disabilities. Without access to quality medical care, members of these vulnerable populations may experience deleterious effects on their health. Along with harmful health effects, many other sectors of a person’s life may be negatively impacted by gaps in health care services.

While it has been established that the medically indigent population has far less access to affordable quality healthcare, they also appear to have higher out-of-pocket medical expenses, are more likely to present at emergency rooms, have greater absenteeism in schools, may be less likely to maintain employment, and are less likely to engage in communities (Timmerman et al., 2014; Freeman et al., 1990). Specifically in states that chose not to expand their Medicaid coverage, low-income patients who do not have access to affordable insurance premiums have limited access to care. Because of this
limited access, these patients will often neglect their health and experience complications from untreated medical conditions, which are often chronic conditions. When these complications occur, they often occur as a crisis in which the patient must receive expensive medical care at an emergency facility. This cycle continues without affordable insurance policies and costs patients and emergency facilities more in unpaid medical costs.

As a result, it appears that the unavailability of healthcare as a result of a lack of insurance coverage among the low-income population may be detrimental to many other areas of a person’s overall wellbeing. This often presents further problems in obtaining insurance coverage and affordable quality healthcare and may hinder progress and resilience. Therefore, it is important to understand which of these sectors may be impacted in order to better support and treat factors related to the medically indigent population that may correlate with healthcare.

**Integrated Health Care Model**

The importance of an understanding of holistic care is reflected in new trends and practices involving integrated health care models. These models include caring for a patient from more than one perspective. In a sense, this model views the patient as a whole person with a variety of needs. This may seem to make sense from a social work perspective but greatly differs from the traditional medical model, specifically in primary care.

While there have been many attempts to achieve comprehensive health care delivery, these attempts have often failed to reach vulnerable populations such as the medically indigent. These failures may be attributed to the ineffective and inappropriate
development and implementation of primary care models (Vasan et al., 2014) As a result of these deficiencies in primary care, there is evidence of a trickle-down effect that negatively impacts medical areas in which access to care makes a difference, such as chronic conditions and emergency care (Timmermans et al., 2014). Within the parameters of a new push for more effective and efficient healthcare delivery in these areas, “both practitioners and administrators are being forced to approach their jobs differently” (Fitzpatrick et al., 2014, p. 92).

It is often the uninsured, low-income, or medically indigent populations that fall within the gaps in services outlined above. As a result, there is a tension found between delivering front-line primary care services that optimize both coverage and equity without compromising quality of care (Vasan et al., 2014, p. 3). However, literature suggests that an integrated health care model can greatly improve the quality of holistic primary care delivery and provide a more beneficial and comprehensive health care system, especially for vulnerable populations (Vasan et al., 2014; Walley et al., 2008). This concept would involve a shift in primary care provision to an integration of both clinical and service provision supporting the whole person.

The most common example of the integrated health care model can be found in emerging community health centers. Those falling within the gaps in primary health care delivery rely on some non-traditional type of facility in order to obtain health care services.

Often, this non-traditional facility is an emergency room. Visiting an emergency room in order to receive care that should otherwise be provided by a primary care facility is costly and not feasible. Therefore, it is imperative that an alternative be established that
has the capability to provide these services to the medically indigent population. Perhaps community health centers (CHCs) have the potential to provide the integrated health care needed in the health care climate today.

Community health centers are freestanding clinics that serve as safety net providers, combining the resources of local communities in order to provide quality primary and preventative health services (Hawkins & Groves, 2011; Rhyne, Livsey, & Becker, 2015; Smith-Campbell, 2005). In 2005, the *Journal of Nursing Scholarship* began to explore the effectiveness of CHCs within the uninsured and/or low-income population. This study revealed that within 3 years of the implementation of a CHC, emergency room visits by uninsured patients declined by almost 40% and remained 25% lower over 10 years. Additionally, this study revealed that hospitals and uninsured patients saved approximately $14 million as a result of the decrease (Smith-Campbell, 2005). While this provides evidence of a benefit of CHCs for emergency departments and hospitals, it also highlights a large margin of benefit for medically indigent patients.

**Factors Related to Resilience in Adults**

While healthcare is an important component to holistic care, this care must also include the consideration of a multitude of other biopsychosocial factors. Specific to the purposes of this study, factors related to the resilience of a patient are essential in determining appropriate paths for holistic or comprehensive care.

While there are differing definitions of resilience, there are common variables within the concept that lend to a broad understanding of resilience. Common themes that arise in discussions of resilience include the differentiation between physical resilience and psychological resilience, the ability to adapt to trauma or stressors, and the ability to
cope with and face adversity (Haglund, Nestadt, Cooper, Southwick, & Charney, 2007; Seccombe, 2002; Wagnild, 2013; Zimmerman, 2015).

Somewhat differing from physical resilience, the resilience assumed for the remainder of this study relates to the response that emerges in the face of extreme stress or trauma. High resilience would be marked by the ability to bounce back from trauma or stress quickly, and low resilience would be marked by posttraumatic psychopathology or the inability to bounce back quickly (Haglund et al., 2007).

There are three basic variables that contribute to the psychosocial resilience and adaptation of an adult patient: the disease/condition itself, the individual person, and the society and the culture the person lives in (Holland, 2003). While these three basic factors exist in literature, much of the existing research in healthcare is disease/condition focused and highlights physical resilience. However, there may be a plausible correlation between physical resilience and the psychological and social support provided to patients that is associated with biopsychosocial resilience and adaptation, as well as the management of distress (Antoni, 2013; Jacobsen & Jim, 2008).

For example, past and current cancer research is largely focused on the disease itself. However, there is little being done to address external factors that may influence overall resilience. Although a considerable number of cancer patients suffer from emotional distress and related issues, it remains poorly understood which psychosocial factors contribute to individual vulnerabilities (Min, et al., 2013). Similarly, these factors are largely under-researched within the medically indigent population. However, with the understanding that people are impacted by a variety of systems and factors within their environment, there is a call for research to adopt a holistic view of care. This focus on the
person-in-environment and the patient allows for such factors related to resilience to be revealed. As a result, the use of research regarding those factors has the potential to guide practice and provide evidence-based practice in healthcare and social work, which integrates patient care with the best available research evidence (Jacobsen & Jim, 2008).

Perhaps the best and richest understanding of resilience and the biopsychosocial factors related to resilience comes from the Resilience Scale. In order to measure resilience and to determine factors of resilience in differing populations, the Resilience Scale was created in 1987 (Wagnild, 2013). This scale was created out of a need to determine how to better support those who appeared not to appropriately handle stress, trauma, or adversity in their lives. Through a series of qualitative interviews in which the scale was utilized, it became clear that “some people were dealing with adversity and living life to the fullest despite loss, while others were giving up in despair” (Wagnild, 2013, p. 152).

The scale established and highlighted five characteristics of resilience that accompany the three basic factors of resilience noted previously. These five characteristics include: purpose, equanimity, self-reliance, perseverance, and existential aloneness (Wagnild, 2011). Combined, these eight factors serve as markers of resilience and enable this scale to provide an important tool in determining levels of resilience in various populations.

Gail Wagnild, the creator of the Resilience Scale User Guide, in a 2013 article on the development and use of the tool, stated the following:

Much of ‘health’ related research used models grounded in pathology, which emphasized identifying and diagnosing problems and developing approaches to
cure or treat problems. In the last 20 years, a more positive approach to health has been taken, with a greater emphasis on recognizing capabilities and building on a foundation of strength. (p. 151)

This provides the basis for the use of the scale in healthcare research and identifies important benefits from the use of this tool.

**Resilience in the Medically Indigent Population**

While there is a strong foundation of research and literature available regarding resilience in the adult population, there appears to be little research available that explores resilience in the medically indigent adult population. However, based on new interests in community health centers and integrated health care models in order to reach the uninsured and medically indigent population not reached by the Affordable Care Act, it is imperative that there is a greater understanding of what factors of resilience impact this population. As the Affordable Care Act “provides new resources that will allow health centers to serve up to an additional 20 million people” (Hawkin & Groves, 2011) and as health centers move towards integrated models that provide a variety of other resources, resilience will need to be researched in this population in order to determine best practices for the provision of each of these services, including but not limited to health care and social services.

This study identifies the biopsychosocial factors of resilience that are present within this population and examines relationships between these factors and resilience that can better inform social work and comprehensive medical practices in light of the parameters and consequences of the Affordable Care Act.
Hypotheses

Based on the literature review above and the data being collected for the completion of this study, four hypotheses are proposed. The hypotheses of this study are as follows:

- If an individual identifies that he or she is receiving assistance from any type of social worker, case manager, patient care advocate, or social services provider, then his or her resilience will be higher. The null hypothesis is that there will be no change in resilience based on this factor.

- The longer amount of time an individual reports having been without insurance (in years), then the lower the resilience of the individual. The null hypothesis is that there is no change in resilience based on this factor.

- The higher the level of employment an individual reports (disabled, retired, unemployed, homemaker, part-time, full-time), then the higher the resilience of the individual. The null hypothesis is that there is no change in resilience based on this factor. For the purposes of statistical analysis, unemployed and disabled (involuntarily unemployed) will be the lower bracket, homemaker and retired will be the middle bracket (voluntarily unemployed), and part-time and full-time will be the higher bracket (employed).

- The stronger an individual identifies his or her support system, then the higher the resilience of the individual. The null hypothesis is that there is no change in resilience based on this factor.

This study tests these four questions, and identifies and explores other relationships between the biopsychosocial factors impacting this population and the correlating resilience levels.
CHAPTER III

METHODOLOGY

While resilience appears to be well researched in the current literature, there appears to be a lack of research regarding the impacts of resilience levels in varying population groups. For example, there is little known about the factors related to resilience and the impacts of those factors within the medically indigent adult population, as highlighted in the literature review above. This chapter discusses the methods, sample, and data analysis utilized to determine varying biopsychosocial factors of resilience within this population.

This study addresses the question: what are the biopsychosocial factors related to resilience in the medically indigent adult population and how does that impact social work and comprehensive medical practice? This will generate knowledge and will ideally provide important information necessary for creating effective interventions that support and foster resilience within such practice contexts.

The study utilizes a quantitative study design that obtained data through surveys and questionnaires.

**Sampling Frame and Sample**

Participants for the proposed study were drawn from a purposive sampling of patients in the daily appointment census of the Presbyterian Medical Care Mission (PMCM) on a variety of days chosen to conduct interviews. The PMCM is a non-profit organization that serves approximately 9,000 adult patients ages 18-64 in the Taylor
County, TX area that do not have Medicare, Medicaid, or private insurance coverage. The PMCM provides low-cost primary care for patients that meet the above criteria, and that are also low-income, that they would likely not be able to receive elsewhere. Based on this, many of their patients are considered to be medically indigent and have little to no other access to quality primary care.

This purposive sampling was based on the intentional utilization of patients considered to be medically indigent through the population available at the PMCM clinic. Consent was required prior to participation, and potential participants were provided with a copy of their signed consent form, should they agree to participate.

Requirements for patients to participate included the following: the potential participant had to (1) be within the ages of 18 to 64, (2) be a patient at the Presbyterian Medical Care Mission, (3) not have Medicare, Medicaid, or other forms of insurance, (4) speak English well enough to respond to questions without assistance, (5) have the capacity to complete a 15-20 minute survey and questionnaire, and (6) be willing to participate in a 15-20 minute interview in order to complete the survey and questionnaire.

The above criteria were utilized to ensure each participant met the necessary characteristics of a medically indigent adult and met requirements necessary for receiving treatment at the Presbyterian Medical Care Mission. While participants were derived from PMCM, further ensuring eligibility provided a safeguard for effective data collection. Criteria regarding medical indigence enabled data to reveal a more comprehensive picture of the relationship between resilience and factors related to or specific to the medically indigent population. These also enabled a more specific
connection between resilience and medical indigence within the context of this study to be made.

In order to provide a more representative sample of the population of interest previously identified, there was no specific method to choosing participants. Because a true random sample was not possible, based on the nature of the agency participants were chosen from, the lack of a specific method aided in obtaining a reasonably representative sample of the population.

**Data Collection**

Once participants were selected from the sampling frame available, participants were provided with an informed consent document, which also contained consent to obtain patient health information (PHI). Participants were then asked to participate in an interview with the primary investigator in order to complete a scale measuring resilience and questionnaires identifying demographic information and a variety of other variables. These interviews appeared to be qualitative interviews, as the primary investigator asked the questions and administered the survey to each participant. However, all responses were self-identified by the participant and then coded into quantitative data points in order to conduct statistical analysis. This enabled the primary investigator to ensure a continuity of care through referrals, if necessary.

Additionally, this provided the primary investigator with the opportunity to answer questions and to ensure that the participant understood the questions being asked. This provided an important aspect to ensuring validity. Creators of the scale note that “in conventional assessments, clients rarely have the opportunity to talk about their own goals or focus on their strengths and positive aspects of their lives” and that “assessing
resilience is done so that individual resilience can be strengthened” (Wagnild, 2013, p. 157). For these reasons, in addition to those already noted, this survey and assessment of resilience was conducted in this way.

**Human Subjects Protection**

To ensure that human subjects utilized in the completion of this research were protected from risks and were adequately informed of potential harm, potential benefits, and rights to confidentiality and HIPAA protection, the Institutional Review board from Abilene Christian University approved this research project (Appendix A). Additionally, each participant was asked to read and sign an informed consent document, also approved by the Institutional Review Board, which included a thorough outline of each of the previously mentioned items. HIPAA consent was obtained through this consent document.

Once consent was obtained from participants agreeing to complete the study, further documents related to the study were kept separate from informed consent documents and did not include identifying information.

Data collected was kept in a locked cabinet at the agency and all information kept on a computer was password protected. All data remained confidential and de-identified before analysis in order to ensure human subject protection.

Appendix B contains the full consent form, with HIPAA consent, provided to and completed by all study participants.

**Measurement**

As mentioned above, measurements were taken via a scale and two questionnaires administered by the primary investigator in in-person interviews. Measurements were
derived primarily from the Resilience Scale, the demographics questionnaire published in conjunction with the same scale, and another questionnaire comprised of questions designed by the primary investigator in order to identify biopsychosocial factors related to the participant. These scales are normed to the ages included in this study and evidence validity and reliability through thorough testing and re-testing of the scales and assessments in a variety of ages and populations.

Gail Wagnild, a contributor to the creation of the scale, states the scale “was created in 1987 and initial psychometric analysis was conducted in two early studies in 1989 and 1990. Since then, it has been used worldwide and translated into at least 36 languages. The [scale] has been used with a variety of populations, including youth, young and middle aged adults, and elders” (Wagnild, 2013, p. 151). She further states that the “alpha coefficient has been consistently acceptable and moderately high (.73-.95)” (Wagnild, 2013, p. 155). However, while Wagnild states there are validity and reliability measures for the scale, there was no numerical evidence for this in the resources utilized for this study.

Example questions for the Resilience Scale are “I usually manage one way or another,” “I am friends with myself,” “I feel that I can handle many things at a time,” “I keep interested in things,” and “My life has meaning” (Wagnild & Young, 2009). Participants answered these questions by indicating a number 1-7, marking how much they agreed with the statement.

Example demographic questions were gender, marital status, education level, living situation, residence, employment status, age, income, and ethnic background.
These provided necessary demographic variables to determine pertinent social factors related to resilience.

Additional questions included: Are you receiving assistance from any type of social worker, case manager, patient care advocate, or social services provider? How many people would you identify as being in your immediate support system? How long have you been without insurance? On a scale of 1-7, how strong would you say your immediate support system is? These questions provided additional information necessary to identify social and agency-specific factors that might be related to resilience within this population.

Appendix C includes the full interview guide.

Upon selection of participants, the Resilience Scale, the demographic questions, and the additional biopsychosocial questions were administered. The Resilience Scale provided information regarding the level of resilience each participant has, based on a scoring system established by the scale. The combination of demographic questions and additional biopsychosocial questions provided necessary information regarding biopsychosocial factors of the participant. The grouping of this data was used to determine the biopsychosocial factors related to levels of resilience in the medically indigent adult population.

**Data Analysis**

Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) software program. Data derived from the scales mentioned above were quantitative in nature and required statistical analysis in order to determine significance.
This statistical analysis provided insight as to the relationships that may be present between the recorded biopsychosocial factors with varying levels of resilience.

A variety of statistical tests, including but not limited to, t-Tests, one-way ANOVA tests, frequency distributions, and descriptive statistics, were utilized through SPSS in order to investigate and identify any relationships, positive or negative, which may be present within the findings. These analyses provided important insight into the relationship between biopsychosocial factors of the medically indigent adult population and resilience.
CHAPTER IV

RESULTS

Based on the information provided the data, there are many biopsychosocial factors related to the medically indigent population that must be identified and explored in order to establish relationships between these factors and resilience within the population. This chapter outlines a description of the sample included in the study, followed by the findings related to the previously identified hypotheses.

Description of Sample

The sample included 26 patients of the PMCM. While parameters for inclusion in the study were ages 18-64, sample participants ranged in age from 25 to 63 years old, with a mean age of 49.65 (Table 1). As the mean age is around the same area as the median age, which is 48.5, there appears to be an age distribution similar to that of the normal curve model of distribution. This range provides a greater amount of inclusion in regards to age and may be more representative of the target population.

Table 1

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>1</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>30-39</td>
<td>2</td>
<td>7.7</td>
<td>11.5</td>
</tr>
<tr>
<td>40-49</td>
<td>11</td>
<td>42.3</td>
<td>53.8</td>
</tr>
<tr>
<td>50-59</td>
<td>4</td>
<td>15.4</td>
<td>69.2</td>
</tr>
<tr>
<td>60 and older</td>
<td>8</td>
<td>30.8</td>
<td>100</td>
</tr>
</tbody>
</table>

Mean 49.6  Median 48.5  Minimum 25  Maximum 63
Within the sample there is a greater percentage of females included in the study than males. Of the 26 participants, 17 (65.4%) were female and nine (34.6%) were male (Table 2). In addition to a slightly larger percentage of females than males, there also appears to be a skewed distribution of ethnic background among the study participants (Table 2). Of those included in the study, 21 (80.8%) were European American, or White, three (11.5%) were Hispanic American, one (3.8%) was African American, and one (3.8%) was American Indian. (Table 2) Out of the sample 11 (42.3%) were divorced, 10 (38.5%) were married, four (15.4%) were single, and one (3.8%) was widowed (Table 2).

Table 2

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>17</td>
<td>65.4</td>
<td>65.4</td>
</tr>
<tr>
<td>Male</td>
<td>9</td>
<td>34.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Ethnic Background</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>1</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>American Indian</td>
<td>1</td>
<td>3.8</td>
<td>7.7</td>
</tr>
<tr>
<td>European American</td>
<td>21</td>
<td>80.8</td>
<td>88.5</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>3</td>
<td>11.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>11</td>
<td>42.3</td>
<td>42.3</td>
</tr>
<tr>
<td>Married</td>
<td>10</td>
<td>38.5</td>
<td>80.8</td>
</tr>
<tr>
<td>Single</td>
<td>4</td>
<td>15.4</td>
<td>96.2</td>
</tr>
<tr>
<td>Widowed</td>
<td>1</td>
<td>3.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In regards to factors related to employment and living situation, there was one (3.8%) disabled, four (15.4%) unemployed, one (3.8%) homemaker, one (3.8%) retired, seven (26.9%) working part-time, and 12 (46.2%) working full-time (Table 3). In relation to gross net income, one (3.8%) made between $36,000 and $50,000 annually, 6 (23.1%)
made between $21,000 and $35,000, six (23.1%) made between $13,000 and $20,000, and 13 (50%) made less than $12,000 annually. (Table 3) When asked about education level, two (7.7%) reported having completed less than 8th grade, four (15.4%) completed less than 12th grade, 6 (23.1%) graduated from high school, four (15.4%) completed technical school or vocational training, seven (26.9%) completed some college, two (7.7%) had a bachelor’s degree, and one (3.8%) had a graduate degree (Table 3).

Table 3

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involuntarily Disabled</td>
<td>1</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Unemployed</td>
<td>4</td>
<td>15.4</td>
<td>19.2</td>
</tr>
<tr>
<td>Voluntarily Homemaker</td>
<td>1</td>
<td>3.8</td>
<td>23.0</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1</td>
<td>3.8</td>
<td>26.8</td>
</tr>
<tr>
<td>Part-Time</td>
<td>7</td>
<td>26.9</td>
<td>53.7</td>
</tr>
<tr>
<td>Employed</td>
<td>12</td>
<td>46.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$36,000-$50,000</td>
<td>1</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>$21,000-$35,000</td>
<td>6</td>
<td>23.1</td>
<td>26.9</td>
</tr>
<tr>
<td>$13,000-$20,000</td>
<td>6</td>
<td>23.1</td>
<td>50.0</td>
</tr>
<tr>
<td>Less than $12,000</td>
<td>13</td>
<td>50.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 8th grade</td>
<td>2</td>
<td>7.7</td>
<td>7.7</td>
</tr>
<tr>
<td>Less than 12th grade</td>
<td>4</td>
<td>15.4</td>
<td>23.1</td>
</tr>
<tr>
<td>High School</td>
<td>6</td>
<td>23.1</td>
<td>46.2</td>
</tr>
<tr>
<td>Technical/Vocational Training</td>
<td>4</td>
<td>15.4</td>
<td>61.6</td>
</tr>
<tr>
<td>Some College</td>
<td>7</td>
<td>26.9</td>
<td>88.5</td>
</tr>
<tr>
<td>Bachelor’s</td>
<td>2</td>
<td>7.7</td>
<td>96.2</td>
</tr>
<tr>
<td>Graduate Degree</td>
<td>1</td>
<td>3.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Of the 26 participants, five (19.2%) reported they live alone, one (3.8%) is homeless, one (3.8%) lives in a homeless shelter, six (23.1%) live with their children, three (11.5%) live with relatives, eight (30.8%) live with a spouse, and two (7.7%) live with their spouse and children (Table 4). In addition, when asked what type of residence
they live in, 19 (73.1%) of participants reported living in a house, five (19.2%) reported living in an apartment, condominium, or townhome. Another two (7.7%) participants reported living in some “other” type of dwelling. From data regarding living situation, it can be determined that these two “other” residences types are a homeless shelter and homeless, as reported earlier (Table 4).

Table 4

<table>
<thead>
<tr>
<th>Frequency Distribution of Living Situation and Residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variable</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>Living Situation</td>
</tr>
<tr>
<td>Alone</td>
</tr>
<tr>
<td>Homeless</td>
</tr>
<tr>
<td>Homeless Shelter</td>
</tr>
<tr>
<td>With Children</td>
</tr>
<tr>
<td>With Relatives</td>
</tr>
<tr>
<td>With Spouse</td>
</tr>
<tr>
<td>With Spouse and Children</td>
</tr>
<tr>
<td>Residence</td>
</tr>
<tr>
<td>House</td>
</tr>
<tr>
<td>Apartment/Condo/Townhome</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

Hypotheses

Hypothesis 1

The first hypothesis states that if a person is receiving services from any type of social worker, case manager, patient care advocate, or social services provider, then his or her resilience will be higher. In order to test hypothesis one, a t-test of independent samples was utilized in order to determine if the difference between the means of the two groups were statistically significant. This t-test compared the mean resilience score of the population with their response to the question, “Are you receiving assistance from any type of social worker, case manager, patient care advocate, or social services provider?”
Participants were able to answer “yes” or “no” in response to the above question.

Participants were also given a resilience score based on their answers documented on the resilience scale as part of the survey. The resilience score was considered the dependent variable, and their response to the question above was considered the independent variable. The Resilience Scale identifies a score of 91 or higher as a high resilience score and a low resilience score is 73 or lower, which 74-90 being about average.

Out of the 26 study participants, five reported that they were receiving assistance from some type of social worker, case manager, patient care advocate, or social services provider. The remaining 21 participants reported that they were not receiving services from such professionals (Table 5).

<table>
<thead>
<tr>
<th>Q3</th>
<th>N</th>
<th>Mean Resilience Score</th>
<th>Standard Deviation</th>
<th>t-Score</th>
<th>Degrees of Freedom</th>
<th>Significance (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5</td>
<td>79.00</td>
<td>14.56</td>
<td>-.042</td>
<td>24</td>
<td>.967</td>
</tr>
<tr>
<td>No</td>
<td>21</td>
<td>79.29</td>
<td>13.38</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The mean resilience score for those that were receiving assistance from any type of social worker, case manager, patient care advocate, or social services provider is 79.0 (Table 5). The mean resilience for those that were not receiving assistance from such professionals is 79.29 (Table 5). The t-test for independent samples revealed that there is no statistical difference between the resilience score of those who are not receiving additional assistance from any type of social worker, case manager, patient care advocate, or social services provider and those that are ($t = -.042; df = 24; p = \text{n.s.}$). Therefore,
hypothesis one was not supported by the data included in this study. The null hypothesis, that there is no difference in resilience score based on services being received from a social service professional, appears to be supported.

**Hypothesis 2**

The second hypothesis stated that the longer amount of time an individual reports having been without insurance, then the lower the resilience of the individual. In order to test hypothesis two, a one-way analysis of variance, or ANOVA, test was conducted in order to determine significant differences between the mean resilience scores of three groups. The independent variable was the length of time a participant reporting having been without insurance, and the dependent variable was resilience. As mentioned above, resilience scores were determined based on their responses to the resilience scale as a part of the survey. For the purposes of analysis, time without insurance was categorized into three groups. The first group includes those that reported having been without insurance for one year or less. The second group includes those that reported having been without insurance for 1.01 to 5 years, and the third group includes those that reported having been without insurance for 5.01 or more years (Table 6).

The mean resilience score for those that reported less than 1 year without insurance is 87.33; the mean resilience score for those that reported between 1.01 and 5 years is 75.13; and, the mean resilience score for those that reported 5.01 years and above is 79.80 (Table 6). The differences between means for those that report varying times of being without insurance are not statistically significant ($f = .947; df = 2.23; p = .403$). Hypothesis two is not supported by the data.
### Table 6

**ANOVA Output for Resilience and Q2 (How long have you been without insurance?)**

<table>
<thead>
<tr>
<th>Q2 Group</th>
<th>N</th>
<th>Mean Resilience Score</th>
<th>Std. Deviation</th>
<th>95% Confidence Interval Lower Bound</th>
<th>95% Confidence Interval Upper Bound</th>
<th>Std. Error</th>
<th>Min</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>3</td>
<td>87.33</td>
<td>8.02</td>
<td>67.41</td>
<td>107.26</td>
<td>4.63</td>
<td>79</td>
<td>.947</td>
<td>.403</td>
</tr>
<tr>
<td>2.00</td>
<td>8</td>
<td>75.13</td>
<td>17.67</td>
<td>60.35</td>
<td>89.90</td>
<td>6.25</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.00</td>
<td>15</td>
<td>79.80</td>
<td>11.26</td>
<td>73.56</td>
<td>84.61</td>
<td>2.91</td>
<td>62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: 1.00=1 year or less, 2.00=1.01-5 years, 3.00= more than 5 years.*

However, a tendency among the mean resilience scores appears that reveals that resilience among those having been without insurance for one year is higher, then resilience drops between years one and five, and then resilience begins to increase again after year five.

In order to further identify the presence of this tendency, data were regrouped two additional ways and an ANOVA was done with each regrouping. In the first regrouping, group one consisted of participants that reported having been without insurance for two years or less, compared with those having been without insurance for 2.01 to 10 years, and those having been without insurance for 10.01 or more years. In the second regrouping, group 1 consisted of participants that reported being without insurance for one year or less, compared with those without insurance for 1.01 to 10 years, and those without insurance for 10.01 years or higher.

While neither regrouping found statistical significance, the same trend appeared as it did in the first ANOVA test cited. In the first regrouping those without insurance for less than two years had a mean resilience score of 79.0, those without insurance for two to ten years had a mean resilience score of 77.27, and those without insurance for more
than ten years had a mean resilience score of 81.50 (Table 7). The data did not reveal a statistical significance based on this regrouping ($f = .249; df = 2, 23; p = .781$).

Table 7

ANOVA Output for Resilience and Q2 (How long have you been without insurance?)

<table>
<thead>
<tr>
<th>Q2 Re-Group</th>
<th>N</th>
<th>Mean Resilience Score</th>
<th>Std. Deviation</th>
<th>95% Confidence Interval Lower Bound</th>
<th>95% Confidence Interval Upper Bound</th>
<th>Std. Error</th>
<th>Min</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>5</td>
<td>79.00</td>
<td>21.51</td>
<td>52.30</td>
<td>105.70</td>
<td>9.62</td>
<td>42</td>
<td>.249</td>
<td>.781</td>
</tr>
<tr>
<td>2.00</td>
<td>11</td>
<td>77.27</td>
<td>77.27</td>
<td>69.00</td>
<td>85.54</td>
<td>3.71</td>
<td>61</td>
<td>.20</td>
<td>.319</td>
</tr>
<tr>
<td>3.00</td>
<td>10</td>
<td>81.50</td>
<td>81.50</td>
<td>74.09</td>
<td>88.91</td>
<td>3.28</td>
<td>67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: 1.00 = 2 years or less, 2.00 = 2.01-10 years, 3.00 = 10.01 or more years

In the second regrouping those without insurance for one year or less had a mean resilience score 87.33, those without insurance for two to ten years had a mean score of 75.62, and those without insurance for more than ten years had a mean score of 81.50 (Table 8). The data did not reveal statistical significance based on this regrouping ($f = 1.20; df = 2,23; p = .319$).

Table 8

ANOVA Output for Resilience and Q2 (How long have you been without insurance?)

<table>
<thead>
<tr>
<th>Q2 Re-Group</th>
<th>N</th>
<th>Mean Resilience Score</th>
<th>Std. Deviation</th>
<th>95% Confidence Interval Lower Bound</th>
<th>95% Confidence Interval Upper Bound</th>
<th>Std. Error</th>
<th>Min</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>3</td>
<td>87.33</td>
<td>8.02</td>
<td>67.41</td>
<td>107.26</td>
<td>4.63</td>
<td>79</td>
<td>1.20</td>
<td>.319</td>
</tr>
<tr>
<td>2.00</td>
<td>13</td>
<td>75.62</td>
<td>15.58</td>
<td>66.20</td>
<td>85.03</td>
<td>4.32</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.00</td>
<td>10</td>
<td>81.50</td>
<td>10.36</td>
<td>74.09</td>
<td>88.91</td>
<td>3.28</td>
<td>67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: 1.00 = 1 year or less, 2.00 = 1.01-10 years, 3.00 = 10.01 or more years
While the three tests did not support the hypothesis that the longer time a person has been without insurance the more resilient they are, the tendencies in mean resilience scores are important to note.

**Hypothesis 3**

The third hypothesis stated that the higher level of employment an individual reports, then the higher his or her resilience. In order to test hypothesis three, a one-way analysis of variance, or ANOVA, was utilized to determine if there is a statistical significance of means between three groups. The data were clustered into 3 arbitrarily divided groups, the first including those who are disabled or unemployed. Participants in this group are considered to be “involuntarily not working” participants that marked one of the above responses. The second group includes those who are retired or homemakers; this group is considered to be made up of “voluntarily not working” participants that marked one of the above responses. The third group includes those who are working part-time or full-time. These participants are considered to be “working” (Table 9).

The mean resilience score for the “involuntarily not working” group was 64.6, for the “voluntarily not working” group it was 88.0, and for “working” group, it was 82.16 (Table 9). This reveals a higher mean in those who are voluntarily not working versus both those who are involuntarily not working and those who are working. In addition, it appears to show that those that are working are more resilient than those who are involuntarily not working (Table 9).

The ANOVA analysis revealed a statistically significant difference between the means of the three groups ($f = 5.247; df = 2,23; p = .013$).
Table 9

**ANOVA Output for Resilience and Employment Level**

<table>
<thead>
<tr>
<th>Employment Level</th>
<th>N</th>
<th>Mean Resilience Score</th>
<th>Std. Deviation</th>
<th>95% Confidence Interval Lower Bound</th>
<th>95% Confidence Interval Upper Bound</th>
<th>Std. Error</th>
<th>Min.</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>5</td>
<td>64.60</td>
<td>14.17</td>
<td>47.01</td>
<td>82.19</td>
<td>6.34</td>
<td>42</td>
<td>5.247</td>
<td>.013</td>
</tr>
<tr>
<td>2.00</td>
<td>2</td>
<td>88.00</td>
<td>0.00</td>
<td>88.00</td>
<td>88.00</td>
<td>0.00</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.00</td>
<td>19</td>
<td>82.16</td>
<td>11.15</td>
<td>76.79</td>
<td>87.53</td>
<td>2.56</td>
<td>62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* 1.00 = involuntarily not working, 2.00 = voluntarily not working, 3.00 = working. *(p = .013)*

A post-hoc test was utilized to determine the specific differences between groups and the significance of those differences. Scheffe’s post-hoc comparison revealed that there is a statistical significance in resilience scores between groups 1 and 3 *(p = .021)* (Table 10).

Table 10

**Scheffe’s Post-Hoc Comparison of Means for Resilience and Employment Level**

<table>
<thead>
<tr>
<th>(I) Employment Level</th>
<th>(J) Employment Status</th>
<th>Mean Difference (I-J)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>2.00</td>
<td>-23.400</td>
<td>.072</td>
</tr>
<tr>
<td>3.00</td>
<td>2.00</td>
<td>-17.558</td>
<td>.021</td>
</tr>
<tr>
<td>2.00</td>
<td>1.00</td>
<td>23.400</td>
<td>.072</td>
</tr>
<tr>
<td>3.00</td>
<td>1.00</td>
<td>17.558</td>
<td>.021</td>
</tr>
<tr>
<td>2.00</td>
<td>1.00</td>
<td>5.842</td>
<td>.793</td>
</tr>
</tbody>
</table>

*Note:* 1.00 = involuntarily not working, 2.00 = voluntarily not working, 3.00 = working. *(p = .021)*

Based on the ANOVA and Scheffe's post-hoc comparison cited above, there is statistical significance in the difference between the mean resilience scores of groups one and three. There also appears to be slight trends towards statistical significance when comparing the difference in the means of groups one and two, as well as two and three. However, Scheffe’s post-hoc comparison does not identify levels of significance for
those comparisons (Table 10). Based on this analysis, the hypothesis that the higher employment, the higher resilience, is supported.

**Hypothesis 4**

The fourth hypothesis states that the stronger an individual identifies his or her support system, then the higher the resilience of the individual. In order to test hypothesis four, a t-test for independent samples was utilized to compare the difference between the means for two independent groups. The independent variable was the strength of the support system and the dependent variable was resilience score. Participants were able to respond with a 1-7 for the question “on a scale of 1-7, how strong would you say that your support system is?”, with one being not at all and 7 being very. Participants were also given a resilience score based on the standardized scale administered as part of the survey, as previously discussed. In order to ensure a more even distribution of responses between groups, responses to the strength of a participant’s support system were broken up into two groups. The first group included those that reported their support system as being a 7. The second group included all other participants.

The average mean of the resilience scores for the first group was 79.07 and was 79.45 for group 2 (Table 11) This sample and analysis did not identify a statistically significant difference in resilience scores based on the strength of a person’s support system ($t = -.072; df = 24; p = n.s.$). The hypothesis that those with a stronger support system would have higher resilience scores was not supported by these data (Table 11).
Table 11

*T-Test of Independent Samples Output for Resilience and Strength of Support System*

<table>
<thead>
<tr>
<th>Strength of Support System</th>
<th>N</th>
<th>Mean Resilience Score</th>
<th>Standard Deviation</th>
<th>t-Score</th>
<th>Degrees of Freedom</th>
<th>Significance (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 7 (Very Strong)</td>
<td>15</td>
<td>79.07</td>
<td>14.71</td>
<td>-.072</td>
<td>24</td>
<td>.943</td>
</tr>
<tr>
<td>&lt; 7 (Not Very Strong)</td>
<td>11</td>
<td>79.45</td>
<td>11.81</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In conjunction with this analysis, another t-test for independent samples was done to determine if the size of a participant’s support system identified any statistically significant differences in resilience. This t-test compared the difference in means for those that identified their support system as being larger, or equal to 5 people, or less than 5 people. Those with a larger support system had a mean resilience score of 82.56, while those will a smaller support system had a mean resilience score of 76.36 (Table 12).

While this analysis did not reveal statistical significance between means, the data does reveal that those with larger support systems reported having higher resilience. Possibly due to the variance within the sample groups, statistical significance could possibly be reached given a larger sample size ($t = 1.2; df = 24; p = \text{n.s.}$).

Table 12

*T-Test of Independent Samples Output for Resilience and Size of Support System*

<table>
<thead>
<tr>
<th>Size of Support System</th>
<th>N</th>
<th>Mean Resilience Score</th>
<th>Standard Deviation</th>
<th>t-Score</th>
<th>Degrees of Freedom</th>
<th>Significance (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 5</td>
<td>12</td>
<td>82.58</td>
<td>11.33</td>
<td>1.20</td>
<td>24</td>
<td>.711</td>
</tr>
<tr>
<td>&lt; 5</td>
<td>14</td>
<td>76.36</td>
<td>14.58</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Number in immediate support system was self-identified by participants.
While statistical significance could not be reached with this sample, the trend does appear to identify those with larger support systems as having a higher resilience score.
CHAPTER V
DISCUSSION

Like Green & McDermott (2010), the above findings and the following discussion points further support the need for social work professionals to actively engage in environments that foster and support the biopsychosocial factors of resilience within the medically indigent population. This section will review the above findings, discuss the findings in relation to social work practice and state suggested implications for practice.

Review of Findings

When determining the biopsychosocial factors of resilience in the medically indigent adult populations, there were many factors that were available for consideration. As the literature discussed, resilience largely depends and may be influenced by many factors, including biological factors, demographics, trauma history, and social support networks (Haglund, Nestadt, Cooper, Southwick, & Charney, 2007). Based on the understanding developed on this perspective and the literature identified regarding this topic, four hypotheses were developed to determine how varying biopsychosocial factors impact resilience in the medically indigent adult population. Through data collected from a non-profit medical clinic serving the low-income and uninsured, this study sought to determine the influence of social services assistance, length of time without insurance, level of employment, and strength of a support system on the resilience scores of participants included in the study.
Varying statistical analyses on the data provided information pertinent to the four hypotheses previously outlined and gave important insight as to those biopsychosocial factors of resilience that may particularly influence resilience scores in this specific population. Hypothesis one sought to determine if receiving assistance from any type of social worker, case manager, patient care advocate, or social services provider increased resilience. Unlike concepts outlined by Hawkins & Groves (2011), the data in this study revealed that there was no statistically significant difference in resilience scores based on this factor. Hypothesis two considered the effects of the amount of time a person has been without insurance on his or her resilience score, predicting that the longer amount of time the lower the resilience score. Data within this sample revealed that there is no statistically significant difference in resilience scores based on this factor. However, in three separate analyses, there appears to be a trend in which resilience is highest in the first year a person is without insurance, with a significant drop in years two and five, and another increase after year five.

Hypothesis three predicted that the higher the level of employment an individual reports, such as disabled, unemployed, homemaker, retired, part-time, or full-time, then the higher their resilience would be. In order to test this hypothesis with more substantial groups, the levels of employment were broken up into three groups, as mentioned above. An ANOVA test for statistical significance revealed that there was a statistically significant difference in resilience scores based on the level of employment reported. A post-hoc test (Scheffe’s) further identified the most difference between those that were involuntarily not working (disabled or unemployed) and those that were working (full-time and part-time).
Hypothesis four sought to determine if the strength of a person’s support system impacted his or her resilience score. This hypothesis predicted that the stronger a person identified their support system as being, the higher his or her resilience score. Data from this study indicated that there was not a statistically significant difference in resilience based on this factor. However, a similar analysis of the difference in resilience based on the size of the support system revealed that there might be a trend towards statistical significance based on the size of the support system. This analysis determined that while it was not statistically significant, it appears that the larger the identified support system, the higher the resilience scores. While this was not the original intent of the hypothesis, it provides an interesting set of additional information.

**Implications for Practice**

While the findings of this study have the potential to provide information pertinent to various implications for social work practice, the findings addressing hypotheses two, three, and four have the most significant implications for practice. While hypothesis one did not reveal statistical significance or any type of noticeable trend, it should be noted that this may be due to the lack of integrated health care models and facilities, as mentioned previously and discussed in literature by Vasan et. al (2014) and Hawkins & Groves (2011). The following will outline these implications in the order of their correlating hypothesis.

**Length of Time Without Insurance and Integrated Health Care**

While the findings for hypothesis two did not reveal the predicted outcomes, the data did present interesting insight into the relationship between the amount of time a person is without insurance and their overall resilience. As it was noted in the literature
portion of this study, there were approximately 44,649,079 people that remained uninsured in July of 2015 (United States Census Bureau, 2015). Therefore, it is appropriate to determine that there are many of this number that have been without insurance for a short time, as well as those that have been without it for a much longer amount of time.

While the literature also identifies that those without insurance are likely to be without it as a result of high insurance premiums, high costs of medical care, and other affordability issues, it does not appear to determine how resilience is impacted by these types of factors (Urban Institute Health Policy Center, 2014). Therefore, it was important for this data to provide information regarding this relationship. Based on the understanding that resilience is a person’s ability, or capacity, to successfully adapt to acute stress, trauma, adversity, or threatening circumstances, it appeared that literature would suggest that the longer a person has had to face the adversity of being medically indigent, then the higher their resilience would be (Masten, Best, & Garmezy, 1990; Rutter, 2006; Zimmerman, 2015). However, this is not what the data included in this study revealed.

As mentioned, this study determined that there was not a statistically significant difference in mean resilience scores based on the length of time a participant had been without insurance. However, the trend of the mean resilience scores that exists in three different analyses provides an interesting view of the relationship that could appear given a larger sample size. The trend reveals that resilience may be higher in the first few years a person is without insurance, then drop in the next set of years, and then increase again. Within the context of the medically indigent adult population, this may be due to the
trends of assistance that is available to the population during the course of their time without insurance. A person that finds him or herself without insurance and is low income often has the opportunity to receive immediate emergency assistance, such as food stamps. However, this emergency assistance often does not last for longer than a year and can leave the person without the assistance he or she may have relied on or knowledge of how to obtain other resources. Therefore, the resilience that was present during his or her initial time without insurance drops. Once a person gets past the period of time in which he or she is without the initial assistance and must figure out how to continue on, they often discover where to obtain additional resources or services that allow him or her to establish some sense of security once more. It is plausible that once this occurs resilience again increases.

In regards to social work practice within this population, this information is essential in understanding when it is most essential to provide services to the medically indigent population. Through the trends identified in the data, there is further support for integrated health care clinics that specialize in providing services to this population. These types of services and facilities, which aim to provide holistic and comprehensive healthcare services that are affordable and accessible, as well as to combine resources available in local communities, would be highly beneficial in the period of time in which people are no longer eligible for immediate assistance and must determine how to continue on (Hawkins & Groves, 2011; Vasan et al., 2014). This gap in services provides an entry point for social work professionals in such settings to come along and provide the necessary support and resources to increase and maintain higher resilience levels.
Resilience and Level of Employment

The data included in this study identified a statistically significant difference in resilience scores based on the level of employment a person has, which supports concepts outlined by Holland (2003), regarding factors contributing to psychosocial resilience. While the data did not wholly support the original hypothesis that resilience would be higher if the level of employment was higher, it identified an essential breakdown of resilience based on a person’s level of employment. The findings did determine that there was statistical significance based on the hypothesis but that the largest difference occurred between the group that included those that were involuntarily not working and those that were working. While it is important to note the statistical significance that supports the hypothesis, it is perhaps more important to understand the difference between the two groups mentioned as it is more pertinent in integrating patient care with best available research practice, supported by Jacobsen & Jim (2008).

While the literature does not identify much regarding the relationship between resilience and employment status, it would seem appropriate to assume that resilience would be higher if a person was “more” employed. This can be determined based on the understanding that many of the uninsured have a family income level of at or below 138% of the federal poverty level and that those belonging to this population often are a part of other vulnerable populations that create further gaps in services (Shartzer et al., 2014). In addition, those that are above the 138% of the federal poverty level do not qualify for government subsidies provided by the Affordable Care Act. It would appear that these gaps in services would further marginalize an individual and lower his or her overall resilience by creating additional levels of adversity, trauma, and difficulty. This
appears to be further supported by the statistical significance found in the difference in resilience scores for those identified as involuntarily unemployed versus those that are working. However, the data also revealed that those that are voluntarily not working appear to have higher resilience scores than either group. Therefore, it may be that resilience is based on the choice to be employed or not employed, rather than the actual status of employment.

Within the context of the medically indigent adult population, these findings suggest that the choice to work is important for higher resilience. While studies show that the three basic factors of resilience in adults can be contributed to the disease, the individual person, and the society and culture they live in, this provides another layer of psychosocial factors that may contribute to resilience (Holland, 2003). While it is often assumed that those that are medically indigent are employed at lower levels and have lower resilience as a result, this draws attention to the element of choice within the development of resilience. This also provides important insight into the level of support that may be necessary in the absence of the choice to work. This may provide support for programs that enable people to work towards workplace re-entry if they are disabled or unemployed or for other sources of support for those that are not able to do so. As the previous discussion states, the integrated healthcare model discussed throughout this study may provide the most beneficial and effective entry point for the medically indigent adult population. With the inclusion of community resource provision and education regarding employment options, in tandem with quality primary and preventative health services, this population may be better served and able to increase resilience (Hawkins & Groves, 2011; Rhyne, Livsey, & Becker, 2015; Smith-Campbell, 2005).
Strength and Size of Support Systems

Unlike Wagnild (2011), in comparing resilience scores based on the reported strength of a person’s support system, there appeared to be no statistically significant difference. However, research identifies that there may be a plausible relationship between social support and resilience and/or management of distress and adversity (Antoni, 2013; Jacobsen & Jim, 2008). Based on this, it would be expected that there would be a statistically significant difference in resilience based on the strength of the support system. As the hypothesis stated, it would be plausible to predict that resilience scores would increase as the strength of the support system increased. While the data does not support the hypothesis, it does lead to another consideration when discussing social support. Along the same lines of the strength of the support system, the size of the support system was also recorded. When comparing those with a support system of five or fewer people with those with a support system of more than five, an interesting trend emerged.

While the intended hypothesis was not supported by the data, there may be merit in the findings regarding the comparison of resilience scores based on the size of the support system. These findings were also not found to be statistically significant, but did reveal tendencies related to differences between the mean resilience scores of both groups. Given a larger and more representative sample, these differences may have been found to be significant. However, while it was not significant, the resilience of those that reported having a larger support system was higher than those that reported having a smaller system.
Regardless of significance, this finding should be considered when applied to practice within the medically indigent adult population. In previous research regarding the biopsychosocial factors of resilience in adults undergoing cancer treatment, the opposite finding was revealed. A study done by Pegoda (2015) found that patients with smaller support systems reported higher resilience than those with larger support systems, which appears to be in direct contrast with this study. This suggests that those that are medically indigent, and often low-income, may need larger support groups and more people set in place to provide them with the necessary psychosocial support than other population groups. For example, as supported by Hawkins & Groves (2011) and Vasan et al. (2014), practitioners and organizations alike may better provide holistic care that includes a variety of sources of support, such as psychiatrists, counselors, social workers, work force representatives, and other professionals, as well as education for existing support systems. Community health clinics operating from an integrated healthcare model may be able to provide a comprehensive service delivery and health care system for vulnerable populations, especially for the medically indigent population (Walley et al., 2008; Vasan et al., 2014).
CHAPTER VI

CONCLUSION

Based on the sample collected and analyzed, there are several important considerations when determining the biopsychosocial factors of resilience within the medically indigent adult population. First, the length of time a person is without insurance may impact his or her resilience. While the first few years marks a high level of resilience, there appears to be a drop between around years two to five, with an increase after that period. This may impact service provision within the middle period in which resilience drops.

Second, there is a statistically significant difference in resilience based on level of employment, specifically between those that are involuntarily employed and those that are employed. This has important implications for the choice involved with employment and the necessity for professionals to ensure that this choice is available and attainable.

Finally, it appears that the medically indigent population may benefit from larger support systems that provide individuals with a wider base of support. Each of these implications provides support for integrated health care models and community health clinics that provide holistic and comprehensive care. Together, these create a larger and more concrete need for such facilities, in order to better and more effectively serve the medically indigent adult population.
Limitations

When collecting data from a primary care facility serving the medically indigent adult population there are inherent limitations present. The nature of the facility utilized within this study did not allow for a sample size that was representative of the population, as there was little opportunity to appropriately conduct the necessary surveys without disrupting the daily operations of the facility. Therefore, the sample size only includes 26 participants out of the overall medically indigent population. It is recognized that this is a small sample size and that findings may not be able to be generalized to the larger population. Additionally, the researcher was the only social services provider within the facility and was required to maintain the caseload already assigned and continuing to be assigned daily. This further inhibited the ability to obtain a larger and more representative sample size.

Another limitation to this study was the selection bias of the researcher, which may have unintentionally skewed representativeness regarding those that were included in the study. This may be reflected in the demographic nature of the study participants, as most participants identified European American, or White. Therefore, the sample did not include a representative sampling of the population. In addition, there were fewer males than females included in the data used for the study findings. This also provides a skewed sample and may not allow for the findings to be generalized to the larger population.

This sample also does include participants that may not fit the traditional definition of “medically indigent,” as there were no participants were excluded based on their income level. While exclusion based on higher income levels may have provided a more representative picture of the medically indigent population based on the technical
definition, it would not have provided a representative sample of the organization through which the sample was derived.

In addition, there were limitations to this study regarding the interviewing environment. There may have been external factors, such as location in the facility, presence of medical staff, presence of family members, or the presence of the researcher that caused the participant’s answers to be skewed. When interviewing the participant may have also requested to either have each question read to them and have the researcher record the answers, or to answer the questions on their own without the researcher’s assistance. Both of these situations may have skewed the responses of the participant or caused them to answer differently than they would have in another situation.

Implications for Further Research

As mentioned in the previous sections, there were several limitations regarding size that may not allow this study to be representative of the medically indigent population as a whole. In addition, there were several findings and differences that were not statistically significant but may have become significant in a larger sample size. Therefore, this study calls for further research regarding the biopsychosocial factors of resilience in the medically indigent adult population, specifically with a larger sample size. A larger sample may allow for more effective representativeness and result in better generalizability of the findings.

Based on the findings of this study, further research is needed to determine if there is a true difference in resilience scores based on the size of the support system. While the findings regarding this comparison reveal higher resilience scores for those
with larger support systems, significance was unable to be found based on the sample size. Within a larger population, the differences in resilience of these two groups may reach statistical significance.

The importance of further research regarding this issue is perpetuated by the differences found in the medically indigent population as compared with adults currently undergoing cancer treatment. There may be significant differences in the importance of the support system for both populations that would be imperative for social work practitioners to be aware of, specifically in regards to support groups and group therapies.

In addition, another analysis of the differences in resilience based on the strength of the support system may be beneficial to include in tandem with the previously mentioned analysis of size. When combined, these two analyses could provide essential information regarding the role of the support system within the medically indigent population, which could have large implications for practice.

Perhaps the greatest call for further research is related to the trend found in relation to time without insurance that suggests that resilience is highest in the first years a person is without insurance, drops in the next several year period, and then increases again. With a larger and more representative sample, a deeper investigation into this specific trend would highly benefit the medically indigent adult population. While this study did not find statistical significance, with the presence of the trend noted previously, further research would be useful in identifying specific relationships and trends related to the topic. If statistical significance could be found regarding the impacts of the length of time without insurance on resilience scores, the findings could have massive and lasting
impacts on practice, especially in light of the Affordable Care Act and push towards integrated healthcare models and community health clinics.
REFERENCES


Pegoda, K. (2015, March). *Biopsychosocial factors of positivity and resilience in adult cancer patients currently undergoing treatment*. Poster session presented at the Baccalaureate Program Directors annual meeting, Kansas City, KS.


APPENDIX A

IRB APPROVAL

February 1, 2016

Ms. Kaftin Puckett
School of Social Work
ACU Box 27866
Abilene Christian University

Dear Ms. Puckett,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled Biopsychosocial Factors of Resilience in the Medically Indigent Adult Population was approved by expedited review (46.110(b)(1) category 7) on 1/28/2016 for a period of one year (IRB # 16-001). The expiration date for this study is 1/28/2017. If you intend to continue the study beyond this date, please submit the Continuing Review Form at least 30 days, but no more than 45 days, prior to the expiration date. Upon completion of this study, please submit the Inactivation Request Form within 30 days of study completion.

If you wish to make any changes to this study, including but not limited to changes in study personnel, number of participants recruited, changes to the consent form or process, and/or changes in overall methodology, please complete the Study Amendment Request Form.

If any problems develop with the study, including any unanticipated events that may change the risk profile of your study or if there were any unapproved changes in your protocol, please inform the Office of Research and Sponsored Programs and the IRB promptly using the Unanticipated Events/Noncompliance Form.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs
APPENDIX B

CONSENT FORM

Title of Study: Biopsychosocial Factors of Resilience in the Medically Indigent Adult Population

You may be eligible to take part in a research study. This form provides important information about that study, including the risks and benefits to you, the potential participant. Please read this form carefully and ask any questions that you may have regarding the procedures, your involvement, and any risks or benefits you may experience. You may also wish to discuss your participation with other people, such as your family doctor or a family member.

Please let the researchers know if you are participating in any other research studies at this time.

Also, please note that your participation is entirely voluntary. You may decline to participate or withdraw from the study at any time and for any reason without any penalty or loss of benefits to which you are otherwise entitled. Please contact the Principal Investigator if you have any questions or concerns regarding this study or if at any time you wish to withdraw. This contact information may be found at the end of this form.

Purpose and Procedures

Purpose of the Research—This study seeks to examine and to identify biopsychosocial factors that are present in individuals without insurance and low-income, with both high and lower levels of resiliency. This will focus on adults, ages 18-64. Current literature identifies few/no studies related to resiliency or factors related to resiliency in individuals within this population. This study aims to identify factors of resiliency within this population in hopes of identifying areas of service gaps. This will provide essential information for providing services that may be beneficial to you in the future.

Expected Duration of participation—If selected for participation, you will be asked to attend 1 visit with the study staff. This visit is expected to take 15-20 minutes.

Description of the procedures—Once you consent to participation in the study, you will be asked to participate in the following procedures:
**Screening**—You will initially be screened to determine your eligibility for participating in the study. This screening will involve a review of your demographic information in order to determine eligibility based on participant criteria such as age, gender, other demographics, diagnosis, and # of participants planned.

**Study Procedures**—Once you are determined to be eligible you will be asked to sign this informed consent document, giving your permission to be interviewed and for your responses to be recorded and used in a research study. You will remain anonymous and your answers will remain de-identified. Upon informed consent agreement, you will meet in a face-to-face interview with the primary investigator and she will administer the 14-item resiliency scale, paired with questions aimed at identifying biopsychosocial factors.

Your participation may be terminated early by the investigators under certain conditions, such as if you no longer meet the eligibility criteria, the researchers believe it is no longer in your best interest to continue participating, you do not follow the instructions provided by the researchers, or the study is discontinued. You will be contacted by the investigators and given further instructions in the event that you are withdrawn by the investigators.

### Risks and Discomforts

There are risks to taking part in this research study. Below is a list of the foreseeable risks, including the seriousness of those risks and how likely they are to occur: Due to the emotional nature of some of the questions involved in the resiliency scale there may be psychological risks to participating in this research study. These risks are rare and unlikely to be serious.

The researchers have taken steps to minimize the risks associated with this study. However, if you experience any problems, you may contact Kaitlin Puckett at the Presbyterian Medical Care Mission at 1857 Pine Street in Abilene, TX, or you may ask to be referred to psychology services provided by the Presbyterian Medical Care Mission. Other referrals may be made as needed and appropriate.

The researchers and ACU do not have any plan to pay for any injuries or problems you may experience as a result of your participation in this research.

### Potential Benefits

There are potential benefits to participating in this study. Such benefits may include the identification of service gaps or areas of need that may be developed in order to provide more comprehensive service provision for patients at the Medical Care Mission. The researchers cannot guarantee that you will experience any personal benefits from
participating in this study. However, the researchers hope that the information learned from this study will help others in similar situations in the future.

**Provisions for Confidentiality**

Information collected about you will be handled in a confidential manner in accordance with the law. Some identifiable data may have to be shared with individuals outside of the study team, such as members of the ACU Institutional Review Board or the Presbyterian Medical Care Mission. Aside from these required disclosures, your confidentiality will be protected. Interviews will all take place in a patient room at Presbyterian Medical Care Mission or other areas in which conversations are not able to be overheard. Data collected will be kept separate from Informed Consent Documents and will include no identifying information. Data collected will be kept in a locked cabinet at Presbyterian Medical Care Mission.

All information kept on a computer will be password protected. All data collected will remain anonymous and de-identified. Information to be shared outside of ACU or the research team will include findings from the resiliency scale, additional questions, and necessary demographic information. No participant will be identified in any information shared at ACU, with the research team, or outside of ACU or the research team. All data will remain de-identified and anonymous. Data shared outside of the agency, the research team, or ACU will be done so in appropriate and formal presentations.

**Confidentiality – How will your records be kept confidential?**

Information we learn about you in this study will be handled in a confidential manner, within the limits of the law. If we publish the results of the study in a scientific journal or book, we will not identify you. The Institutional Review Board and other groups that have the responsibility of monitoring research may want to see study records which identify you as a subject in this study.

Research policies require that private information about you be protected and this is especially true for your health information. However, the law sometimes allows or requires others to see your information. The information given below describes how your privacy and the confidentiality of your research records will be protected in this study.

**What is Protected Health Information (PHI)?**

Protected Health Information is information about a person’s health that includes information that would make it possible to figure out whose it is. According to the law, you have the right to decide who can see your protected health information. If you choose to take part in this study, you will be giving your permission to the investigators and the research study staff (individuals carrying out the study) to see and use your health information for this research study. In carrying out this research, the health
information we will see and use about you will include: your demographic information (age, sex, marital status, the type of work you do, annual income), medical history, information that we get from your electronic or paper medical record, and information you give us during your participation in the study such as during interviews or from questionnaires. We will get this information by asking you or by looking at your electronic and/or paper chart at the Presbyterian Medical Care Mission.

How will your PHI be shared?
Because this is a research study, we will be unable keep your PHI completely confidential. We may share your health information with people and groups involved in overseeing this research study including:

- the following collaborators at other institutions that are involved with the study: Dr. Tom Winter, Abilene Christian University and Debra Burchett or Kathy Robinson at the Presbyterian Medical Care Mission.
- the members of the local research team
- The Institutional Review Board and the Compliance Office of Abilene Christian University, and other groups that oversee how research studies are carried out.

If you decide to participate in this study, you will be giving your permission for the groups named above, to collect, use and share your health information. If you choose not to let these groups collect, use and share your health information as explained above, you will not be able to participate in the research study. Parts of your PHI may be photocopied and sent to a central location or it may be transmitted electronically, such as by e-mail or fax. The groups receiving your health information may not be obligated to keep it private. They may pass information on to other groups or individuals not named here.

How will your PHI be protected?
In an effort to protect your privacy your name will not be recorded and there will be no codes used to identify your health information. Your name will appear on this informed consent document and will not be correlated to information collected. If the results of this study are reported in medical journals or at meetings, you will not be identified.

Do you have to allow the use of your health information?
You do not have to allow (authorize) the researchers and other groups to see and share your health information. If you choose not to let the researchers and other groups use your health information, there will be no penalties but you will not be allowed to participate in the study.

After you enroll in this study, you may ask the researchers to stop using your health information at any time. However, you need to say this in writing and send your letter to Kaitlin Puckett at 122 McGlothlin Campus Center, School of Social Work, ACU Box 27866, Abilene, TX 79601. If you tell the researchers to stop using your health
information, your participation in the study will end and the study staff will stop collecting new health information from you and about you for this study. However, the study staff will continue to use the health information collected up to the time they receive your letter asking them to stop.

**Can you ask to see the PHI that is collected about you for this study?**
The federal rules say that you can see the health information that we collect about you and use in this study. Contact the study staff if you have a need to review your PHI collected for this study.

**How long will your PHI be used?**
By signing this form, you agree to let us use and disclose your health information for purposes of the study until the end of the study. This permission to use your personal health information expires when the research ends and all required study monitoring is over. If the results of this study are reported in medical journals or at meetings, you will not be identified.

### Contacts

You may ask any questions that you have at this time. However, if you have additional questions, concerns, or complaints in the future, you may contact the Principal Investigator of this study. The Principal Investigator is Kaitlin Puckett and may be contacted at (325) 672-5601 or 1857 Pine Street, Abilene, TX 79601. If you are unable to reach the Principal Investigator or wish to speak to someone other than the Principal Investigator, you may contact Dr. Tom Winter at (325) 674-2072 or (325) 674-6055. If you have concerns about this study or general questions about your rights as a research participant, you may contact ACU’s Chair of the Institutional Review Board and Director of the Office of Research and Sponsored Programs, Megan Roth, Ph.D. Dr. Roth may be reached at (325) 674-2885, megan.roth@acu.edu, or 320 Hardin Administration Bldg, ACU Box 29103, Abilene, TX 79699

### Research Consent & Authorization Signature Section

If you agree to participate in this research and agree to the use of your protected health information in this research sign this section. You will be given a signed copy of this form to keep. You do not waive any of your legal rights by signing this form.

**SIGN THIS FORM ONLY IF THE STATEMENTS LISTED BELOW ARE TRUE**
- You have read the above information.
- Your questions have been answered to your satisfaction about the research and about the collection, use and sharing of your protected health information.

*If consent provided by adults (without a surrogate), include this signature section*

### Adult Signature Section

- You have voluntarily decided to take part in this research study.
- You authorize the collection, use and sharing of your protected health information as described in this form.
<table>
<thead>
<tr>
<th>Printed Name of Subject</th>
<th>Signature of Subject</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed Name of Witness</td>
<td>Signature of Witness</td>
<td>Date</td>
<td>Time</td>
</tr>
</tbody>
</table>

**Declaration of witness:** I was present for the entire consent process.

←(initials of witness)
### APPENDIX C

#### INSTRUMENT

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**Scoring Form for the RS-14**

Fill in the score for each statement in the last column labeled “Score.” Calculate total score by adding at the bottom.

<table>
<thead>
<tr>
<th>Circle the number in the appropriate column</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I usually manage one way or another.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I feel proud that I have accomplished things in life.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I usually take things in stride.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I am friends with myself.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I feel that I can handle many things at a time.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I am determined.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I can get through difficult times because I've experienced difficulty before.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I have self-discipline.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I keep interested in things.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I can usually find something to laugh about.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. My belief in myself gets me through hard times.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. In an emergency, I'm someone people can generally rely on.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. My life has meaning.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. When I'm in a difficult situation, I can usually find my way out of it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Score

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### Additional Survey Questions

1. How long (in months) have you been a patient at Medical Care Mission?

2. How long (in months) have you been without insurance?

3. Are you receiving assistance from any type of social worker, case manager, patient care advocate, or social services provider?
4. How many people would you identify as being in your immediate support system?

You may choose any number from 1-7 to describe how much you agree with the following questions. 1 will be not at all and 7 will be very.

5. On a scale of 1-7, how strong would you say your immediate support system is?

6. On a scale of 1-7, how religious/spiritual would you say that you are?

7. On a scale of 1-7, how positive would you say that you are regarding your medical care?

8. On a scale of 1-7, how helpful has it been to receive medical care from Medical Care Mission?

For Interviewer Only:

1. Does the patient have a low, medium, or high no show rate?
   - □ Low- 1 no-show,
   - □ Medium- 2 no shows,
   - □ High- 3 or more no shows