SOCIAL ECOLOGICAL RESILIENCE, SOCIAL CAPITAL, ANOMIE AND THE IMPACT OF COVID-19

By

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B.A., Trinity Western University, 2006

M.A. Fuller Theological Seminary 2012

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DEDICATION

Several years ago, I was in between jobs and communities and living with my parents again. I was conflicted about my desire to switch into mental health and my hopes to pursue a PhD in psychology. I had sent off applications for three years and had not been accepted into any program. I was beginning to question if earning such a degree was just out of reach for me and if I was wasting my time and energy by not giving up. It was at this time I decided to do a life interview with Lola Nina to preserve some of her life and story for the family.

Part of her story, part of our family's story, is how much has been sacrificed for education. Her father, my great grandfather, was a tenant farmer. One season, when she was still very young, he was essentially worked to death by their landlord. Immediately, her older siblings quit school and started working to be able to pay for the basic education of their younger siblings. I was particularly struck by how her older brother, who my father knew as Tito Saneng, worked as bus driver for Cebu Autobus in Manila for the rest of his life. He was dutiful to his family and it meant giving up on his own education and many other professional or personal aspirations he may have had in life. Lola Nina eventually earned a graduate degree as did many of her children, including my father. Lola Nina called education, "The inheritance that can't be robbed."

After doing this interview with Lola Nina I sat a long time with how much my ancestors had given for access to education. I sat with the gravity of the sacrifices made

over generations to give me the freedom and capability to consider pursuing a graduate degree and career in a profession of my choosing. I felt a responsibility to continue.

That life interview was seven years ago. I refocused my efforts. I took classes at Harvard to improve my resume and met my wife Rachel along the way. I was accepted into the program at the University of Louisville the following year under Dr. McCubbin, a Hawaiian professor that I had wanted to study under for several years. I had hoped Lola Nina could have witnessed me defend my dissertation and graduate. I had hoped she could meet my two sons, some of her youngest great grandchildren, the Summer after my internship ended. Sadly, she passed away on February 19th of this year. She passed surrounded by many of her children, grandchildren, and many great grandchildren, many of whom have pursued "the inheritance that cannot by robbed" in many different ways.

This dissertation is dedicated to Lola Nina and Tito Saneng. Your sacrifices and hard work have benefited generations after you and are always remembered with gratitude and love. Gihigugma mo namo hangtud sa kahangturan.

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This dissertation would not have been possible without the love, friendship and support of innumerable people over the course of my life. In big and small ways, many people have poured into my life on purpose. I would simply not be who I am today without their influence in my life. There are too many to acknowledge here but I am grateful and indebted to them all. Of those, several were particularly instrumental in my completion of this dissertation and deserve thanks here.

First, I want to thank my wife Rachel Parkin Gonzaga for her presence in my life. We arrived in Louisville newly engaged and are leaving married with two children. Completing this dissertation in the midst of these major life transitions only added to our already full lives. This led to both moments of great joy and great difficulty over the last several years but I would not have shared these moments with anyone else. I love you like the rainbow. Second, I want to thank my parents Christopher Deiparine Gonzaga and Adele Tapp Gonzaga for giving all that they could to support me over my entire life. Without your willingness to support me through this academic journey it the last several years in particular, it would not have been possible. Finally, I want to thank my academic advisor Dr. Laurie McCubbin. You have spent years creating and holding a space for people like me in academia. I am grateful to have been accepted under you for this undertaking. I do not think I could have navigated this journey without having you in the dual roles of both an academic advisor and Auntie Lali. Mahalo.

ABSTRACT

SOCIAL ECOLOGICAL RESILIENCE, SOCIAL CAPITAL, ANOMIE AND THE IMPACT OF COVID-19

Kevin Pacifico Gonzaga

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From climate change to racial tension and income inequality, many difficulties face the United States and those who live within its borders. The extreme and increasing political polarization in the United States as well as the impact of the COVID-19 pandemic have only made these challenges more difficult to address. In this complex web of adversity, the concept of resilience is important to study. Resilience may be broadly defined as the ability to "bounce back" or return to adaptive functioning after experiencing significant adversity or challenges (Smith et al., 2008). Better understanding how resilience functions and the general state of resilience within the U.S. population may allow psychologists to provide better interventions and guidance to people and communities during these difficult times. A recent trend in resilience research is the use of social-ecological resilience models, which conceptualize resilience as including individual factors, external factors in an individual context, and their interaction (Ungar, 2011). However, research exploring how these external factors and their interaction with individuals relate to resilience remains limited. Given the challenges facing the United States today, social capital, anomie, and the impact of COVID-19 are examples of such external factors that appear likely to impact social-ecological resilience. This study used

online survey methods to collect data from a national sample (n = 758) of the U.S. population seeking to explore the relationship between social-ecological resilience and these variables as well as SES and race. Several variables positively predicted social-ecological resilience including social capital, impact of COVID-19, and income. Anomie was found to negatively predicted social ecological resilience. Black participants also reported greater social-ecological resilience when compared to other participants and other racial differences in these variables were also identified. While this study faced some limitations, the findings underscored the importance of external factors when conceptualizing resilience. Further research is needed to further explore the relationships identified in this study and study with more diverse sample populations is needed to explore the potential impact of demographic variables upon social-ecological resilience.

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CHAPTER I

INTRODUCTION

The United States is currently facing numerous challenges including the ongoing COVID-19 pandemic. These challenges not only present a danger to the basic functioning and integrity of the United States as a whole, but the individual mental health and well-being of its population. Resilience research has generally focused on individual outcomes and individual factors that contribute to resilience. Because of this, the relationship between external factors and resilience is relatively understudied. A more recent conceptualization of resilience is social-ecological resilience. Within this model, it is believed that both internal factors and external factors beyond the individual contribute to resilience. A better understanding of social-ecological resilience may help clinicians and researchers better understand how the people of the United States can navigate and adapt to its current and future challenges. Research exploring the potential relationships between social-ecological resilience, social capital, anomie, and the impact of COVID-19 appears particularly relevant given the current context of the United States. This study was designed and conducted to explore those relationships and expand upon the understanding of social-ecological resilience. However, before discussing research design, specific hypotheses and results, more detail needs to be provided about the current challenges residents in the United States are being resilient to, as well as the

definition and research regarding the variables of interest to this study. It may be best to begin by highlighting some of the specific challenges faced by the United States.

Challenges Faced by the United States

There exists an increasingly complex and dire web of challenges facing the United Sates and those living within the nation. While not every challenge can be explored or even named here, it may be sufficient to identify several that are widespread or relevant to the other variables of interest in this study. Some of these challenges impact life throughout the United States. For example, data suggests that challenges related to climate change are worsening across the nation (United States Environmental Protection Agency, 2021). Income inequality in the United States has continued to escalate for decades (Hoffman et al., 2020). Median incomes have fallen and 37.2 million people, or 11.4% of the total population, lived in federally recognized poverty in 2020 (Shrider et al., 2021). While approximately 40% of the food created in the United States goes to waste (Gunders & Bloom, 2017), hunger is a current issue for an estimated 13.7 million households experiencing food insecurity in 2019 (Coleman-Jensen, et al., 2020). The physical infrastructure of the United States exists in a state of disrepair, with the American Society of Civil Engineers recently giving the infrastructure within the United States an overall grade of "C-" (American Society of Civil Engineers [ASCE], 2021).

The physical and mental health of those living within the United States appears to also be in decline. National spending on healthcare continues to increase, more than doubling in the twenty years between 1996 and 2016 with far less gains in life expectancy than other countries (Dieleman et al., 2020). Despite this increased spending, the physical health of the U.S. population in general has also been in decline for decades

(Muennig et al., 2018). The overall psychological health of the U.S. population appears to be deteriorating as well, with rates of mental illnesses, levels of stress, and lack of access to care all worsening (American Psychological Association [APA], 2020; Mental Health America, 2021). A stark indicator of this decline in mental health across the nation is that deaths of despair, which include deaths related to suicide and drug abuse. Deaths of despair have increased so much in the last decade that life expectancy in the U.S. population dropped for several years starting in 2014 (Social Capital Project, 2019; Gold, 2020).

Other challenges are faced by specific subgroups within the larger U.S. population. For example, current research suggests that discrimination against the LGBT community (Casey et al., 2019), anti-immigrant sentiment (Thompson, 2018; Young, 2017) racial inequities (O'Brien et al., 2020; Pierson et al., 2020), and socio-economic inequities (Braveman et al., 2010; Bosworth, 2018; Singh & Lee, 2021) continue to persist and are in some cases worsening. It should not be ignored that certain subgroups within the U.S. population are not just facing the challenges common to all Americans, but additional ones that arise from the historic and ongoing injustices.

Making matters worse, the U.S. population is attempting to navigate this complex web of adversity as a deeply divided nation. Political polarization has been increasing for years, leading to a situation where many Americans see members of other political groups as a threat to the well-being of the nation (Pew Research Center, 2014). Recent polling indicates that Republicans and Democrats are increasingly hostile and hold increasingly negative views of each other (Pew Research Center, 2022). Social trust, or the general belief that others in society can be trusted and given the benefit of the doubt,

has eroded for several decades (Putnam, 2020). Bi-partisan cooperation in government has declined to low levels, threatening the basic ability of the government to pass legislation (Putnam, 2020). Public trust in the U.S. government in general has been decreasing for years (Edelman Trust Barometer, 2021). The U.S government is increasingly regarded as corrupt by both public opinion and expert assessment (Gallup, 2014; Pew Research Center, 2021; Transparency International, 2021). The belief that political leaders are primarily serving the interests of the economic elite and special interest groups is supported by an increasing amount of research (e.g., Gilens & Page, 2014). The basic legitimacy and efficacy of American democracy is increasingly questioned as a recent poll found that 59% of Americans are not satisfied with how democracy is working in their country (Pew Research Center, 2020). Additionally, many Americans see elected officials of the opposing party as illegitimate, indicating a partisan skew to the views people hold regarding the legitimacy of U.S. elections (Quinnipiac University, 2020; Pew Research Center, 2021). Social cohesion is also decreasing as fewer Americans feel attached to the superordinate national identity of being an "American" and instead increasingly primarily identify with smaller regional and cultural subgroups (Packer, 2021). The alarming and increasing number of Americans who voice support for secession from the United States is a dire indicator of how politically polarized the nation is. When asked if they would support their geographic region seceding from the US, 66% of Republicans in the South, 43% of Republicans in the Midwest, 39% of Democrats in the Northeast and 47% of Democrats in the Pacific supported secession in a recent poll (Bright Line Watch, 2021).

The COVID-19 pandemic appears to have exacerbated many of these challenges. COVID-19 and related public health measures has worsened income inequality. For example, during the pandemic, eight million additional Americans fell below the poverty line (Parolin et al., 2020) and an estimated seven to eleven million Americans were left facing eviction (U.S. Census Bureau, 2021). Existing racial disparities and SES disparities in the United States have contributed to and been compounded by disparities in the impact of COVID-19 (Montenovo et al., 2020; Romano, 2020; Quan et al., 2021). Research into the mental health impact of COVID-19 has found it has been related to increased psychological distress, an increase in new symptoms, and the exacerbation of existing symptoms and disorders (e.g., Breslau et al., 2021; Pan et al., 2021; Xiong, et al. 2020). Data suggests that the already high rate of deaths of despair have increased since the COVID-19 pandemic (Mulligan, 2020). Deaths due to COVID-19 has led to the biggest drop in American life expectancy since World War II (Arias et al., 2021).

Divisions within U.S. society have also impacted the national response to COVID-19 and appear to have been exacerbated by COVID-19. How many Americans think and act in response to COVID-19 is shaped to a significant degree by political affiliation, not public health research or policy. Research has found that perceptions and discussions about COVID-19 information (Jiang, et al, 2020; Kerr et al., 2021) as well as participation in public health measures meant to fight COVID-19 are predicted in a great part by political affiliation (Painter & Qui, 2020). Others have suggested that the efficacy of federal, state, and local city governments to respond to COVID-19 and the reactions of fellow members of society to it will likely impact both trust in government and social trust (Gozgor, 2022; Kye & Hwang, 2020). For example, if the U.S. government is

unable to effectively respond to COVID-19, this may be seen as evidence that leaders are ineffective and/or illegitimate. Findings from research have also supported the hypothesis that the perceived dangers of COVID-19 lead to an increase in authoritarian, nationalistic and anti-immigrant sentiment (Hartman et al., 2021). A rise in specifically anti-Asian rhetoric and hate crimes appears closely tied to the COVID-19 pandemic (see Han et al., 2022; Lantz et al., 2022).

This complex web of severe challenges and worsening realities brings up many uncomfortable questions about the resilience of the United States as a nation and the individuals who live within it. Beyond the question of *if* the United States will endure these challenges is the question of *how* the nation will navigate these challenges. For example, if increased social cohesion and a greater sense of unity is pursued through unfortunately rallying Americans around racism, xenophobia, and authoritarianism, some segments of the nation may indeed become more unified but at a great cost to others. Even if the United States rallies to face these challenges, and does so in a way that does not debase it further, one will still be left with the question previously posed by the soul and jazz poet Gil Scott-Heron: "*Who* will survive in America?" (Scott-Heron, 1970). The United States society may continue generally intact but many individual Americans will not be unscathed as those from vulnerable and targeted populations may suffer greatly or even die in the process. The resurgence of eugenics in public opinion and public policy in the last several years, as well as in the response to COVID-19 response make it clear that some view other Americans as a burden to be disposed of (Bagenstos, 2021). For those that survive, these challenges appear likely to lead to psychological and physical health challenges that may linger for years, ultimately leading to an uneven recovery and further

disparities in the United States (APA, 2020). Overall, the United States and its population are facing many challenges and it is unclear how resilient the nation and its people will be.

Resilience

Considering these significant challenges, understanding and applying the concept of resilience is increasingly important for those within this nation. Resilience might be broadly defined as the ability to recover from hardship or adapt to a context of significant adversity (Smith et al., 2008). A better understanding of resilience may increase the ability of researchers and practitioners within psychology to offer appropriate guidance to people and communities in the United States during these difficult times. Researchers have conceptualized resilience in several ways over the years, including as a static individual trait that allowed certain individuals to recover from hardships (e.g., Seifer & Sameroff, 1987) as well as a process of adapting to challenges or significant adversity within a specific context (e.g., Kaplan, 1999; Luthar et al., 2000). A recent trend in the conceptualization of resilience is the consideration of how external factors may contribute to resilience. This approach to resilience often incorporates or parallels Bronfenbrenner's ecological systems model of human development (Ungar et al., 2013). From this perspective, resilience is seen as a process of adapting to significant adversity that allows for adaptive outcomes to be achieved or for well-being to be maintained during the adversity. This process is made possible by individual variables, external variables that exist within an individual's context and the interaction between these various factors (Ungar, 2011). This conceptualization of resilience has become known as the social-ecological model of resilience. Ungar defined a social-ecological model of

resilience as, “both the capacity of individuals to navigate their way to the psychological, social, cultural, and physical resources that sustain their well-being, and their capacity individually and collectively to negotiate for these resources to be provided in culturally meaningful ways” (Ungar, 2011, pg. 10). While Ungar’s definition focused on access to resources that potentiate the resilience process, similar definitions and ecological models of resilience have been also put forward by other researchers (e.g., Pooley & Cohen, 2010; Maltby et al., 2015).

Research into resilience has been complicated by the development of multiple measures of resilience based on the different conceptualizations of the construct. Past literature reviews have concluded that while measures focused on resilience as an individual trait are commonly used, no measure of resilience has emerged as the “gold-standard” within the existing research (Pangello, 2014; Windle et al., 2011). This has made it difficult to compare existing resilience research and their findings. While measures specifically designed to capture the social-ecological model of resilience, have been developed, they appear to have been used in only a small number of published studies. In general, resilience has been found to be positively associated with desirable outcomes and factors and negatively associated with undesirable outcomes and risk factors (see, Lee et al. 2013). Greater resilience among individuals in the United States would likely predict greater well-being and more desirable outcomes for people who are navigating the current challenges in this nation.

While much of the research regarding resilience has focused on individual factors and individual outcomes, research into resilience has continued to support the notion that relationships, context and community contribute to resilience. A recent meta-analysis of

ten studies that had explored the relationship between secure attachment and resilience found weak to moderate correlations (Rasmussen et al., 2019). The authors of this meta-analysis hypothesized that secure attachment was a core pre-requisite of resilience as many aspects of resilience identified in previous literature are made possible by secure attachment. Another meta-analysis explored research into the resilience of children that had been exposed to violence. The authors identified four factors that most significantly predicted resilience: self-regulation, family support, school support, and peer support (Yule et al., 2019). Three of these four factors are explicitly based in relationships with others and external forms of support. Another recent meta-analysis of 268 studies explored the efficacy of a variety of resilience-promoting interventions. While the results supported the efficacy of resilience interventions in general, the most effective resilience interventions were based around social support such as building supportive networks and connecting with others (Liu et al., 2020). The importance of connection and relationship to others for resilience does not bode well for an increasingly divided and hyper-individualized (Putnam, 2020) nation.

Disparities in resilience are also an area of increasing concern. Some evidence of socio-economic disparities has been found by past studies, with those of lower SES endorsing lower resilience (e.g., Ahern & Galea, 2006; Reihm et al., 2021). Several studies have explored the importance of gender and resilience, and while some concluded there are gender disparities in resilience, there is no clear consensus the research has trended towards (Lee, et al. 2013). Research has generally found that race, culture, and ethnicity do impact resilience and may impact how resilience is understood or achieved (Gunnestad, 2006; Hunter 2001; Brody et al., 2013; Riehm et al., 2021). However, there

is no consensus about specific racial, national, or ethnic disparities in resilience as conflicting findings exist in the research (e.g., Raghavan & Sandanapitchai, 2019; Zheng, et al., 2020). While racial disparities in mental health and stress are well documented in the United States (e.g., Williams, 2018), additional research is needed to explore whether racial disparities exist when it comes to resilience.

The recent trend towards a social-ecological model of resilience has led to many new areas of potential research interest. If external factors contribute to resilience this begs the question of what such factors are, how do they function, and can interventions focused on them be used to increase resilience? Because of this, many variables previously seen as more of the domain of other disciplines such as political science, economics and sociology now seem pertinent to research into resilience. Given previous research into resilience and the current state of the United States., social capital, anomie and the impact of COVID-1 are variables that appear particularly relevant to social-ecological resilience in the nation. These will be explored in more detail, beginning with the concept of social capital.

Social Capital

The origins of social capital are debated (Engbers et al., 2017). Some suggest it was first put forward by Dr. Pierre Bourdieu (1986) and others crediting sociologist Dr. James Coleman (1988, p.98). Dr. Robert Putnam is credited with more broadly popularizing the concept with his book *Bowling Alone* (2000) and since that time many different disciplines have sought to explore social capital. In the research that has been developed over the last several decades, many different definitions of social capital have been proposed and many different subtypes of social capital have been explored (Engbers

et al., 2017). For example, Szreter & Woolcock (2004) proposed the existence of bridging and bonding social capital. According to them, bridging social capital is the social capital between dissimilar people and groups while bonding social capital is the social capital between similar people and groups (Szreter & Woolcock 2004). While no consensus on a single definition of social capital exists, social capital is broadly understood to mean the trust, social bonds, and social networks that benefit individuals and society by increasing access to various resources (Helliwell & Putnam, 2004; Salisu & Hashim, 2017).

Measurement of social capital has at times relied upon proxies to provide rough estimates. For example, a person's response to the question, "Most people can be trusted" has been used to measure attitudinal and cognitive aspects of social capital (Putnam, 2000). Levels of trust in politicians (Nakagawa & Shaw, 2004) and the frequency of community-oriented behaviors have also been used to measure social capital (Aldirch & Meyer, 2015). More formal measures designed to quantify specific definitions of social capital have also been developed. Measuring social capital remains notoriously difficult and hotly debated, with no clear consensus on which definition or measure best captures social capital (Engbers et al., 2017; Salisu & Hashim, 2017).

While the lack of consistent definition and measurement make it difficult to compare research into social capital, research indicates that greater social capital does benefit both individuals and communities. Social capital has been positively associated with positive health outcomes (d'Hombres et al., 2010; Duh-leong et al., 2020), greater social mobility (Li, 2016), greater cooperation across sectors and power differences (Brown & Ashman, 1996; Lyon, 2000), and the stability of liberal democracies

(Fukuyama, 2001; Kenworth, 1997). Social capital has also been associated with greater societal wellbeing, lower levels of crime, increased educational attainment, benefits to public health, increases in gross domestic product, and increased production (Claridge, 2004).

However, it is not true that high levels of social capital always contribute to desirable outcomes. For example, past research has indicated that social capital is positively correlated with social stratification (Waldinger, 1995) nepotism, insider-trading, political favoritism, corruption and suppression (Szreter & Woolcok, 2004; Grootaert, 2004). There is also the issue of who one has social capital with and in what context. Strong social capital in the context of urban poverty has been found to be associated with limited choices and actions (Small, 2002; Wall et al., 1988). Another study found that strong social capital in the Southeast United States was positively associated with a lack of openness and seeking out of information about the impacts of climate change (Smith et al., 2012). Some studies have identified racial and SES related disparities in social capital (Cornwell & Cornwell, 2008; Child, 2016; Moore et al., 2009) supporting the belief that the benefits and costs of social capital are not equally experienced across the U.S. population. Greater social capital for some in the United States might accentuate political polarization and/or increase the retreat from a supra-ordinate identity of "American" in favor of local, cultural, and regional identification, further eroding national cooperating and identification.

Several studies have explored the relationship between social capital and resilience. At an individual level, several studies from around the world have found a positive correlation between social capital and resilience (e.g., Li et al., 2018; Dageid &

Gronlie, 2015). In other cases, a mediating relationship between social capital and resilience has been explored (e.g., Kalaitzaki et al., 2021; Gao et al., 2018; Wu et al. 2014). One meta-analysis of social capital research concluded that there was evidence for a "buffering" hypothesis, in which social capital helped prevent health inequities caused by socio-economy determinants (Uphoff et al., 2013). Past research has found that widespread cooperation, even across previously entrenched differences, appears to be an intuitive and adaptive response when communities are faced with acute large-scale stressors (Solnit, 2010). In light of this, it is perhaps not surprising that research into the role of social capital within communities has found it to be beneficial when those communities face acute or chronic stressors (Pfefferbaum et al., 2017). Research exploring the impact of climate change (Smith et al., 2012), natural disasters (Wong et al., 2019; Straub et al., 2020) and chronic poverty (Poortinga, 2012) have all indicated that social capital is helpful to community level resilience processes and outcomes.

Past research insights into the relationship between social capital and resilience are consistent with the theories of both social capital and the theory of social-ecological resilience. Social ecological resilience suggests that the resilience process is dependent upon the resources accessible to an individual (Ungar, 2011). Social capital research broadly suggests that social capital is the social trust, bonds and social networks that increase an individual's access to resources (Engbers et al., 2017). If greater social capital ultimately leads to greater access to resources, then these additional resources could allow for greater resilience in the face of adversity (Abramson et al., 2015). However, social capital relies upon trust and social bonds between people. In the context of the United States, social capital must connect many different subgroups, many of which have

long histories of conflict. As previously noted, social trust has also been declining for decades in the United States. What happens when trust in others and social bonds breaks down or is not achievable? This brings up the concept of anomie.

Anomie

Several definitions of anomie exist. Anomie was originally proposed by Dr. Emile Durkheim who defined it as a state of society marked by normlessness, or a lack of agreed upon norms (1897). Durkheim's belief was that anomie was caused by rapid social change and increased rates of suicide observed in Europe at the time (1897). Sociologist Dr. Robert K. Merton later argued that a society was in a state of anomie when a society was calling its members to aspire to goals it simultaneously made difficult or impossible for them to achieve through legitimate means (1938; 1968). Sociologists Dr. Steven Messner and Dr. Richard Rosenfeld (2001) later defined anomie as a state of society but argued societies marked and structured by a focus on individualism, the attainment of achievement, and monetary gains were in a state of anomie. Other researchers have conceptualized anomie as existing within the more subjective perceptions and feelings of individuals related to evaluations of their society (e.g., Davol & Reimanis, 1959; McCloskey & Schaar, 1965). For example, some researchers have conceptualized anomie as a sense of alienation, estrangement or distance from others in society (Fischer, 1973; Martin, 2000; Srole, 1956) while others have equated subjective feelings of powerless or meaninglessness with anomie (e.g., Bjarnason, 2009; Thorlindsson & Bernburg, 2004).

While no consensus about the definition of anomie exists, for the purposes of this research study, anomie will be defined according to the two-factor model proposed by

Teymoori et al. (2016). According to this model anomie is a subjective perception of an individual that social trust is breaking down in their society and leadership in their society is ineffective or illegitimate. While this conceptualization of anomie acknowledges that objective conditions within a society shape and inform subjective perception, and perceptions of anomie are not random or arbitrary, Teymoori et al. are careful to maintain that anomie exists in the perception of individuals (2016). Given the decreasing social trust and increasing doubts about the effectiveness, corruption and even basic legitimacy of political leaders in the United States that has been previously discussed, this definition of anomie appeared the most relevant.

There have been numerous ways researchers have attempted to measure anomie and no clear consensus exists about which method is best. Where anomie has been understood to be a state of a society, national level data such as suicide rates, use of welfare services, wealth inequality and homicide rates have also been used to assess anomie in society (Durkheim, 1987; Savolainen, 2000). Where anomie has been understood to be a subjective experience or individual perception, surveys about an individual's feelings or perceptions have been used to measure their level of anomie. For example, reported feelings of powerlessness, alienation and loneliness have all been used to measure individual perceptions or experiences of anomie (e.g., Bjarnason, 2009; Thorlindsson & Bernburg, 2004). More formal measures specifically designed to measure anomie have also been developed, such as the measures developed by Srole (1956) and Agnew (1980).

Research has generally found anomie to be positively associated with undesirable outcomes and variables. For example, anomie has been associated with feelings of

meaningless (Thorlindsson & Bernburg, 2004), a lack of feeling connection and belonging to one's society (Durkheim, 1876; Srole, 1956), feeling out of control and feeling unsafe (Bjarnason, 2009), and increased experiences of depression, mental stress and physiological stress (Lantz & Harper, 1990; Haslam et al., 2005). At the larger social level, anomie has been related to outcomes of concern for basic social functioning. Anomie has been associated with feelings of social alienation and decreased identification with the superordinate social or national group (Blank, 2003; Hornsey & Hogg, 2000; Scheepers et al., 1992; Scrole, 1956). Anomie has also been related to a decrease in the basic belief that interacting and cooperating with others is beneficial, a belief necessary to basic social interactions (Axelrod, 2006).

Given these findings, higher levels of anomie in the U.S. population would likely not benefit individuals or the nation as it navigates current challenges. However, no studies were currently identified that directly explored the relationship between anomie and resilience, regardless of how either variables were conceptualized or measured. A small number of studies have explored the relationship between social capital and anomie (e.g., Philipov et al. 2006). As one might expect, where the relationship between anomie and social capital has been directly assessed, they have been negative correlated (Western et al., 2005).

In terms of disparities, a few studies have indirectly or partially explored potential connections between anomie, race and poverty in the United States (e.g., Torres, 2020). However, only one study was identified that directly explored potential differences in anomie along racial and socio-economic status. In this study, Thomas (2018) found that Black Americans reported higher levels of anomie than White Americans, even when

controlling for SES and other variables. Outside the United States, past research in an Iranian sample found that anomie is negatively correlated to SES (Heydari et al., 2014) and Thomas (2018) found a similar relationship SES negatively in his study with a U.S. sample. However, it should be noted that he found that Black Americans with high SES actually endorsed greater anomie over time in comparison to their White peers indicating a more complicated relationship as additional variables are considered (Thomas, 2018).

Given the decreasing confidence in U.S. politicians and politics in general and decreased social trust in the United States previously discussed, it appears this definition of anomie is particularly relevant to the current context of the United Sates. It has been argued that anomie leads to social schisms, decreased political engagement, social withdrawal (Hornsey & Hogg, 2000; Sani, 2005) and an adoption of authoritarianism or tribalistic tendencies (Teymoori et al., 2017). A better understanding of anomie in the United States and how it relates to social-ecological resilience is needed. It is also important to consider how current events may have increased anomie in the United States. Given that anomie is related to the perception that social trust is breaking down and leadership is ineffective, it appears likely that the impact of COVID-19, the response of other members of society, and the response of the U.S. government may have impacted individual perceptions of anomie. This argument has already been put forward by other authors who have suggested that anomie is likely to have increased due to widespread changes brought about by COVID-19 (e.g., Bastiampillai et al, 2020; Brenner & Bhugra, 2020). However, no studies that empirically explored the relationship between anomie and the impact of COVID-19 was identified. To go further, it must be clarified what is meant by the impact of COVID-19 and how this is to be assessed.

Impact of COVID-19

COVID-19's impact may have influenced social-ecological resilience, social capital, and anomie. Witnessing the politically charged response of the nation to COVID-19 may accelerate political polarization or increase perceptions of anomie (e.g., Bastiampillai et al, 2020; Brenner & Bhugra, 2020). COVID-19 led to dramatic shifts in how we are able to connect to others and who we are able to connect with, potentially impacting social capital. Because social-ecological resilience is also concerned with external factors that foster or frustrate resilience, the impact of COVID-19 directly or indirectly had on these external factors in an individual's context may have altered what resources are available to them. The impact of COVID-19 may have changed the context of people in ways that decrease resilience. For example, if an individual relied on social support from their family and friends to navigate hardships, then COVID-19 related social distancing mandates, disruptions to travel, and even sickness may have limited how accessible this resource are to them. Research about resilience early in the COVID-19 pandemic found that reported resilience was significantly lower than published norms for the CD-RISC measure of individual resilience, indicating a decrease in resilience, at least at that time (Kilgore et al., 2020). Similarly, another longitudinal study in Israel that took measures during the peak of the first wave of COVID-19 and the second found decreases in individual resilience, also measured by the CD-RISC, community resilience, and national resilience (Kimhi et al., 2020). It is unclear if this finding holds true with social-ecological resilience.

It is important to keep in mind the impact of COVID-19 has not been consistent across the entire population. As previously noted, COVID-19 has exacerbated and

appears to be contributing to existing racial and SES based disparities in the United States. COVID-19 impact may have also varied widely across the population. For example, some individuals may have been able to transition to remote work where others lost their jobs entirely due to COVID-19. Some may have lost loved ones due to COVID-19 directly or complications it led to in the healthcare system, while others may not have had any major health problems during this pandemic. Individuals in less densely populated rural areas may have struggled with less resources but been less worried about potential exposure or transmission of COVID-19 compared to those in more densely populated urban areas.

Assessing the impact of COVID-19 is a complicated task. COVID-19 and related public health measures are still ongoing events that have impacted nations, regions, and individuals differently across time and in terms of severity. Additionally, beyond the physical health dangers of COVID-19, COVID-19 has been related to various practical, economic, and mental health challenges (APA, 2020). In both conceptualizing the impact of COVID-19 and selecting a measure that best captures this variable, research and guidance in how to best assess for holistic exposure and impact of natural disasters was closely considered (Guha-Sapir & Hoyois, 2015). This study is interested in the impact of COVID-19 in a similar sense and seeks to identify both the objective amount of exposure to risks and loss an individual has experienced related to COVID-19 as well as the more subjective distress caused by this exposure.

Since the start of the pandemic, many measures have been designed to assess the impact of COVID-19. Many of these measures were not developed with the U.S. populations or were focused only on recent mental health concerns (see Chandu et al.,

2020). Many contained no objective measure of exposure (e.g., Taylor et al., 2020). Of existing scales, the COVID-19 Stressors Scale developed by Park et al. (2020) is perhaps most closely aligned with the conceptualization of COVID-19 impact of interest here. It allows for a broad objective count of stressful experiences related to COVID-19 an individual has been exposed to as well as a subjective rating of how stressful these exposures were.

Specific Hypotheses

Overall, research that explores the impact of social capital, anomie and impact of COVID-19 upon resilience is limited. What exists of this research has generally focused on an individual conceptualization of resilience or has been focused on post-disaster community recovery. Few articles utilized measures of resilience specifically designed to measure social-ecological resilience (e.g., Wu et al., 2018) and no studies that used these measures of social-ecological resilience explored anomie or social capital. Research relying on data collected before 2020 does not capture the potential impact of major events such as the presidential election of 2020, the COVID-19 pandemic, and the resulting economic hardships and challenges. For some, these events presented significant adversity and they may also have had a significant impact on anomie, social capital, and existing SES and racial disparities. To address these gaps in research knowledge, an internet-based survey research project was conducted.

This study had two purposes. First, the study was designed to explore potential relationships between social-ecological resilience, social capital, anomie, race, SES, and the impact of COVID-19. Results from this research may serve to refine the current understanding of social-ecological resilience and provide more information about

relationships between these variables. Second, this research project was designed to assess the current state of social-ecological resilience, social capital, anomie, and impact of COVID-19 in the United States. This information will provide a comparison point for any future research and will help contextualize comparisons between these findings and previous research regarding these variables. Guided by findings from previous research and specific gaps in the research base previously identified, several specific hypotheses were formed.

- Hypothesis 1: The impact of COVID-19 will predict lower scores of social-ecological resilience.
- Hypothesis 2: Social capital will predict higher scores of social-ecological resilience.
- Hypothesis 3: Anomie will predict lower scores of social-ecological resilience.
- Hypothesis 4: Racial differences will be found in predictor and outcome variables of this study. Specific hypotheses include:
    - H4(a): Racial group variables will be statistically significant predictors of social-ecological resilience (Gunnestad, 2006; Hunter, 2001).
    - H4(b): Racial group variables will be statistically significant predictors of social capital (Cornwell & Cornwell, 2008).
    - H4(c): Racial group variables will be statistically significant predictors of anomie (Thomas, 2018).
    - H4(d): Racial group variables will be statistically significant predictors of the impact of COVID-19 (Montenovo et al., 2020; Romano, 2020; Quan et al., 2021).

- Hypothesis 5: SES differences will be found in predictor and outcome variables of this study. Specific hypotheses include. Specific hypotheses include:
    - H5(a): SES will be positively correlated to social-ecological resilience (Ahern & Galeo, 2006; Riehm et al., 2021).
    - H5(b): SES will be positively correlated with social capital (Cornwell & Cornwell, 2008).
    - H5(c): SES will be negatively correlated with anomie (Heydari et al, 2012; Thomas, 2018).
    - H5(d): SES will be negatively correlated with impact of COVID-19 (Montenovo et al., 2020; Romano, 2020; Quan et al., 2021).

Figure 1

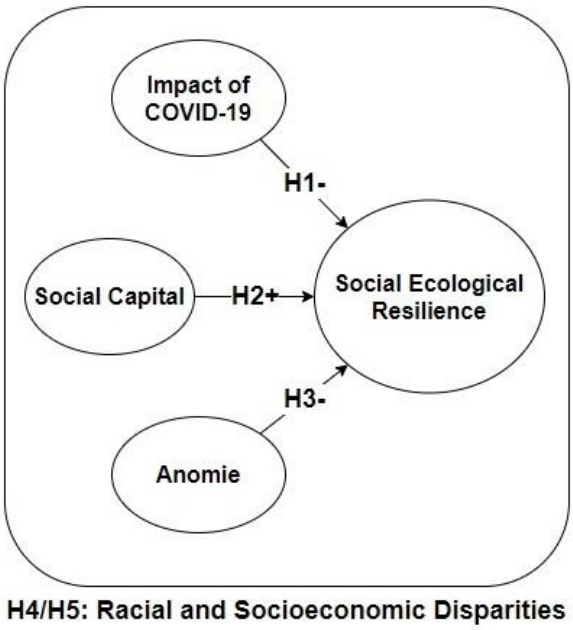

Figure 1. Figure 1 represents the model of the hypothesized relationships.

CHAPTER II

METHODS AND MATERIALS

Research Design

This research project used an internet-based survey design. Data collection was cross-sectional with no longitudinal follow up. The population of interest for this study was individuals who were eighteen years or older, English-speaking, and living within the USA. This is a diverse population of approximately 255 million individuals geographically dispersed across the nation (U.S Census Bureau, 2021). A convenience sample of participants was recruited through the internet using Amazon Mechanical Turk (MTurk) and another community convenience sample was recruited through open solicitation on social media (e.g., Facebook, Reddit, etc.). Participants were asked to complete online surveys regarding demographic information, social-ecological resilience, social capital, anomie, and the impact of COVID-19 in their lives. Participants recruited through Amazon MTurk were compensated $2.00 for their participation, while other participants completed the surveys on a voluntary basis.

Measures

Five measures were used to collect data for this study. They were presented together sequentially in the form of one survey to be completed by participants. Qualtrics Online Survey Software was used to present the survey to participants and collect data.

Demographic Questionnaire

A basic demographic questionnaire was used to collect information about participants (Appendix A). Race and income are the only two variables from this questionnaire that were used in the main analysis of the study. All other variables collected were to provide a more detailed understanding of the sample population and comparison with previous sample populations. Questions regarding age, race, gender and sexual orientation, geographic region and education were modelled after the American Community Survey to allow for ease of comparison with other research findings and available national level data. Income was reported as annual salary. Political beliefs were measured through three seven-point Likert rated questions taken directly from the initial development studies of the Perceptions of Anomie Scale (PAS) (Teymoori et al., 2017). These three questions do not form a scale, but simply ask the respondent to rate their stances in relation to social issues, economic issues, and political affiliation. The inclusion of these questions provided a brief understanding of the political leanings of the sample collected and allow for comparison with findings from other studies. Respondents' feelings of attachment to the American national identity were assessed using the American Identity Measure (AIM) (Schwartz et al. 2012). The inclusion of these items provided information about how participants in this sample related to the superordinate identity of "American." While not part of the main analysis of this study, this information is potentially important as it intersects with race and anomie (Thomas, 2018; Teymoori et al., 2017).

Adult Resilience Measure-Revised (ARM-R)

To measure social-ecological resilience, the Adult Resilience Measure-Revised (ARM-R) (Appendix B) was used (Liebenberg & Moore, 2016; Resilience Research Center, 2019). This measure was specifically designed to assess social-ecological resilience with adults. It contains two subscales: personal resilience and caregiver/relational resilience. The ARM-R is a self-report measure that contains seventeen statements. Respondents are asked to rate how much each statement applies to them on a five-point Likert scale ranging from "Not at All (1)" to "A Lot (5)." Some questions explore personal sources of resilience, such as "Getting and improving qualifications or skills is important to me." Other questions explore caregiver or relational sources of resilience, such as, "My family have usually supported me through life." Overall, the measure's items are designed to solicit information from the respondent regarding areas that are important in terms of social-ecological resilience. Domains of interest include education, sociability, family relationships, access to basic needs, support from family and friends, etc. None of the items are negative keyed and no reverse-scoring is needed. Three scores can be produced, one for each subscale and one for overall social-ecological resilience. The overall score was used in the main analysis of this study as it reflects the individual and external factors of interest. In all scores, a higher score indicates greater reported resilience. Administration usually takes five to ten minutes. The psychometric properties of the CYRM and ARM-R have been explored by several studies and support its continued use and confirmed the two-factor structure of this measure (see Jeffries et al., 2018; Ungar & Liebenberg, 2011; van Rensburg et al., 2017; Liebenberg & Moor, 2018). In this sample, Cronbach's α for this measure was .92.

Personal Social Capital Scale-16 (PSCS-16)

Given the different subgroups within the U.S. population, the history of intergroup conflict and injustice in the United States, as well as the political polarization currently present, the types of social capital of most interest to this study are bridging and bonding social capital proposed by Szreter & Woolcock (2004). Bridging social capital is the social capital between dissimilar people and groups while bonding social capital is the social capital between similar people and groups. To measure these forms of social capital, the Personal Social Capital Scale-16 (PSCS-16) (Appendix C) was used. The PSCS-16 is a shorter version of the original PSCS scale created by Wang et al. (2014). The original PSCS contained over forty items and was developed with a Chinese sample (Chen et al., 2009). The shorter measure includes sixteen items such as "Among your relatives, how many can you trust?" and "How do you rate the number of governmental, political, economic and social groups/organizations in your community?" Liker-scaled responses from 1 ("A Few") to 5 ("A Lot") are used to quantify responses to these items. The scale provides an overall score as well as two subscores for bridging social capital and bonding social capital. The overall score was used in the main analysis of this study. The psychometric properties of the PSCS-16 have been explored and results support its continued use (see Wu et al., 2014; Wang et al. 2014). The use of the translated version of the PSCS and PSCS-16 have also been explored and evidence suggests it is suitable for use with English speaking populations (Archuletta & Miller, 2011). In this sample, Cronbach's α for this measure was .90.

Perception of Anomie Scale (PAS)

The definition of anomie for this study comes from Teymoori et al. (2017). These authors developed a measure of anomie named the Perception of Anomie Scale (PAS)

(Appendix D) (Teymoori et al., 2016) and this was used to measure anomie in this study. This measure was developed and evaluated over the course of six studies and the results of these analyses were reported in a single manuscript (Teymoori et al, 2016). The scale is composed of twelve items. Each item is a statement that respondent's rate their degree of agreement with on a seven-point Likert scale, ranging from 1 ("Strongly Disagree") to 6 ("Strongly Agree"). Six items are designed to explore the first factor termed "Breakdown of Social Fabric," and include questions like "People do not know who they can trust and rely on" and "People are cooperative." Six items are designed to explore the second factor termed "Breakdown of Leadership," and include questions like, "The government is legitimate," and "The government laws and policies are effective." Items were keyed both negatively and positively to reduce response bias. The PAS provides an overall score, and scores for each factor are also calculable, with higher scores indicating a higher perception of anomie. The overall score was used in the analysis of this study. The psychometric properties of the PAS are explored more fully in the initial manuscript covering its development (Teymoori et al., 2017). In this sample, Cronbach's α for this measure was .87.

COVID-19 Stressors Scale

The impact of COVID-19 was measured through a modified version of the COVID-19 Stressors Scale (Park et al., 2020) (Appendix E). The unmodified COVID-19 Stressors Scale contains 23 items, each relating to a specific stressor. Respondents were asked to consider the previous two weeks and indicate what they have experienced. For anything they report to have experienced, they then rate the degree of stressfulness for each item on a Likert scale from 1 ("Not at all") to 5 ("extremely stressful"). The first

eight items were in relation to infection-related stress and include items such as “Risk of becoming infected” and “Read or heard others talk about the severity and contagiousness of COVID-19.” The next ten items related to activity-related stress and disruptions to routine which include questions such as, “Changes to daily work routines,” and “Changed responsibilities to care for dependents.” The final five items pertained to financial losses and included items such as, “Loss of current job security or income.” The COVID-19 Stressors Scale provided two scores: a basic count of stressors a respondent encountered and an overall severity rating of the stress they experienced. This study used the overall severity rating of the stress they experienced as a measure of COVID-19 Impact as this captured both distress and exposure. The psychometric properties of this scale were explored and supported continued use of this measure (Tambling et al., 2020).

To better quantify the holistic impact of COVID-19 and follow guidance related to quantifying exposure and impact (see Guha-Sapir & Hoyois, 2015), two adaptations were made to this measure. First, respondents were instructed to consider their entire experience of COVID-19, from the beginning of 2020 until when they were completing the measure. Additionally, if the severity of an experienced symptom has changed over time, they were asked to provide a rating for the most stressful time. Second, three items were included to capture the fear of personal injury and death, loss of loved ones, and displacement as a result of COVID-19. These were adapted from questions commonly included in disaster exposure measures (e.g., Chan et al., 2014; Felix et al., 2019). Their addition was deemed necessary due to the COVID-19 Stressors Scale’s inability to capture these experiences. These items include, “Personally being infected by COVID-19,” “Friends or family members infected by COVID-19 (e.g., friends or family members

were symptomatic, had to be hospitalized, or died due to COVID-19)," and "Had to temporarily or permanently move due to COVID-19. (e.g., temporary quarantine elsewhere, move due to job loss related to COVID-19, had to move to take care of family, etc.)." These items were rated and scored as with any other item on the COVID-19 Stressors Scale. In the measure overall, respondents were asked if they experienced any of these stressors, and if they did, rate the stressfulness of these events on a Likert scale from 1 ("Not at all") to 5 ("extremely stressful"). In this sample, Cronbach's α for this measure was .93.

Data Collection and Screening

After receiving IRB and Dissertation Committee approval, initial data collection for the pilot study began on 2/27/22. After 300 responses had been collected, recruitment was paused and the reliability of the modified COVD-19 Stressors Scale was examined. The size of the sample study was chosen as three hundred participants to exceed both the general recommendation to have ten participants per every item for reliability analysis and the recommended goal of exceeding one hundred participants based on the results of Principal Component Analysis in the initial study of this measure (Park et al., 2020; Yurdugull, 2008). After analysis of data collected confirmed the reliability of the modified COVID-19 Stressors scale was adequate (Cronbach's $\alpha > .8$), recruitment proceeded for both samples. Data collection from both samples was stopped on 5/20/22 when funding was depleted for this study.

A total of 2,290 responses were collected with 2,151 coming from the MTurk sample and 139 coming from the community convenience sample. Following the guidance of other authors (Huang et al., 2014; Meade & Craig, 2012), quality control

items in the form of bogus questions had been included throughout the survey to detect random or careless responding. Any respondent who incorrectly answered any of these bogus items was removed from the study. Only 827 participants answered all quality control items correctly. The dataset was screened for any missing responses and nineteen participants who submitted incomplete responses were identified and removed from the study, leaving 808 participants included. Outliers were screened for and any responses with a Cook's distance greater than 1.0 was considered an outlier due to its large impact on regression coefficients (Cohen, 2013; Pituch & Stevens, 2016). Fifty respondents with outliers in their responses were identified and removed. The final achieved sample size was n = 758. Considering the smallest statistically significant effect size identified in this analysis (f^2 =.064), the sample size, number of predictors and an α level of .05, G*Power analysis indicated achieved power was .999. The demographic characteristics of the final sample are reported below in Table 1 with comparisons to national level data for this population included where available (U.S. Census Bureau, 2021).

Table 1

Demographics Characteristics of Sample

Demographic			U.S. Census Bureau Comparison
Age (years), *N (%)*	41.48	(12.1%)	
18-24	20	(2.6%)	9.3%
25-34	230	(30.3%)	13.9%
35-44	259	(34.2%)	12.8%
45-54	122	(16.1%)	12.4%
55-64	76	(10.0%)	12.9%
65 and Over	51	(6.7%)	17.5%

Hispanic/Latino Origin, *N* (%)	69	(9.1%)	18.4%
Race, *N* (%)			
White	614	(81.0%)	72.0%
Black	56	(7.4%)	12.8%
Asian	51	(6.7%)	5.7%
AI/AN	5	(0.7%)	0.9%
NHPI	1	(0.1%)	0.2%
Other	7	(0.9%)	5.0%
Two or More Races	24	(3.2%)	3.4%
Income ($ annual) *M (SD)*	$50,363.45	($33,835.80)	$53,824.00
Highest Education, *N (%)*			
High School	71	(8.8%)	27.8%
Some College	134	(16.6%)	17.5%
AA Academic	46	(5.7%)	5.9%
AA Occupational	42	(5.2%)	4.2%
BA	360	(44.6%)	22.1%
MA	118	(14.6%)	9.5%
Professional Degree	10	(1.2%)	1.3%
Doctoral Degree	27	(3.3%)	1.9%
Assigned Sex at Birth *N (%)*			
Male	420	(55.4%)	48.7%
Female	338	(44.6%)	51.3%
Gender Identity *N (%)*			
Male	415	(54.7%)	48.5%
Female	331	(43.7%)	51.5%
Transgender	7	(0.7%)	
Prefer not to Say	5	(0.9%)	
Sexual Orientation *N (%)*			

Heterosexual/Straight	651	(85.9%)	
Gay or Lesbian	19	(2.5%)	
Bisexual	66	(9.0%)	
Something Else	17	(2.2%)	
I don't know	5	(0.7%)	
Region *N (%)*			
West	122	(16.1%)	23.8%
Midwest	175	(21.1%)	20.8%
South	301	(39.7%)	38.0%
Northeast	160	(21.1%)	17.4%
Political Leanings *M (SD)*			
Social Issues	3.15	(1.92)	
Economic Issues	3.60	(1.97)	
Political Affiliation	3.39	(1.88)	
American Identity *M (SD)*	3.77	(0.70)	

Note: AIAN is American Indian/Alaskan Native; NHPI is Native Hawaiian/Pacific Islander. For Political Leanings, lower scores represented Left/Liberal/Democratic Party alignment. Higher scores represented Right/Conservative/Republican Party alignment. The range for these scores was 1-7. For American Identity, lower scores represented less identification with American identity. Higher scores represented greater identification with American Identity. The range for these scores was 1-5.

CHAPTER III

RESULTS

Assumptions

The main analysis of this study was a simultaneous multiple regression. The assumptions of multiple regression were explored to ensure multiple regression was appropriate. The assumption of independence was assumed to be met by the survey design. To explore the assumption of linearity, scatter plots between the outcome variable and the predictor variables were examined. Examinations of these scatter plots did not reveal any clear non-linear relationships. Evidence suggests the assumption of linearity was met.

To explore the assumption of normality, visual examination of histograms for all variables in this study were conducted and the skewness and kurtosis of each variable was examined. Visual examination of histograms of the predictor and outcome variables in this analysis indicated a clear negative skew in the outcome variable. This was not entirely unexpected as self-reports of resilience are often skewed in this direction (Borualogo & Jefferies, 2019), a phenomenon previously experienced by researchers using the ARM (Clark et al., 2021) the initial version of the ARM-R used in this study. Statistical analysis of the skewness and kurtosis was calculated for the predictor and outcome variables. While present, skewness and kurtosis within this sample's variables were all well within the cut off scores of -2 and 2.0 (Byrne, 2010; George & Mallery,

2010; Hair et al., 2010). With all of this considered, it was decided that variables in this dataset did not violate the assumption of normality to an extreme degree that required removal from the analysis.

To explore the assumption of independence of errors, the scatter plot of residuals compared to fits was examined. No clear relationship appeared to exist in a visual examination of a scatter plot of residual versus fits. Additionally, the Durbin-Watson statistic was 1.9, very close to the ideal number of 2. Evidence suggests the assumption of independence of errors was met. Homoscedasticity was visually assessed by examining the Normal P-P plot of Regression Standardized Residuals and a scatterplot of residuals versus predicted values. No clustering or clear systematic pattern was found. Evidence suggests the assumption of homoscedasticity was met.

Multicollinearity was assessed by examining the VIF scores. All VIF scores were well below 10, with most being around approximately 2. Evidence suggests the assumption of multicollinearity was met. Overall, evidence suggested the assumptions for multiple regression had been met and it was an appropriate method to explore variables in this dataset.

Multiple Regression Results

With these assumptions examined and met, all variables were entered into the model and a simultaneous multiple regression was conducted in SPSS 27. In this model the outcome variable was ARM-R Score, and the predictor variables were PSCS-16 score, PAS score, COVID-19 Stressor Scale score, income (in thousands of dollars of annual income), and dummy coded variables representing different racial groups. The

regression coefficients for this model are reported below in Table 2. Effect sizes for statistically significant results were calculated and reported below.

Table 2

Regression Coefficients of Social Ecological Resilience Model

Variables	*B*	*SE*	*t*	*p*	95% CI
Constant	48.57	2.36	20.58	.001	[43.94, 53.20]
Anomie	-1.95	.36	-5.39	.001	[2.66, -1.24]
COVID-19	.03	.01	2.191	.029	[.003, .07]
Social Capital	.50	.03	14.389	.001	[.43, .56]
Income	1.21	.01	44.50	.001	[.02, .06]
Latino	1.21	1.1	4.49	.280	[-.99, 3.40]
Black	3.67	1.21	3.03	.002	[1.30, 6.05]
AIAN	5.21	3.89	1.34	.180	[-2.41, 12.83]
NHPI	8.93	8.57	2.04	.298	[-7.90, 25.77]
Asian	-.01	1.25	-.01	.993	[-2.47, 2.45]
Other	2.64	3.34	.79	.428	[-3.91, 9.20]
Two or More Races	-2.29	1.80	-1.2	.203	[-5.83, 1.24]

Note: AIAN is American Indian/Alaskan Native; NHPI is Native Hawaiian/Pacific Islander.

The adjusted R^2 of this model was .366, F (11, 746) = 39.141, p <.001. This indicates that 36.6% of the variance in social-ecological resilience in this sample population was explained by the variables in this model. Several statistically significant relationships were identified in this regression. Social capital was found to positively predict ($ß$ = .47, $p \leq .001$) social-ecological resilience and this relationship had a moderate effect size (f^2= 0.214). Anomie was found to negatively predict ($ß$ = -.17, $p \leq$ .001) social-ecological resilience and this relationship had a small effect size (f^2= 0.024). Impact of COVID-19 was found to positively predict ($ß$ = .07, p = .029) social-ecological resilience and this relationship had a less than small effect size (f^2 = .004). Income was found to positively predict ($ß$ = .14, $p \leq .001$) social ecological resilience and this relationship had a small effect size (f^2 = .017). Black race was found to positively predict ($ß$ =.10, p =.002) social ecological resilience and this relationship had a less than small effect size (f^2 = .007).

Post-hoc stepwise multiple regression was used to identify the most parsimonious model to predict social-ecological resilience from this dataset. The best model identified in this stepwise multiple regression had an adjusted R^2 of .35 and included social capital, anomie, income, Black race, and COVID-19 stress as predictor variables. Post-hoc analyses were also conducted to explore the correlations between racial variables and the predictor variables of this study as well as between SES and the predictor variables of this study. A summary of all significant correlations is provided in Table 3. Any relationship not in this table was not found to be statistically significant. Scores for the measures used in this study are presented in Table 4.

Table 3

Summary of Significant Correlations

Relationship	Pearson Correlation
Anomie	
White	-.10**
Black	.08*
Two or More Races	.08*
Social Capital	
White	.10**
Black	-.15**
Latino	.07*
Income	.286**
Resilience	
Latino	.08*
Income	.274**
COVID-19 Impact	
AIAN	.127**

Note: AIAN is American Indian/Alaskan Native. * Correlation is significant at the .05 level (2-tailed). ** Correlation is significant at the .01 level (2-tailed).

Table 4

Overall Means and Subscale Means

Measure	Mean	SD	95%CI	Possible Range
ARM-R	68.41	10.67	[67.65, 69.17]	17-85
PSCS-16	46.62	10.09	[45.93, 47.37]	16 – 80
PAS	3.69	.93	[3.62, 3.75]	1 - 7
COVID-19 Stressors	42.57	23.63	[40.89, 44.26]	0 - 130

CHAPTER IV

DISCUSSION

Several specific hypotheses were made before this study was conducted based on previous research. Support for specific hypotheses was assessed by both statistical significance as well as effect size or the strength of their correlation. Cohen's f^2 was used to assess the effect sizes of specific variables within a multiple regression, the main analysis of this study. Cohen's f^2 allows for the evaluation of the effect size of a specific variable within a multiple regression analysis (Selya et al., 2012). Pearson's correlation coefficient (r) was used to assess the strength of the correlation between variables in post-hoc analysis (Cohen, 2013).

COVID-19 and Resilience

H1 hypothesized that the impact of COVID-19 would predict lower scores of social-ecological resilience. This hypothesis arose from the belief that the widespread impact of COVID-19 might interfere with the resources available to an individual and therefore reduce their social-ecological resilience. This was not supported as the main analysis found that COVID-19 Stressors actually positively predicted ($ß = .07$, $p = .029$) social-ecological resilience, though the effect size for this relationship was so small it is not important ($f^2 = .004$). This unexpected result appears to contradict research that previously concluded that COVID-19 had lowered resilience in the U.S. population and other populations in the world (Kilgore et al., 2020; Kimhi, et al., 2020). However, there

is one aspect of this study that should be highlighted when considering this finding. The modified COVID-19 Stressors Scale asked participants about the stressors they encountered over the entire pandemic so far and the worst stress they encountered. For social-ecological resilience, they were rating their current resilience. It is then possible that the distress related to COVID-19 that participants reported occurred months prior to their report of their current resilience. Previous research that noted drops in resilience related to COVID-19 (Kilgore et al., 2020; Kimhi et al., 2020) were collected relatively early in the pandemic. Data for this study were collected in Spring of 2022 sampled the American population that now had almost two and a half years to adjust to the pandemic at the individual level. Local, regional, or national community attempts to provide support for those impacted by COVID-19 also developed over this time span. It is possible that participants did experience a decrease in their resilience due to the impact of COVID-19 but have had sufficient times to adjust. This is speculative and cannot be confirmed due to the cross-sectional design of this study, but may help explain the discrepancy between the findings of this study and previous research. Other studies exploring the impact of COVID-19 have found that over time recovery and return to normal functioning are common responses to distress related to COVID-19 (e.g., Reihm et al., 2021; Park et al., 2021, Lin et al., 2022). In this context, the findings of this study may be confirming such a finding is true when social-ecological resilience is being measured. For many, the COVID-19 may have been a challenge they were resilient to and not an experience that limited the internal and external resources that contributed to their resilience.

None of this would explain the positive prediction, however small in effect size, that was found. It may be possible that this positive prediction indicates a type of post-traumatic growth experienced by those impacted by COVID-19. Post-traumatic growth is the idea that positive changes can result from struggling with highly challenging life crises (Tedeschi & Calhoun, 2004). Some research has found limited evidence for such growth in response to COVID-19. For example, one study of healthcare workers at the peak of the pandemic in April of 2020 found that 61% of them reported a greater sense of meaning and purpose as a result of COVID-19 (Vindegaard & Benros, 2020). It may be possible that those more impacted by COVID-19 encountered this exposure and distress in a way that prompted them to grow in ways that increased internal and external resources that foster resilience. Again, the cross-sectional nature of this study makes it impossible to come to conclusions regarding this possibility.

Social Capital and Resilience

H2 predicted that social capital would predict higher scores of social-ecological resilience. This was supported as the main regression found that social capital positively predicted ($ß = .47$, $p \leq .001$) social-ecological resilience with a moderate effect size ($f^2 = .214$). Social capital, was by far the clearest predictor of social ecological resilience. This finding matches previous literature that found social capital to be positively correlated to resilience (e.g., Li et al., 2018; Dageid & Gronlie, 2015). This finding adds to previous research that has highlighted the importance of relationships to resilience (Liu et al., 2020; Rasmussen et al., 2019; Yule et al., 2019). The use of a measure of social-ecological resilience not commonly used in studies confirms this relationship exists with a social-ecological conceptualization of resilience. It is important to note that social

capital was measured in this study by the PSCS-16, which specifically assesses bonding and bridging social capital. This finding underscores the importance of individuals to be able to work with people both similar and dissimilar to them for their own social-ecological resilience. The idea that increased social capital would lead to increased resources, and this increased availability of resources would allow for greater social-ecological resilience appears to be at least possible. Further research and analysis are needed to explore the relationship between these variables.

Anomie and Resilience

H3 posited that anomie would predict lower scores of social-ecological resilience. This was supported as the main analysis found that anomie negatively predicted ($ß$ = -.17, $p \leq .001$) social-ecological resilience with a small effect size (f^2 = .025). No previous studies that explored the relation between resilience and anomie was identified and this appears to be a new finding. Understanding the nature of this relationship is beyond the scope of this current analysis and research design. While subjective self-report measures were used to quantify both anomie and social-ecological resilience, it is important to keep in mind that perceptions of anomie do not appear arbitrary and are informed by the lived experience of individuals and the material conditions in their society (Teymoori, et al., 2016). In a similar manner, social-ecological resilience is not only about subjective perception of what resources are accessible to individuals in their context, but what resources are objectively present in their context (Ungar et al., 2011). In this, anomie and social-ecological resilience may both be informed by the lived experience of individuals within their society that relate to what resources are available to them. The social conditions people experience in society may act as a confounding variable that explains

part, if not all, of the relationship between anomie and social-ecological resilience identified here. If true, then anomie, and the undesirable outcomes it is associated with, may represent the risks society takes by not attending to the social conditions of its people. Conversely, social-ecological resilience, and the desirable outcomes it is associated with, may represent the reward society could gain by attending to the social conditions of its people. Additional research is warranted to further explore this newly identified relationship and consider its utility moving forward.

Racial Disparities

H4 was that racial differences would be found in the predictor and outcome variables of this study. This hypothesis received mixed support as some racial differences were found, but not in all relationships. The main analysis found Black race positively predicted (*ß* =.10, *p* =.002) social ecological resilience. However, the importance of a 3.67 average higher score on the ARM-R, which has a maximum of 85, may be of debatable importance. Post-hoc analysis identified some statistically significant findings between the correlation of racial groups and other variables in this study. White race was found to be positively correlated to social capital (r = .10, p <.01) and negatively correlated to anomie (r = -.10, p <.01). Latino race was positively correlated to resilience (r = .08, p <.05) and social capital (r = .07, p <.05). Black race was found to be negatively correlated with social capital (r = -.146, p <.01) and positively correlated to anomie (r = .07, p <.05) which matched previous findings (Cornwell & Cornwell, 2008). AIAN race was found to be positively correlated with COVID-19 Stressors (r = .127, p <.01) which is perhaps not surprising given the disproportionate impact of COVID-19 in

the AIAN community (Boserup et al., 2020; Tai et al., 2021). Two or more races was positively correlated to anomie ($r = .07$, $p < .01$).

All other relationships between racial variables and resilience, social capital, and anomie were not significant. Additionally, this study found no racial differences in income or the impact of COVID-19. This was particularly surprising given the amount of research support for racial disparities in wealth and health as well as the impact of COVID-19 on these variables in communities of color (e.g., Montenovo et al., 2020; Romano, 2020; Quan et al., 2021). However, any conclusions about racial differences and potential disparities in the variables of this study are limited by the low levels of participation from participants of color. Non-white racial groups were represented by a small number of participants, with some racial groups so under-represented, stable estimates could not be made in the main analysis. Additional research with communities of color is needed to arrive at more definitive conclusions about the potential existence of racial disparities in these variables.

SES Disparities

The support for H5 was mixed. H5 posited that SES differences would be found in the predictor and outcome variables in this study. The main analysis of this study found that SES positively predicted ($ß = .14$, $p \leq .001$) social ecological resilience with a small effect size ($f^2 = .151$). This finding matches previous literature that found a positive correlation between SES and resilience (e.g., Ahern & Galeo, 2006; Riehm et al., 2020). In this sample, SES was measured by annual income and wealthier respondents typically reported greater resilience. This finding makes sense within the context of the United States and the use of social-ecological resilience within this study. Many resources in the

United States that might contribute to resilience may be present or even abundant, but their accessibility may be dependent upon an individual's access to financial resources. Greater access to money in our society leads directly to greater access to a variety of additional resources that can foster resilience. For example, those with steady and sufficient incomes may be less vulnerable to food insecurity and the mental health challenges related to this issue (Pourmotabbed, et al., 2020). While individuals with no or limited financial resources may still find external factors that aid their resilience (e.g., family support, government programs), they will likely have access to fewer resources overall, and certain resources may not be accessible at all.

SES was also found to be positively correlated to social capital ($r = .286$, $p \leq .001$). This finding matched previous literature that found a similar positive correlation between SES and social capital (Child, 2016; Cornwell & Cornwell, 2008; Moore et al., 2009). However, SES was not found to be correlated to anomie in either direction, a result which conflicts with findings from previous research (Heydari et al, 2012; Thomas, 2018). In this study, those with high and low incomes were equally likely to perceive social trust as eroding in their society and leadership in the United States as illegitimate and/or ineffective. This contrasted with previous findings that found anomie to be correlated to national level indicators of poverty and wealth inequality (Teymoori et al., 2016). More surprisingly, SES was not found to have any significant relationship with the impact of COVID-19 which conflicts with much of the available public data, research and analyses that has found that poorer individuals in society have borne a disproportionate share of the impact of COVID-19 (Montenovo et al., 2020; Quan et al.,

2021Romano, 2020). In this sample, those with high and low incomes appeared equally likely to be impacted by COVID-19.

Limitations

While this study's findings helped to add to our understanding of social-ecological resilience, it had several limitations. One issue was with the final demographics of the sample. In many areas this sample was broadly comparable to the U.S. population. However, several aspects of the final sample's characteristics in comparison to the U.S. population are noteworthy. This sample was notably more educated than the U.S. population with 63.7% of the sample having completed a BA or more advanced degree compared to 34.8% in the U.S. population (U.S. Census Bureau 2020). In this sample, people in the age range of 25-44 were over-represented, representing 64.5% of the sample while this same age backet only makes up 26.7% of the U.S. population (U.S. Census Bureau, 2019). In terms of race, White respondents as well as Asian respondents were over-represented, while all other racial groups were under-represented to varying degrees of severity within this sample (U.S. Census Bureau, 2019). Males were slightly more represented in the sample than in the U.S. population (U.S. Census Bureau, 2019). The demographic differences between this sample and the U.S. population are likely due to the use of Amazon MTurk to recruit most participants within this study. Samples collected through Amazon MTurk have often been skewed in a similar manner (Difallah et al., 2018). The number of participants from communities of color in this study limits the ability to come to conclusions about racial differences or racial disparities within these variables and generalize those findings with confidence.

The use of online survey research additionally limited participation to those who have access to the internet. As of 2020, the Federal Communications Commission (FCC) estimates approximately 90% of Americans have access to broadband, meaning at least 18 million Americans do not have access to broadband internet services (Federal Communications Commission [FCC], 2020). Rural communities and reservation communities in particular have lower access to broadband and may be excluded from participation by the use of the internet to collect data (Bauerly et al., 2019). While the general geographic dispersion of participants across regions of the United States matched U.S. population dispersion in general, certain populations within the United States, such as rural or reservation communities may be under-represented or not represented at all in this study.

Reliance on Self Report

Another issue is the reliance of this study on self-report measures. All of the measures in this study were self-report and were therefore open to various types of bias. The general finding that individuals report high levels of resilience on surveys and the negative skew found in this study's measure of resilience might be the result of social-desirability bias as opposed to a reflection of greater resilience. To an extent this was unavoidable as no objective way to measure certain constructs exist or such a measure would be theoretically possible but impractical for research purposes. This is a limitation shared by many existing research studies around these variables.

Lack of Consensus about Definitions and Measures

Another limitation of this study is more relevant to the state of the research regarding the variables involved. Numerous definitions of resilience, social capital, anomie, and the impact of COVID-19 exist with many different measures built upon these various conceptualizations. There was no clear consensus about definition or measurement of many of these variables. Findings from this study must be understood within the conceptualizations and measures selected for this study. Findings from this study are best compared to studies who used similar measures or conceptualizations of constructs. It is possible that alternative conceptualizations of these variables and alternative measures used may produce different results.

Summary and Conclusion

People within the United States are facing many challenges. Some of the challenges appear to be worsening and are likely to continue into the future. The COVID-19 pandemic has certainly added to these challenges. However, results of this study indicate that COVID-19 has not overwhelmed the typical participant and higher levels of reported social-ecological resilience were common. This study highlighted the important relationship of social capital to resilience. In this study, the ability and willingness to work with similar and dissimilar people was the most important predictor of resilience. Further research is needed to explore the nature of this relationship. Anomie, or the belief that social trust is declining and leadership is failing, appears at odds with resilience. It may be possible that the objective conditions individuals experience in society influence these variables in opposite ways. Further research is needed to explore the relationship between anomie and resilience, and explore the possibility of a confounding variable explaining the relationship observed in this study. Access to financial resources continues

be an important factor when considering resilience. This study found that those with greater incomes reported greater resilience. Additional research is needed to confirm if financial resources in our current social and economic structures dictate access to resources that foster resilience. If true, greater social and economic change may be necessary if we want to increase social-ecological resilience more broadly, especially across socio-economic differences. While some racial and SES based differenced were observed, this study was limited by the low participation of many racial groups. Further research with diverse participants is needed to arrive at more confident conclusions about demographic differences in these variables.

In future studies, different research methods and/or analytic methods may also advance the understanding of the relationships identified in this study. Randomized control trials are practically and ethically limited with some of the variables in this study. However, quasi-experimental research designs may potentially allow for some limited conclusions about causal relationships. Longitudinal studies may also provide information impossible to determine from this cross-sectional study. Additional larger studies would be needed to more fully explore racial or SES based disparities in these constructs. Studies that collect data in similar ways but use different statistical procedures may also come to additional conclusions. Future studies involving larger number of participants of color are needed in order to properly explore the intersection of race with social-ecological resilience, social capital, anomie and the impact of COVID-19.

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CURRICULUM VITAE

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EDUCATION

PhD in Counseling Psychology, University of Louisville 2017 – May 2023
Dissertation Title: Social Ecological Resilience, Social Capital, Anomie and the Impact of COVID-19 Dissertation Accepted 3/3/23
Dissertation Chair: Dr. Laurie McCubbin
Continuing Education in Psychology, Harvard University Extension School, 2015 - 2016
Master of Arts (MA) Theology, Fuller Theological Seminary, 2012
Bachelors of Arts (BA) Biblical Studies, Trinity Western University, 2006
Continuing Education in Psychology, University of Phoenix, 2011-2012
Continuing Education in Psychology, Pasadena City College, 2011-2012

CLINICAL EXPERIENCE

VA Maine Healthcare System – Togus, ME Summer 2022 – Current
Psychology Intern

- Providing individual and group psychotherapy services to Veterans. Major training rotations include Chronic Pain Rehabilitation, PTSD Clinical Team, and General Mental Health.
- Training in a year-long PTSD Clinical Team minor rotation, with an emphasis on CPT training and consultation.

Associates in Counseling Psychotherapy – New Albany, IN Fall 2021 – Summer 2022
Associate

- Provided individual psychotherapy services to low-SES clients in the community and assessment services for parents involved with the Indiana Department of Child Services.

Lexington VA Medical Center – Lexington, KY Fall 2020 – Summer 2021
Practicum Student, Counseling Psychology

- Provided individual psychotherapy services within the MHRRTP program to Veterans addressing substance abuse disorders and trauma related disorders.
- Co-led process group, and groups relating to emotion management, DBT and MBSR.

University of Louisville Counseling Center – Louisville, KY Fall 2019 – Summer 2020
Practicum Student, Counseling Psychology

- Provided individual psychotherapy services to diverse range of students from a large urban university.
- Took part in weekly group and individual supervision focused on professional development, implementing evidenced based practices, and increasing competency with a variety of interventions.

Cardinal Success Program – Louisville, KY Fall 2018 – Summer 2019

Practicum Student, Counseling Psychology

- Provided individual psychotherapy services to child, adolescent, and adult clients in a community mental health setting.
- Co-facilitated group therapy in a juvenile forensic setting.
- Participated in weekly individual and group supervision and didactic training on evidenced-based treatments and multicultural competency counseling.

RESEARCH EXPERIENCE

University of Louisville – Louisville, KY Summer 2017 – Current
Research Assistant

- Member of the McCubbin Resilience Lab, exploring resilience, adaptation and well-being across numerous projects including the Kauai Longitudinal Study.

Harvard University – Cambridge, MA Summer 2016
Research Assistant

- Assisted in research that examined community trust in local police forces in various neighborhoods across the greater Boston area by recruiting participants and collecting and analyzing data.

Harvard University Extension School – Cambridge, MA Spring 2016
Faculty Aide

- Collected data for a study regarding the efficacy of the Build Our Kids' Success program in Massachusetts schools

University of North Dakota – Grand Forks, ND 2013-2014

- *Research Assistant*
  Developed online classes regarding Mental Health First Aid training and Cultural Competency training in conjunction with the U.S. Department of Justice, the UND Center for Rural Health, and UND Department of Pathology for use with federal employees.
- Participated in research related to mental health, food security and measurement within Northern Plains Indian communities.

TEACHING EXPERIENCE

University of Louisville – Louisville, Fall 2019
Teaching Fellow

- Taught two sections of Human Learning and Development for the College of Education and Human Development, a required course for those seeking admittance to the teaching program.

Harvard University Extension School – Cambridge, Fall 2016
Teaching Fellow

- Assisted in the instruction of Stats E-150, Statistics: Methods and Modeling. Teaching a review section, grading student assignments, and providing general support to students and the instructor.

PROFESSIONAL EXPERIENCE

Prospect Hill Academy – Cambridge, MA 2016 – 2017
Librarian

- Overhauled the library of a small upper elementary charter school ensuring diverse representation in the literature and that engaging books could be found for any reading level.

Nueta Hidatsa Sahnish College - New Town, ND Summer 2015
Library Assistant

- Overhauled and reorganized the entire physical collection of the library, adding over $10,000 in new books and media.
- Organized community outreach programs regarding youth literacy.

San Gabriel Valley Children's Center - Azusa, CA 2012-2013
Residential Counselor

- Provided services to foster youth with a broad spectrum of psychological disorders and trauma histories in group therapy and in the group homes.

City Ministry Network - Modesto, CA 2009-2010
Community Development Organizer

- Pursued the development and utilization of a community resource network with partners from The City of Modesto, the Mayor's office, the Modesto Unified School District, Stanislaus County Behavioral Health and Recovery Services and other various local non-profit organizations.

PUBLICATIONS

Gray, J. S., Gonzaga, K., Penland, J. G., Lukaski, H. C., & Stensland, P. (2015). Food Security, Depression and Quality of Life in Northern Plains Indians. *Journal of Indigenous Research, 4*(2015), 3. Available at: http://digitalcommons.usu.edu/kicjir/vol4/iss2015/3

Gray, J. S., Brionez, J., Petros, T., & Gonzaga, K. T. (2019). Psychometric Evaluation of Depression Measures With Northern Plains Indians. *American Journal of Orthopsychiatry*. Advance online publication. http://dx.doi.org/10.1037/ort0000309