PREDICTING BEHAVIORAL INTENTION OF AGRICULTURAL PRODUCERS TO SEEK MENTAL HEALTH ASSISTANCE: THE INFLUENCE OF SOCIAL IDENTITY, SOCIAL CAPITAL, AND SELF-STIGMA

A Thesis

by

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Submitted to the Office of Graduate and Professional Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

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May 2020

Major Subject: Agricultural Leadership, Education, and Communications

ABSTRACT

Mental illness is a silent disease that largely impacts populations across the globe. One population particularly at risk for compromised mental health and related disorders is agricultural producers. Health promotional behaviors like positive help-seeking intention can be used to improve mental health outcomes. One crucial component of improved mental health outcomes is help-seeking intention, which can be mediated by variables such as social identity, social capital and self-stigma. The purpose of this study was to describe the relationship between social identity, social capital, and self-stigma and investigate how these variables influence the mental health help-seeking intentions of agricultural producers. My study utilized survey research design to address these aims. I surveyed a nonrandom, accessible sample of agricultural producers (n=429) in Texas to understand their social identity, social capital, and degree of self-stigma, as well as their intentions to seek mental health assistance and the sources from which they would be likely to seek help.

From this study, I concluded that agricultural producers are most likely to seek help from those closest to them within their social networks, most notably their intimate partners (i.e. girlfriend, boyfriend, husband, wife, de' facto, etc). After intimate partners, agricultural producers noted that if they were experiencing suicide ideation, they would be willing to seek help from religious leaders and mental health professionals. Additionally, I confirmed relationships between social identity and social capital and concluded that social capital and self-stigma are significant predictors of help-seeking

intention. Based upon these findings, I recommend that practitioners utilize identity-based programming, including faith-based and community-centered frames of support to increase social capital. I also recommend that the agriculture community collaborates with mental health professionals to provide services and raise awareness for this industry issue. Additionally, I recommend that first aid trainings, awareness programs and support networks be put in place to assist individuals in agricultural producers' immediate social networks and those from whom they would be most likely to seek help. To address stigma, I recommend that respected voices, such as industry organizations and agribusinesses, implement educational programming and communication strategies to destigmatize mental illness and promote positive help-seeking behavior.

DEDICATION

To my parents—this is for you. Dad, ever since I was a little girl, I witnessed firsthand how difficult it is to be part of this industry. You put in long hours and endure many sleepless nights to feed our family and provide for so many others. Time and time again, you sacrifice your time and energy to make sure that the work gets done—even if the work is not your own. Mom, you are our superhero. You fell gracefully into a position that asks you to work even more after you've already worked a full day. You keep us on track and keep our farm and family running—all while somehow managing to wear all the "mom" hats you can manage. You both are the people others turn to when they need a hand, information, machinery, a part, or advice. I know the burdens you carry. I hope neither of you ever feel as though the burden is too heavy. I hope you always know that if you ever need to turn to anyone, it can be me. I love this industry because you nurtured that passion and curiosity inside of me. I sought this degree because your work and the farm enabled me to do so. I will never take that for granted. You both have given me so much hope and inspiration. I am in awe every day at your wisdom, resilience, and loyalty to our family and our business.

To those who have lost a loved one in the industry to suicide—this is for you. I cannot even begin to fathom how that loss feels. I hope through this project you see and understand how valuable you are. As a supporter of someone who fought mental illness, most likely, you endured the struggle too. I hope you can find some semblance of hope in this project—and in knowing that we will continue to work toward a day where no

family has to experience what you have. I am amazed at your strength and bravery. I pray you find continued peace and restoration as you continue to remember and honor the loved one you lost.

To those in the industry with a mental illness—this is for you. This lifestyle is taxing and the load that it forces us to carry is not always light. I know this industry and others in it have not always given you a safe space to show up in. Please know your work is important. What you do for the agriculture industry matters. But more importantly—you matter. You are seen and supported. I hope this work provides some encouragement. It is my hope that through this work and others, we can eventually cultivate an environment where agricultural producers experiencing mental health problems feel enough acceptance and encouragement to seek help.

ACKNOWLEDGEMENTS

Thank you first and foremost to my family—the most loyal and loving support system. From hundreds of miles away you never failed to offer wisdom and guidance. You all helped me to remember what truly matters in life. You grounded me and prayed for me. I could never ask for anything more.

Thank you also to my amazing committee who helped me navigate this project and this phase of life. Thank you, Dr. McCord for graciously inviting me into your space and sharing your wisdom—and your students—with me. When I most needed a cheerleader and a guide, you became that for me. Thank you, Dr. Redwine for being the calm in my ever-brewing storm. Your guidance, advice, and unwavering faithfulness have influenced me so greatly this semester. I hope that one day I can be half the mentor and teacher that you were to me throughout my time here at Texas A&M University. Finally—thank you, Dr. Strong for believing in me and this project. Thank you for pushing me to achieve what you know I'm capable of. Thank you for challenging me, testing me, and helping mold me into the student and researcher this project and graduate program has enabled me to become.

Thank you also to the many others that helped make this project a success. To Mandi, Larry, and Robert with Texas AgriLife Extension, thank you all for believing in this research and providing me with a platform on which to share it. I am indebted to the time, patience, and help you so willingly gave. To Mason Parish and the Montgomery County Farm Bureau, thank you for supporting this project and working to bring

awareness to the issue and identify practical solutions—so that one day, no one within the industry will have to fight this battle alone.

CONTRIBUTORS AND FUNDING SOURCES

Contributors

This work was supervised by a thesis committee comprised of Drs. Robert Strong, Jr. and Tobin Redwine in the Department of Agricultural Leadership, Education, and Communications and Dr. Carly McCord with the Department of Psychiatry and Health Science Center at Texas A&M University.

The distribution of this survey took place in partnership with two Agriculture and Natural Resource Regional Program Leaders within Texas AgriLife Extension, as noted in Chapter 3 of this thesis. Mandi Seaton served as the initial point of contact with Texas AgriLife Extension and facilitated connection throughout the study. Larry Pierce assisted with distribution among Extension Agents in the East Region and Robert Pritz assisted with distribution among Extension Agents in the West Region.

The analyses depicted in Chapter 4 were conducted, in part, with Dr. Robert Strong, Jr. and Shannon Norris, a Ph.D. candidate in the Department of Agricultural Leadership, Education, and Communications.

All other work conducted for the thesis was completed by me independently.

Funding Sources

Montgomery County Farm Bureau located in Conroe, Texas provided funding for the two gift cards used as incentives for this study.

NOMENCLATURE

ANOVA	Analysis of Variance
ANR	Agriculture and Natural Resources
CBS	Columbia Broadcasting System
CES	Cooperative Extension System
CIC	Collective Identity Construct
COIC	Collective Occupational Identity Construct
CDC	Center for Disease Control
FCC	Federal Communications Commission
FRSAN	Farm and Ranch Stress Assistance Network
GHSQ	General Help-Seeking Questionnaire
IBM	Identity-Based Motivation
MHFA	Mental Health First Aid
NAMI	National Alliance on Mental Illness
NPR	National Public Radio
PBS	Public Broadcasting Service
PSCS	Personal Social Capital Scale
RQ	Research Question
SAMSHA	Substance Abuse and Mental Health Administration
SDSU	South Dakota State University
SOC	Standard Occupational Classification

SSOSH	Self-Stigma of Seeking Help
STRESS Act	Stemming the Tides of Rural Economic Stress and Suicide Act
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
USDA	United States Department of Agriculture
WHO	World Health Organization

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CHAPTER I

INTRODUCTION

In May 2018, the United States Department of Agriculture (USDA) presented their strategic plan for FY 2018-2022. In that strategic plan, the government entity proposed seven strategic goals to further sustain the industry and better serve the American public (USDA, 2018). Two of those strategic goals were dedicated to serving agricultural producers and rural communities. While important, the objectives focused on economic security, business development, and technological innovation, in order to enhance performance and output. In a message to constituents, Secretary of Agriculture, Sonny Perdue said, "...we will work to remove obstacles and give farmers, ranchers, foresters, and producers every opportunity to prosper and thrive" (as cited in USDA, 2018, p. 2). While an effective and admirable business plan, goals for maximizing the ability of agricultural producers and contributing to rural prosperity have so much potential outside of economic development. Research shows that agricultural producers are at increased risk for stress, anxiety, depression, and other mental-health related problems (Milner et al., 2018; Saane et al., 2004). Evidence suggests that multiple factors relating to producer lifestyle, agrarian norms, and stigma surrounding mental health contribute to this growing epidemic within the agriculture industry (Peter et al., 2000; Roy et al., 2017).

United States agriculturalists are continually noted for their dedication to health and the welfare of the products they provide to the food system. As an industry,

agricultural producers commit to providing the public with fresh, healthy, and sustainable food choices. This makes concerns like plant and soil health, water and air quality, and animal welfare, major priorities in the industry. This can be seen through various organizational mission and value statements. Arguably the spearhead of the industry, the U.S. Department of Agriculture (n.d.) states:

> We have a vision to provide economic opportunity through innovation, helping rural America to thrive; to promote agriculture production that better nourishes Americans while also helping feed others throughout the world; and to preserve our Nation's natural resources through conservation, restored forests, improved watersheds, and healthy private working lands.

For an industry so inherently reliant on the health of its production, as a system, it seems to have historically neglected the health and well-being of the individuals who provide those products. We see this through various studies that explore the physical health of farmers and its implications for stress on these individuals. Research conducted by Walker and Walker (1988), found that farmers, as compared to those in other occupations, experienced higher rates of stress, reporting recurring symptoms of fatigue, back pain, insomnia and fluctuations in weight gain and loss. Multiple studies also reported higher rates of anxiety and depression among farmers, indicating that common somatic symptoms could be predictors of an increased susceptibility to mental health problems (Saane et al., 2004; Walker & Walker, 1988; Khan et al., 2018).

Going deeper, more recent studies have examined rates of self-harm and suicide within the agricultural industry—many of which note that laborers, specifically farmers

are at greater risk of suicide (Peterson et al., 2018; Milner et al., 2013). A study published in 2018 by the Centers for Disease Control and Prevention (CDC) found that, "during 2000-2016, the suicide rate among the U.S. working age population (persons aged 16–64 years) increased 34%" (Peterson et al., 2018). Most notably, Peterson et al. (2018) found that the suicide rate for the farming, fishing and forestry industries ranked ninth out of 22.

In light of this data, a growing amount of studies are being published surrounding topics of mental health, mental illness and suicide, especially within agriculture and rural communities. Most research on mental health has been devoted to understanding how stress influences the development of mental health problems, examining demands of the profession, and identifying unique stressors farming populations face. Minimal studies have attempted to characterize the population as a whole (Fraser et al., 2005; see also Milner et al., 2013; Peterson et al., 2018, Truchot & Andela, 2018). Because previous efforts have been devoted to studying the broader problem of mental health and various contributing factors, researchers have devoted fewer resources to understanding specific behaviors of at-risk populations. Those studies that have, focus primarily on male farmers from outside the United States and mostly utilize demographic data to draw conclusions about mental health problems (Roy, 2014, Roy et al., 2017).

One key factor that the literature has thus far neglected to consider is the help-seeking or decision-making behavior unique to this specific population of agriculturalists. It was repeatedly found in the literature that in regard to mental health as a whole, despite support and access to healthcare options, individuals consistently refuse

seeking help (Boerma et al., 2016). As the next step towards understanding this problem, very recent studies have been conducted with various populations as an attempt to understand why this might be the case (Klik et al., 2019; see also House et al., 2018; Roy, 2014). However, all of these studies fail to accurately describe help-seeking behavior of the American agricultural producer. Before addressing how this study fills that gap, it is important to recognize how this research fits within the history of mental health research.

The History of Mental Illness and Concept of Mental Health

Mental health as a discipline has a complex and somewhat ambiguous past. As an incredibly misunderstood field of medicine, researchers historically viewed the discovery of mental illnesses from more of a cultural, rather than a scientific lens (Jutras, 2017). Prior to the theoretical frameworks proposed by Sigmund Freud and John Watson in the early 1900s—which laid the foundation for more modern approaches to diagnosis and treatment—practitioners contextualized much of the discussion surrounding mental illness within religious or supernatural disruptions (Jutras, 2017). Lack of education, research and resources contributed to the fear, stigmatization, and misunderstanding of individuals suffering with various mental disorders and illnesses. Because of this, early physicians prescribed treatments for mental illness that was often curative, physically invasive and more universally applied. It was not until psychologists more widely accepted the theoretical contributions of Freud and Watson that treatment of mental illness became integrated into Western medicine (Jutras, 2017). With this consolidation, further research and education revealed the need for specific diagnoses and tailored

treatment, which called for a distinction between psychological and pharmacological approaches (Jutras, 2017). From here, the societal perception of mental illness and the acceptance mental health as a validated field has ebbed and flowed, but awareness has only grown. As Jutras (2017) states,

> Following the abandonment of supernatural explanations/theories and with the emergence of logical thought and experimental reasoning after the Middle Ages, the stage was set for a transition to a humane method of treating mental illness. This shift led to the advent of modern theories of mental illness, dedicated classification systems, as well as theoretical approaches to treatment based on clinical evidence (n.p.).

Though simplistic, this brief timeline communicates the evolution of mental illness treatment and sets the stage for what would eventually form the foundation for modern mental health research.

While decades have passed since medical professionals have been able to more accurately diagnose mental illnesses and disorders, the broader concept of mental health awareness and acceptance is relatively new. Due to its positioning in multiple fields of science and medicine, its exact origins are truly unknown. According to Bertolote (2008) explicit references to mental health as a field or discipline, were nonexistent in literature prior to 1946. It was not until the formation of the World Health Organization (WHO) that same year, that committees within the WHO passed legislation to establish the Mental Health Association as part of the International Health Conference held in New York (Bertolote, 2008). Until this time, professionals used the term mental hygiene in

place of mental health (Bertolote, 2008). Later, in 1948, the first International Congress on Mental Health gave constitutive definitions of both mental hygiene and mental health, making the distinction between the two (Bertolote, 2008). During this conference, the International Congress defined mental health as,

> a condition, subject to fluctuations due to biological and social factors, which enables the individual to achieve a satisfactory synthesis of his own potentially conflicting, instinctive drives; to form and maintain harmonious relations with others; and to participate in constructive changes in his social and physical environment. (Bertolote, 2008)

Recently, however, the WHO gave mental health a new constitutive definition. As of 2014, the WHO defines mental health as, "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" (*Mental health: A state of well-being*, 2014). Despite the provided definition, the ambiguity of mental health as a discipline remained. The concept of mental health was, and still is, hard to define, comprehend and explain. From its conception, the term mental health has held different meanings and implications across various populations and geographic borders (Bertolote, 2008).

Global and National State of Mental Health

As scientists continue to make more investments in the field of mental health, mental health professionals are attempting to delineate the term within the societal and cultural context of their region. As noted by Bertolote (2008) and Drake et al. (2003) the

interplay between biological and social factors play contributing roles in the perception, diagnosis and treatment of many cases of mental illness. This, however, is not an elementary concept. In some of its early conferences, the International Congress of Mental Health paid special attention to participant representation at gatherings, specifically those where decisions were being made. Noted in meeting minutes, the congress recognized that, "mental health as understood in Western countries [is not] necessarily at variance with the sense in which it is understood in other countries" (as cited in Bertolote, 2005).

This same concept rings true today as the global understanding and programming for mental healthcare varies from country to country. As key stakeholders dedicate more attention to developing systems and programs to treat mental illness worldwide, medical professionals and program directors work to ensure the specific needs of their region and its' recipients are met (Kopinak, 2015). This is reflected in the WHO's Mental Health Atlas—a series of documents published every three years to communicate global commitment to the advancement of mental health (World Health Organization [WHO], 2017). The WHO published the most current report in January 2019 with data collected in 2017. This Mental Health Atlas provides a national-level snapshot of the existing policies, plans and laws for mental health, human and financial resources available and the type of facilities providing care" (WHO, 2017). Seen through findings in this report, it is apparent that on a global scale, the landscape for mental health shares core similarities, but also looks incredibly different. An initial review of these reports and the literature revealed an abundance of research broadly on mental health in the United

States, Canada and countries within the European Union (Roy et al., 2017, Walker & Walker, 1988). Likewise, even more current literature exists that explores mental health in developing countries. However, none of this previous research provided a robust comparison of available infrastructure for mental health programming and policy between countries. Additionally, the investigation revealed an immense lack of literature on program evaluation in any area, but most specifically in developing countries or in areas marked as underserved (Kopinak, 2015).

Health Professional Shortage Areas and Underserved Populations

Ironically, this review of the literature which reveals a lack of attention to mental healthcare in developing countries and underserved populations is evidence for furthering the objectives of the WHO intersystem program called *Nations for Mental Health*. *Nations for Mental Health* aims to provide mental health education, resources and treatment to underserved populations (WHO, 2001). While this program focuses on mental healthcare development within developing nations, there has been a resurgence in Western literature, particularly in the United States, recontextualizing underserved populations. Unintentionally, in the discourse of mental health, the term became somewhat synonymous with developing countries, arguably under the ethnocentric lens of Western medicine (WHO, 2001). However, currently realizing the severity of need represented within its own borders, U.S. scientists and mental health experts are now turning their focus back on domestic soil. This increase in awareness resulted from current mental health research, which points to growing disparities in resources available to certain underserved populations in the United States.

Outlined by Health Resources and Service Administration, under the U.S. Bureau of Health Workforce (BHW), one can find geographic areas, populations and facilities that have been given a shortage designation. Depending on the type or nature of the shortage, BHA assigns one of the following designations to these geographic areas: Health Professional Shortage Area (HPSA), Medically Underserved Area (MUA), Medically Underserved Populations (MUP) or Governor's Designated Secretary Certified Shortage Area for Rural Health Clinics (BHW, 2016d). Bureau of Health Workforce (2016c) gives MUA/P designation to geographic areas or groups of people based on their lack of access to primary health care. MUAs may be counties, neighborhoods, divisions or tracts. MUP designation is given to specific groups or subgroups of people "in a defined geographic area [who] face economic, cultural or linguistic barriers to health care" (BHW, 2016c, n.p.). These designations are calculated based on four criteria that takes into consideration population ratios, economic classification, demographics and the infant mortality rate (BHW, 2016c, n.p.).

An area is marked as an HPSA if, after evaluating the availability of primary, dental and mental healthcare providers the Bureau determines the area under-resourced based on geographic, population or facility restraints (BHW, 2016b). HPSAs are broader in their definition of underservice than the other two designations, because they stretch beyond primary health care and are less exclusive.

Rural Populations

The most specific designation is given to facilities deemed Rural Health Clinics (RHC). To achieve this designation, the facility must meet certain criteria, also set by the

BHW. According to the BHW (2016a), to qualify as a Rural Health Clinic, a facility must be located in a non-urbanized area and must not be or have been eligible for HPSA or MUA designation within the last four years. If the facility meets this criteria, the Governor of the state the facility is located in, can apply for areas of their state to be designated as a shortage area, specifically so certain facilities qualify as an RHC (BHW, 2016a).

While these guidelines are complex, they work two-fold in support of the literature. First, they exemplify the understanding that disparities in access to healthcare, specifically mental healthcare do in fact exist. Additionally, they help to contextualize the concept of underserved communities within the United States. While many of the underserved communities in the United States include children, the elderly, veterans and ethnic minority groups, one population that is receiving increasingly more attention are those in rural communities, as mentioned above. According to the American Psychological Association (n.d.) "studies have shown that 18.7 percent of residents in nonmetropolitan counties—over 6.5 million people—had a diagnosable mental health disorder in 2016." The Rural Health Information Hub (2018) explains how lack of access to medical care and insurance, shortages of medical professionals and facilities, and the stigmatization of mental illness are all factors widening the disparities in rural mental health. Included in this population of rural, underserved residents is agriculturalists and their families.

Cooperative Extension System

One organization that historically, has dedicated itself to serving agriculturalists and individuals within rural communities is the Cooperative Extension System (CES). President Woodrow Wilson created the Cooperative Extension System through the signing of the 1914 Smith-Lever Act (Ramussen, 1989). This system was initially created to serve agriculturalists and those in rural communities. The Smith-Lever Act was a way to "take the university to the people" and share the agricultural knowledge and skills gained from faculty and researchers at the land-grant institutions (Ramussen, 1989, p. vii). This act created what many know today as the Cooperative Extension System, which to this day, houses state extension services in land-grant universities across the United States. Now modernized hubs, state agencies disseminate research and provide agriculturalists with practical industry knowledge, skills and resources to help them sustain and improve their operations (Ramussen, 1989). Now, state extension agencies serve all consumers—rural and urban—and help share information about food, agriculture, natural resources, and human sciences.

Texas A&M AgriLife Extension Service

One of these state agencies is Texas A&M AgriLife Extension. Texas A&M AgriLife Extension is just one arm of the CES. Texas AgriLife Extension is headquartered at Texas' land-grant institution, Texas A&M University, but consists of a network which exceeds 250 county offices and agents throughout the state (Texas A&M AgriLife Extension Service, n.d.). The state agency is dedicated to bettering the lives of Texas residents through its extensive programming. Texas AgriLife Extension serves its

constituents by providing relevant and digestible research relating to horticulture, agricultural economics, animal science, nutrition and food science, soil and crop science and family and community health, among others (Texas A&M AgriLife Extension Service, n.d.). This entity is a key player in information dissemination and also serves as a liaison between the land-grant system and agricultural producers. Unfortunately, many individuals, both within and outside of the agriculture industry, are not aware of the vast services that these state agencies provide (Dewald, 2019). To help fight this disconnect and expand their reach, Texas AgriLife Extension works with its team of communicators to identify needs within the community and develop timely, consumable content—especially when their clients are at risk.

Because Texas AgriLife Extension is uniquely positioned to connect with and share information with agricultural producers, it made sense that when research found that farmers and ranchers were susceptible to mental illness, they stepped forward with information and resources. In May of 2019, Texas AgriLife Extension hosted the National Health Outreach Conference in Fort Worth, Texas (Texas AgriLife Extension Service, 2019). This conference focused on creating health equity across the state and specifically addressed issues relating to rural health, mental health, and farm stress (Texas AgriLife Extension Service, 2019). This state service and others, such as Minnesota and South Dakota, have specifically dedicated programming to tackling this issue and raising awareness for farmer mental health.

Other Efforts Dedicated to Mental Health in Agriculture

South Dakota State University (SDSU) Extension has some of the most developed programming in the U.S. to address mental health issues in the industry (n.d.). SDSU Extension's website features a growing repository of resources related to farm and ranch stress that producers and the general public can access. SDSU has videos and informational articles that they share with information about mental illness, stress management, tools and available resources for anyone who may be interested (SDSU Extension, n.d.). The state extension service also hosts a Farm & Ranch Stress Summit where individuals can attend a weekend-long conference to gain related information and resources (SDSU Extension, n.d.).

Another well-known agency responding to the rural mental health crisis is Minnesota Department of Agriculture. For over 20 years, Minnesota has provided its rural residents, including farmers and others involved in the agriculture industry with rural mental health support (Matthews, 2014). Since 1998, the state has employed Ted Matthews, a rural mental health practitioner, to provide training and outreach throughout the state (Matthews, 2014). This program is senior to other recently developed programs and unlike any of its kind in the United States. Not only does Ted Matthews provide counseling for rural Minnesota citizens, but he also hosts a website with news articles, information and resources related to farm stress, mental health, substance abuse, etc. (Matthews, 2014).

One very interesting and recent effort dedicated to advancing mental wellness in the agriculture community is the Do More Agriculture Foundation (n.d.). This nonprofit

organization is based out of Canada and spearheaded by agriculturalists and industry participants (The Do More Agriculture Foundation, n.d.). The Do More Agriculture Foundation partnered with industry giants like Bayer, Syngenta, Nutrien, and Corteva—among others—to raise funds that allow them to conduct research, disseminate information, and engage agricultural communities about stress, mental illness and mental health (n.d.). While they've created a network of resources and use their platform to share information and promote mental health, they also use donor funds to provide Mental Health First Aid MHFA to Canadian community members, free of charge (The Do More Agriculture Foundation, n.d.). This group has partnered with the Mental Health Commission of Canada to provide this training which is similar to Mental Health First Aid offered in the United States through the National Council for Behavioral Health (n.d.).

While additional programming can be expected as awareness within the industry grows, these state agencies were ahead of the curve in recognizing and addressing the issue. For others to step up and follow suit to address the growing concern of farmer wellness and mental health within the agriculture community, practitioners and researchers must understand more about the history of mental health in the industry and the risks agricultural producers face moving forward.

Mental Health within the Agriculture Community

The development of mental health problems and mental illness is and should be a growing concern of the agriculture industry (Fraser et al., 2005). While general awareness has always been known about the stress involved with labor-intensive

occupations like farming, it could be argued that a tipping point occurred back in 2016 with a report published by the CDC (Gladwell, 2002). The initial report entitled, "Suicide Rates by Major Occupational Group-17 States, 2012" pronounced the farming, fishing and forestry industries as having the highest rate of suicide (McIntosh et al., 2016). The CDC retracted this report due to coding errors that they felt led to inaccurate reporting. Though this report has since been retracted and a new report with accurate data has been published, it was this publication that seemed to lead to a paradigm shift regarding mental health and the agricultural industry.

A brief analysis of content published within the last year shows that, what is being called a "mental health crisis" in agriculture, has caught the attention of regional and national media (Snell, 2018). Outlets such as PBS, NPR and CBS News and even the TODAY show featured stories on mental health in farming and rural communities in 2018, suggesting an increase in awareness and concern for the growing social epidemic (Giambruno & Pawloski, 2018; Ivanova, 2018; Snell, 2018 and Vinopal, 2018). Due to this increase in problem awareness, the public and private sector took action to push for funding to help tackle this issue (H.R. 5259, 2018). With this announcement, existing organizations and nonprofits have begun to enact action plans and develop informational and counseling resources to provide farmers. Society is becoming increasingly aware of the growing problem and the need to support those struggling within the U.S. agricultural workforce. Heightened concern accompanies studies seeking to understand this unique population, including the characteristics and environmental conditions that make them susceptible to the developing mental problems (Fraser et al, 2005).

Producer Susceptibility to Compromised Mental Health

Although every industry is different, there are a number of commonalities shared by farmers and ranchers that contribute to the stress of the occupation (Fraser et al., 2005). There is currently an abundance of literature that explores the effects of stress on farmers, including various stressors, specific to this population, that might contribute to the deteriorating mental health.

Occupational Stressors

In 2018, a study was conducted to develop an instrument aimed at assessing those stress-inducing factors (Truchot & Andela, 2018). This scale, which has been tested for construct and criterion validity and reliability, contained 37 items (Truchot & Andela, 2018). Named The Farmers Stressors Inventory, this instrument was tested on over 2,000 French Famers and used to assess burnout and hopelessness—two psychological predictors of suicidal behavior (Truchot & Andela, 2018). Consulting literature, medical professionals and industry stakeholders, the researchers were able to collect, analyze and outline eight stress-contributing factors for measurement. These factors included workload and lack of time, incertitude toward the future and financial market, agricultural legislation pressure, physical isolation, financial worry concerning the present situation, conflicts with associates or family members, family succession on the farm and unpredictable interference with farm work (Truchot & Andela, 2018). While there are many factor-specific stressors cited in the literature, almost all stress-inducing problems experienced by farmers fell within these categories.

Farming Lifestyle and Somatic Symptoms

Besides occupational stressors, other studies sought to assess further contributors to increased stress and the development of mental health problems such as anxiety, depression and suicidal behavior in farmers (Saane et al., 2004). Researchers found evidence of the negative impact of decreased leisure time, social isolation and intensified manual labor on mental health. While various studies show that social isolation is a lesser contributing stressor for agricultural producers, these themes of the importance of relationships outside the farm, social connections and support groups emerge often in the literature (Gregoire, 2002).

Another important, but often understudied, factor is the stress caused by a deterioration of farmers' physical health. According to Ohrnberger et al. (2017) "there is a strong link between mental health and physical health" (p.42). While the literature doesn't support causal inferences, studies performed by Saane et. al (2004), Walker and Walker (1988) and Demos et al. (2013) provide data that suggest an evident coexistence of physical and mental impairments in farmers. Farmers frequently reported experiencing physical and somatic symptoms of chronic stress (Gregoire, 2002 and Walker & Walker, 1988). According to Walker and Walker (1988), "the most frequently reported symptoms included chronic fatigue, forgetfulness, loss of temper, concentration difficulties, back pain and sleep disruptions" (p. 14–15). Poor physical health could potentially be an indicator of susceptibility to unhealthy levels of stress, depression and other mental health issues.

Agrarian Values, Norms, and Characteristics

It is undoubtedly important to understand the contextual implications of mental health industry wide. Likewise, it is crucial to understand specific stressors and occupational characteristics that contribute to the mental health of production agriculturalists, broadly recognized as farmers in the literature (Truchot & Andlela, 2018). However, another vital component of gaining insight into the state of farmers' mental health is assessing the values, characteristics and/or behaviors of industry players that potentially contribute to the development of mental health issues (Roy et al., 2017). Of the current research that does exist on the mental health of farmers in the United States, this area is least represented in the literature.

One potential factor that negatively influences mental health is the role of gender and gender norms, historically represented in agriculture and agricultural populations. Lu (2007) found that 43 percent of the global agricultural labor force is made up of women, yet the industry is and has historically been, male-dominated. Therefore, most research focused on male farmers. Studies that *did* include women, presented results that suggested more frequent symptoms of stress, depression and deteriorated mental health in men than in women (Saane et al., 2004) In a 2004 study on anxiety and depression in farmers, Saane et al. (2004) concluded that full-time male farmers scored significantly higher than full-time female farmers for depression on the Hospital Anxiety and Depression Scale (HADS). Though the study noted gender influencing scores between men and women within the industry, female farmers scored higher on the scale for anxiety and depression than non-farmer females and non-farmer males (Saane et al.,

2004). While there are a variety of factors that could contribute to higher HADS scores for female famers, some studies suggest that the social masculinization of agriculture could also play a role. As a predominantly male field, agrarian values have historically aligned with male gender norms (Roy et al., 2017). A study, focusing specifically on the male farmers showed that the industry's ties to masculinity has a "major relation" to poor mental health outcomes (Roy et al., 2017, p. 1536).

Societal expectation of farmers depicted them as "strong, relentless workers, who are resilient, resourceful, and stoic" (Roy et al., 2017, p. 1536). Others expressed the association of strength, manual labor and even denial with the "physical toughness required of the male farmer" (Little, 2002, p. 667). Roy et al. (2017) noted that this stereotypical masculine projection onto farmers in the agricultural industry often influenced the institutionalization of a "do it all by myself" mentality (p. 1536). Research suggests that with this mindset, healthy management of emotion and coping strategies—when they were practiced—were often employed as a last resort (Roy, 2014). This is supported by research from Wang et al. (2007), which found that older men are more resistant to help-seeking for mental illness.

Masculinity is not limited to males in the agricultural industry. While multiple studies noted the representation of traditional gender roles on the farm, even studies that include females within the agricultural community noted emphasis placed on the necessity to perform, convey resourcefulness and take on an increased workload (Peter et al., 2000). A study of Iowa farm families revealed that many women in agriculture often take on multiple responsibilities, which place additional stressors on them (Peter et

al., 2000). These included roles on the farm, in the home, at jobs off the farm and often in their church or community, without the same output from their spouse or partner (Peter et al., 2000). Recognizing this as the reinforcement of social construction of patriarchy, the women in this study often voiced their resentment of this increased workload and the strain it caused (Peter et al., 2000). While the source of stress was not the same as the male farmers, this data suggested that often, societal norms of femininity and gender roles are contributable stressors (Peter et al., 2000). These factors don't protect female farmers from experiencing stress, but merely situate these stressors differently for them. In fact, in a self-reported test for stress symptoms, female farmers scored significantly higher than that of male farmers (Walker & Walker, 1988). On a HADS scale, although male farmers scored higher for depression than all other groups, female farmers scored higher for anxiety than non-farmers (Saane et al., 2004).

While these studies showed an unquestionable risk faced by the farming community as a whole for developing mental health problems, the role of gender is poorly understood. This inconsistency in current data leaves many factors to be studied, rendering it somewhat inconclusive. However, current research like that published by Peter et al. (2002) and Saane et al. (2004) does appear to suggest that the demographic of gender is less influential on the mental health of farmers than that of the occupation itself. This current research landscape would lead one to believe that while help-seeking behavior of male and female farmers might differ, perceived barriers and facilitators still exist for both parties. This leaves room for research to explore the help-seeking behavior

of farmers to gain insight as to what factors might hinder or motivate production agriculturalists to speak up about the state of their mental health.

Help-Seeking Behavior Regarding Mental Health

Various efforts have been made in current literature to characterize populations struggling with mental health and understand their behavior. One area, however, that is gaining attention in both medical and social science research is help-seeking behavior. According to Cornally and McCarthy (2011), "the concept 'help-seeking behavior' has gained popularity in recent years as an important vehicle for exploring and understanding patient delay and prompt action across a variety of health conditions" (p. 280). Emphasis in current research has focused on the negative outcomes as a result from delayed or resisting help-seeking, whereas attempts to both fully understand the complexities of and improve help-seeking behavior have "fallen short" (Cornally & McCarthy, 2011, p. 280). However, a concept analysis performed by Cornally and McCarthy (2011) attempted to narrow this gap in the literature and provide a framework for future research. Most notably, an analysis of current terminology and definitions surrounding help-seeking was performed. Many studies explore help-seeking behavior both in concept and in practice. Such research primarily focuses on dealing with medical issues and spans from discussing help-seeking in association with mental health to chronic pain, sexual health, and cancer (Cornally & McCarthy, 2011; Kedde et al., 2012). In each, the understanding of help-seeking behavior across fields of medicine is relatively streamlined, with mental health help-seeking being arguably more prominent in the literature than others.

Defining Help-Seeking Behavior in Mental Health

Surveillance of articles relating to help-seeking in mental health revealed a contextual definition as provided by Rickwood et al. (2005). In this research, help-seeking was defined as, "...the behavior of actively seeking help from other people. It is about communicating with other people to obtain help in terms of understanding, advice, information, treatment, and general support in response to a problem or distressing experience" (p. 4). This definition provides insight into the vast complexities of what it means to seek help. Help-seeking behavior has three defining attributes (Cornally & McCarthy, 2011). Help-seeking must be problem-focused, intentional, and include third-party interaction (Cornally & McCarthy, 2011).

In order to make the step towards seeking help with a problem, one must first identify the presence of a problem and believe that solution or outside intervention is the, or at least, a means to "solve or lessen the health problem" (Cornally & McCarthy, 2011, p. 282). In regards to the second attribute, Cornally and McCarthy (2011) note that by definition, active verbiage is present both in the term 'help-seeking' and in the definition given by Rickwood et al (2005). In this sense, help-seeking should be studied as the conscious and voluntary motive of an agent. This definition of help-seeking does not include assistance that is given but not pursued by the individual in need; though it does not negate its potential importance (Cornally & McCarthy, 2011). The final attribute suggests that help-seeking behavior requires the involvement of another party, to whom the individual must provide information.

Mental Health Help-Seeking of Agricultural Producers

Given the number of studies surrounding help-seeking, it was no surprise to find that research characterizing the mental health help-seeking behavior of certain populations was rather abundant. While many articles sought to broadly understand help-seeking in men, women and adolescents battling mental health problems, literature was extremely scarce in examining the behaviors of production agriculturalists, or farmers. Currently, the only research that has been discovered that examined the help-seeking behavior of farmers was focused on male agriculturalists in Canada. While this research performed by Roy et al. (2014) serves as a great guide for future studies, it operates within a gendered, European construct. Roy et al.'s (2014) research fails to include the challenges unique to American farmers that influence development of mental health problems and factors that contribute to engaging in help-seeking behaviors.

Identity-Based Motivation

Another variable identified in the literature with relationship to help-seeking behavior and decision-making is identity. Oyserman and Markus (as cited in Oyserman & Destin, 2010) posit that identities are influential in the decision-making process, in that they help individuals assign meaning to certain choices and then act accordingly. In the context of identity, people are motivated to act in ways that best aligns with what they believe to be true about themselves. Oyserman and Destin (2010) define this as identity-congruent behavior. Literature commonly cites this phenomenon not only in individuals, but in group-influenced motivation as well. Reed II (2002) states that individuals often lean on social norms to both construct their identities and guide their

actions and interactions with others. In this sense, if one ascribes to a certain societal group, their actions will be based upon their interpretation of what society deems appropriate for that group.

The model of identity-based motivation also looks specifically at salient identities—those most notable or important to an individual. As Oyserman and Destin (2010) point out, the IBM, along with other theories of social identity, agree that when an individual feels a salient identity—one that an individual deems most notable or important— might be threatened, they will act in a way that moves them closer to felt-belonging within the group. For example, in the context of this study, if an individual 1) notes that their association with agricultural producers is integral and important to how they identify as an individual, and 2) they feel that seeking help for mental health issues is incongruent with how a producer behaves or will make them less of an farmer, then according to these theories would be motivated to resist this action. As Oyserman and Destin (2010) states, this can be both beneficial and harmful, as some of these choices could be self-destructive (p. 9).

In IBM, there is a really interesting paradigm, expressed through underlying psychological cognition, that contributes to motivation. This is the phenomena that when an individual perceives that a behavior aligns with their identity, it is comfortable and right. However, when an individual perceives a behavior to be identity congruent, but it seems uncomfortable or difficult, that individual assigns importance to it (i.e. it is "worth it"). Oyserman (2007) gives the example, "no pain, no gain." This dimension of the IBM

holds interesting implications then, for when a behavior is *promoted* as being identity congruent, but fundamentally counter-congruent to the social norms of an identity.

Since the economic farm crisis of the 1980s, extensive research has been dedicated to better understanding farmer mental health (Ortega et al., 1994; see also Truchot & Andela, 2018; Barnett, 2000) While many of these focused on prevalence, stressors, perceived stigma, and other predictors, recent literature focuses on help-seeking behavior, an emerging trend in mental health research (Cornally & McCarthy, 2011). While this research is extensive with other populations (e.g. adolescents; males with chronic illness; college students) help-seeking intentions of agricultural producers are poorly understood. Further, emerging research in mental health has turned its attention to how social environmental factors, such as social identity, social capital, and stigma affect help-seeking intentions (Klik et al., 2019). However, a majority of these studies investigate these influences *independently* within agricultural populations. While this research has paved the way, few studies have been done to examine the relationships between these variables and identify strength of impact (Klik et al., 2019). This study will seek to investigate the relationships between agricultural producers' social identity, social capital, and self-stigma, to better understand the influence of these variables on the help-seeking intentions of agricultural producers regarding their mental health.

CHAPTER II

LITERATURE REVIEW & THEORETICAL FRAMEWORK

In 2012, the Center for Disease Control (CDC) published a report stating that the farming, fishing, and forestry industry ranked highest for occupational suicide rate (McIntosh et al., 2016). At the time, this report received a lot of traction and attention in both science and industry, as its data was widely referenced and supported by other research (Milner et al, 2013; see also Ringgenberg, 2014). This report has since been retracted due to coding errors among occupational groups, and new data suggests that the farming, fishing, and forestry ranked eighth (males) and ninth (females) for occupational suicide rate (Peterson et al., 2018). Despite these new rankings, which appears to show a relatively lower suicide rate, a closer look at the CDC's data and other research reveals far from promising figures (Perdue, 2018). According to the CDC, the *overall* rate of suicide in *general working populations* from 2000-2016 increased nearly 34% to a rate of 17.3 per 100,000 individuals (Peterson et al., 2018). According to the newest report, a sub-group of the data named Farmers, Ranchers, and Other Agricultural Managers—whose data was included as part of the larger Standard Occupational Classification (SOC) of Management—experienced a suicide rate of 32.2 per 100,000, resulting in a rate equivalent to almost two times that of the general working age-population (Peterson et al., 2018). However, due to coding confusion, much of the specific data surrounding agricultural producers was masked and unclear (Perdue, 2018).

Mental Health in Agriculture

Similarly, other research, which isn't quite as ambiguous, offers empirical evidence suggesting that agriculturists are an at-risk population (Milner et al., 2018). Research conducted by Walker & Walker (1988) found that farmers, as compared to those in other occupations, had higher rates of stress—reporting reoccurring symptoms of fatigue, back pain, insomnia, and weight fluctuation. Multiple studies also reported higher rates of anxiety and depression among farmers (Saane et al., 2004; Walker & Walker, 1988). These studies indicated that these somatic symptoms could be predictors of an increased susceptibility to mental health problems (Khan et al., 2018; Walker & Walker, 1988). In addition to academic contributions to the conversation, farmers and others in the agricultural community began to speak out on the issue as well.

Websites, blogs, and social media campaigns relating to farm stress, suicide, and resources for mental illness have begun to surface as many individuals within the industry speak out to raise awareness for the issue (Vinopal, 2018). This internet traction caught the attention of major news outlets including PBS, NPR, and CBS News, who all featured stories on mental health in farming and rural communities in 2018 (Giambruno & Pawloski, 2018; Ivanova, 2018; Snell, 2018; Vinopal, 2018). The issue also turned heads on Capitol Hill, as legislators pushed for the reauthorization of the Farm and Ranch Stress Assistance Network (FRSAN) and support for the Stemming the Tide of Rural Economic Stress and Suicide (STRESS) Act in the most recent Farm Bill (H.R. 5259, 2018). With the passing of this legislation also comes additional funding to assist with farmer mental health promotion, treatment, and intervention (H.R. 5259, 2018).

Unfortunately, while legislators who drafted the bill proposed an initial $10 million for programming, only $2 million was approved for the fiscal year to pilot the reauthorization of FRSAN (Fahy, 2019). The first granting cycle for the FRSAN reauthorization opened in June of 2019 and closed July 2019 to accept grant project proposals related to developing stress-assistance programs (USDA, 2019). While this is an exciting step forward, in order to develop effective programming and identify intervention points, research devoted to better understanding the characteristics and common health behaviors of the at-risk population is crucial.

Help-Seeking in Agricultural Populations

One area that is gaining attention in both medical and social science research in regards to mental health, is help-seeking behavior and intention. A definition provided by Rickwood et al. (2005) aligned most prominently with those provided in other studies. Rickwood et al. (2005) characterized the behavior as an active attempt at communicating with other(s) to request help (e.g. support, resources, treatment) in response to distress. While it appears that many studies have been devoted to help-seeking, especially in the context of mental health, most of this research, has focused on defining help-seeking or explaining negative outcomes related to delayed or resistant help-seeking behavior (Cornally & McCarthy, 2011). Review of the literature revealed, however, that few studies have explored the complexities of help-seeking, nor the strategies for increasing the intention of this behavior (Cornally & McCarthy, 2011). Little attention is given to understanding help-seeking for different types of problems or issues. Most emphasis is placed on help-seeking for or as a result of suicide ideation.

Research by Deane et al. (2001) found that higher levels of suicide ideation correlated with lower levels of intention in young people. This was further affirmed by research from Calear et al. (2014) which found that adults experiencing thoughts of suicide had lower intention to seek help than those who were not.

This literature was especially sparse in regard to agricultural populations. Currently, the only research that has been discovered that examines the help-seeking behavior of farmers focuses on male agriculturalists in Canada. While this research performed by Roy et al. (2014) serves as a guide for future studies, it operates within a gendered, European context. Because of this, it fails to include the challenges unique to American farmers that influence health behavior and their intent to seek help for mental health problems. Evidence supports that a major determining factor of behavior, is an individual's intent to engage in that behavior (Fielding et al., 2008). Thus, studies on the intent of U.S. agricultural producers to engage in help-seeking behavior and factors influencing that decision are necessary contributions to the current body of research.

Social Identity

Another recent development in mental-health research, specifically within the context of health-related norms and behavior, is the examination of social identity as a contributing factor. As social beings, people operate within the realm of groups and associate with those communities to which they've become a part (Haslam et al., 2009). Social psychologists have long studied the effects of these relationships on the individual's cognitive conception of their identity. According to Klik et al. (2019) as individuals become psychologically invested in these groups, *I* becomes the collective

We. Research shows that in these instances, individuals begin to monitor and adjust their attitudes and behavior to align with group norms and beliefs (Klik et al., 2019). This behavioral phenomena forms the foundation for the social identity theory proposed by Tajfel and Turner (1979). As an initial attempt at understanding intergroup conflicts, the theory has been found effective in studies examining decision-making and behavior. In the context of health, social identity theory has been widely referenced as a determinant of symptom appraisal and response, health-related norms and behavior, and clinical outcomes (Haslam et al., 2009).

Most recently, studies of social identity theory with agricultural populations as their focus have emerged. Studies by Groth (2016), Groth et al., (2017) and Fielding et al. (2008) used social identity theory or variations of it to explain decision-making and behavior relating to certain agricultural practices. Others find that social identity and the cultural norms associated with that identity also affect help-seeking. Research by Polain et al. (2011) found that agricultural producers over the age of 58 resisted help-seeking for mental health because of cultural barriers. They felt that providers were unfamiliar with their lifestyle and services were insensitive to culture and livelihood (Polain et al., 2011). Thus, researchers suggested that more successful forms of intervention and treatment would better align with their identity and way of life. While the social identity theory has been used in the context of mental health behavior, help-seeking intentions, and even with agricultural populations, the role of social identity in farmers' mental health help-seeking behavior is not represented in the literature. Thus, potential opportunities existed to examine health behavior where these foci collide.

Social Capital

Another dimension of societal influence on behavior is social capital, which explains relationships, networks, and various outside individuals or groups that impact one's beliefs and actions. Like social identity, social capital has been used extensively in research involving agricultural producers and also in understanding mental health outcomes. However, very seldom have they been convergently investigated. Despite its varied use in the literature, definitions surrounding social capital remain fairly consistent. According to De Silva et al., (2005), the most widely used definitions in the health sciences agree that social capital is multidimensional and comprised of components like social networks, trust, engagement and participation, a sense of belongingness, and reciprocity of norms, among others. Research also suggests these dimensions of social capital promote health and well-being when emphasized (Haslam et al., 2009; Lin, 2001). Specifically, the literature provides evidence that suggests increased social capital can improve mental health outcomes and significantly contribute to reducing stress, illness, and depression (Magson et al., 2014). Research shows that individuals with a reportedly high social capital perceive a sense of belonging and support, which can have significant impact on an individual's mental health (Magson et al., 2014).

As a basis of support and interaction, social identity also works hand-in-hand with social capital (Haslam et al., 2009). The literature reveals that in-groups to which an individual most strongly identifies not only contribute to that person's social capital, but serve as a support system (Haslam et al., 2009). Due to the nature of these relationships

and the sense of shared social identity, social networks are highly influential in the behavior of group members (Haslam et al., 2009). Research indicated that individuals are more likely to seek help when their social groups encourage such behavior (Hobson, 2008). A study by Hedge et al., (2017) assessed the relationship between social capital and help-seeking intentions of 589 American youth in rural areas for dating violence. This longitudinal study found that participants with higher levels of bonding social capital were more willing to seek both informal and professional help (Hedge et al., 2017). Hedge et al. (2017) provided statements to support further investigations between social capital and help-seeking in rural populations as a means for identifying intervention points. While this study contributed to research on social capital and help-seeking in rural populations, it was only inclusive of adolescents. A gap in the literature exists specifically pertaining to social capital and help-seeking in rural-based adults, most specifically agriculturalists.

While studies examining social capital and help-seeking with this population are sparse, there have been various efforts to understand the influence of social capital on behavior and general decision-making with agricultural producers. This is the basis of most research examining the social capital of agricultural producers. A study conducted by He et al. (2015) assessed the impact of social capital on farmers' willingness to adopt an environmentally-friendly agricultural practice. This study found that dimensions of social capital relating to trust, civic engagement, and the reciprocation of group norms were driving factors in farmers' decisions to reuse agricultural waste. Controlling for human and physical capital, this study provided evidence suggesting that social capital

had a statistically significant impact on farmers' willingness to reuse agricultural waste (He et al., 2015). While other literature examining the social capital of agricultural producers exists, the study performed by He et al. (2015) was among the few that examined this construct with American producers. Most studies focused on international producers' adoption of agricultural practices (Gallaher et al., 2013; Liu & Zhongbin, 2018; Musavengana & Simatele, 2016). These previous studies have all provided foundational support for studying social capital, behavior change, and help-seeking in a variety of forms. However, this research fails to account specifically for the population of interest. This gap in the literature pertaining to social capital and help-seeking intentions of agricultural producers in the U.S. provides promising support for this study, which seeks to fill that void.

Self-Stigma

The final construct to be investigated in this study relates to one of the most widely cited in regard to help-seeking resistance (Hobson, 2008). According to Corrigan (2004) stigma is one of the most inhibiting factors of help-seeking. A culmination of labels and stereotypes, the stigma surrounding mental health is the perception that disclosing mental health issues or identifying as an individual with mental illness is socially unacceptable (Vogel et al., 2006). The strengths and continual reinforcement of public stigma often lead individuals to self-stigmatize, or internalize socially-influenced perceptions.

Self-stigma as described in the literature, is deeply personal and tied to self-esteem, efficacy, and self-worth (Hobson, 2008). Individuals with high self-stigma think

that mental illness makes them unworthy or less than. Due to this stigma, it is not uncommon for individuals to conceal their illness and refuse help due to the fear, shame, etc. they self-associate with the label of being mentally ill (Corrigan, 2004). Kutcher et al. (2016) suggest that mental health literacy, or increasing awareness for mental health, can help destigmatize mental health. Without efforts like this, research shows that disorder denial and treatment resistance due to self-stigma can have harmful effects (Corrigan, 2004). A longitudinal study by Rusch et al. (2009) found that in individuals with serious mental illness, high self-stigma measured early in the study correlated with hospitalization later on. Thankfully, empirical evidence suggests that certain factors might counteract internalized stigma, breaking down barriers for help-seeking. Research from Lanfredi et al. (2015) found that higher measures of social capital negatively correlated with self-stigma.

Research examining stigma on mental health in individuals who have already self-identified as mentally ill is abundant, but a gap in the literature exists for examining the self-stigma of at-risk populations (Corrigan, 2004). The self-stigma of agricultural producers, specifically within the context of help-seeking is nearly nonexistent in the literature. As trends in deteriorating mental health within the agricultural community continue, understanding the degree to which these individuals have already internalized societal stigma has the potential to provide evidence for their help-seeking behavior in the future. Similarly, these measures could inform health promotion and communication strategies aimed at reducing stigma.

Justification and Relevance

Due to the intimate nature of societal influence on self-stigma and self-stigma on an individual's identity—and vice versa—there existed both support conceptually and theoretically in the literature to examine the relationship between social identity, social capital, and self-stigma. In the context of help-seeking behavior, these variables interweave and overlap in various ways, providing support for their simultaneous investigation. In light of the factors unique to U.S. agricultural producers that place them at increased risk for mental health problems and the recent growing support for advocacy and treatment within the industry, this research is both relevant and timely. From these findings, I have made recommendations for future policy and programming for mental health in the agriculture industry. Even more important however, is the potential this study has for changing the discourse as it currently relates to mental health in the agriculture industry. The goal for this study was to begin cultivating a community where agricultural producers experiencing mental health problems feel accepted and supported enough to seek help.

Theoretical Framework

This study utilized an integration of the Theory of Reasoned Action (TRA) and social identity theory as the theoretical framework. These theories helped provide a foundation for understanding individuals' intention to engage in certain behaviors from a social identity perspective.

Theory of Reasoned Action and Theory of Planned Behavior

According to the Theory of Reasoned Action, there are two main constructs that influence an individual's intent, and in turn, their resulting behavior (Fielding et al., 2008). These include attitudes and subjective norms. Each of these are influenced by various systems of belief. A commonly associated theory, Theory of Planned Behavior (TPB) is an extension of TRA, which includes a third determinant of intention called perceived behavioral control (Azjen, 1991). According to TPB, perceived behavioral control takes into consideration whether an individual believes he or she has complete control over that behavior (Fielding et al., 2008).

This study recognized the need for the inclusion of the third determinant, however, focused specifically on two of the three constructs presented in both models—attitude toward the behavior and subjective norms. According to Azjen (1991) attitudes refer to the degree to which an individual believes a certain behavior to be acceptable. Within the context of this study, attitudes toward help-seeking was measured through the degree of self-stigma held by agricultural producers regarding help-seeking. The second construct is subjective norms. In this construct, Azjen (1991) proposes that consideration of one's social environment and evaluation of input from influential people is a contributing factor to subjective norms. This study focused specifically on identifying those influential individuals' through a measure of agricultural producers' social identity and social capital.

Both TRA and TPB have been widely used and recognized as effective models for predicting and evaluating various determinants of health behavior and intention

(Fielding et al., 2008; Montano & Kasyrzyk, 2008). Several studies have been done to examine the success of TRA specifically in explaining variance in behavioral intention (Montano & Kasprzyk, 2008). Extensive research through reviews and meta-analyses have been performed to evaluate this claim and evidence is widely in support of the use of TRA as an effective predictive model of health behavior (Montano & Kasprzyk, 2008; Schomerus, 2008; Sheppard et al., 1988). The scope of these studies include health-service utilization, health promotion, preventative health behavior, and others (Montano & Kasprzyk, 2008). The importance of this model within the public health domain, and specifically within the context of this study, is that results and findings can be used to inform policy, identify intervention points, and develop effective strategies and programs for treatment and intervention (Montano & Kasprzyk, 2008). Further, this theory serves the overall aim of increasing intention as an outcome. This helps provide evidence to support recommendations for increasing intention of agricultural producers to seek help for mental health-related issues (Fielding et al., 2008; Montano & Kasprzyk, 2008).

Social Identity Theory

Most recently, scholars have noted the relevance of using social identity theory in conjunction with health behavior models (Fielding et al., 2008). Research performed by Terry and Hogg (1996) provided evidence for the influence of perceived group norms on intention relating to health-behavior, specifically when the individual reported strong group identification. Thus, social identity theory (Tajfel & Turner, 1979) was included as an extension of this framework, as a variable influencing each of the TRA predictor

variables. Social identity, in partial conjunction with social capital represented variables influencing agricultural producers' help-seeking intention and behavior relating to mental health.

Social identity theory posits that as highly social beings, individuals become invested in intergroup relationships that form their identity and influence their behavior (Tajfel & Turner, 1979). According to this theory, there are two steps in identity formation. The first is social categorization, in which individuals segment the world (Tajfel & Turner, 1979). The second is social identity, in which the individual claims their place within those groups and contextualize their sense of self in that membership (Tajfel & Turner, 1979). According to Tajfel and Turner (1979) individuals ascribe some sort of value and emotional significance to these memberships.

In fact, the importance placed on these social identities can have immense implications on individual and social behavior. Haslam et al. (2009) states that, "shared social identity can be seen as the basis for all forms of productive social interaction between people—including leadership, motivation, communication, cooperation, helping, trust, and organizations" (p. 8).

The social identity theory suggests that adhering to rigid identification within groups, people will act not as individuals, but according to the norms, behaviors, and beliefs of a certain group that are in opposition to the actions/beliefs of another group (Tajfel & Turner, 1979). Very simply put, this social behavior creates an in-group versus out-group belief system, to which behavior is modified. Similarly, identities are commonly associated as being positive or negative, with negative connotations

commonly being associated with out-groups, marking them as “unsatisfactory, underprivileged, or stigmatized” (Tajfel & Turner, 1979, p.35).

Identity Influencing Behavior. Tajfel & Turner (1979) states that individuals are especially resistant to ascribing to these stigmatized groups, because it creates the potential for rejection from a current in-group. Instead, individuals are prone to act in salient identity-congruent ways, to enhance perceived similarity within that group, especially when that identity is threatened (Oyserman & Destin, 2010). For example, research by Roy et al. (2017) found that both the construct of masculinity and traditional norms associated with farming impacted their stress-coping strategies when certain behaviors were deemed incompatible with farmer identity and agrarian society.

This study looked specifically at the relationship between agricultural producers’ social identity, social capital, self-stigma and their help-seeking behavior. To better understand the degree to which an individual identifies as an agricultural producer and the importance placed on this identity, measures of social identity and social capital were collected. These responses provided evidence for the salience of farmer identity and how it affected help-seeking behavior. Similarly, measures for agricultural producers’ self-stigma of seeking help assessed the degree to which these individuals perceive help-seeking as an identity-congruent behavior. Using the Theory of Reasoned Action and social identity theory, there is empirical evidence to support that group influence plays a substantial role in normative health-related behavioral intentions (Fielding et al., 2008). Through a social identity lens, I had the opportunity to assess dimensions of producer

identity, address and potentially reduce stigma, and identify intervention points for mental health education, communication and most significantly, treatment.

Purpose and Objectives

The purpose of this study was to better understand the relationship between social identity, social capital, and self-stigma and investigate how these variables effect the mental health help-seeking intentions of agricultural producers and the source from which they would seek help. The purpose of this study was achieved through the following objectives.

Research Objectives

O1: Describe the degree of help-seeking reported by agricultural producers.

O2: Describe scores for help-seeking sources reported by agricultural producers.

O3: Explain the difference between help-seeking intention among full-time, part-time, and hobby agricultural producers.

O4: Explain the relationship between social identity, social capital, and self-stigma in agricultural producers.

O5: Determine the effect of social identity, social capital, and self-stigma on help-seeking intention of agricultural producers.

> **O5.1** Determine the effect of social identity, social capital, and self-stigma on help-seeking intention of agricultural producers for personal or emotional problems.
>
> **O5.2** Determine the effect of social identity, social capital, and self-stigma on help-seeking intention of agricultural producers for suicide ideation.

CHAPTER III

METHODOLOGY

Research Design

Aimed at better understanding factors influencing help-seeking norms and behaviors of farmers and the relationships between those variables, this quantitative study was both descriptive and associational. Specifically, this study utilized survey research design. The independent variables were social identity, social capital, and self-stigma. Producers' intention of help-seeking for personal and emotional problems and thoughts of suicide, and the sources they would be most likely to turn to for help represent the dependent variables of the study.

Sample and Sampling Technique

This study utilized purposive sampling to target agricultural producers in the state of Texas between the ages of 18-89 years of age, using databases provide by Agriculture and Natural Resources (ANR) Extension agents in the West and East Texas AgriLife Regions.

Agricultural producers was operationally defined using the definition provided within 7 CFR 4284.902, the subpart of Title 7-Agriculture of the Code of Federal Regulations (U.S. Government Publishing Office [GPO], 2011). This document provides definitions and codes used for the classification of individuals and entities for legal purposes. The following definitions provided guidelines for the sample, but in this study, might be referenced as agricultural producers, producers, farmers, or ranchers.

Agricultural producer is defined as "An individual who is directly engaged in the production of an agricultural commodity, or who has the legal right to harvest an agricultural commodity…" (GPO, 2011, p. 970). Further, directly engaged is defined as "substantially participating in the labor, management of field operations themselves or by maintaining ownership and financial control of the agricultural operation" (GPO, 2011, p. 970).

While not exclusionary, working classification was also considered in this study (full-time, part-time, hobby). There are many potential classifications to which a producer could self-categorize and distinguishing factors are nuanced. To avoid confusions and limitations, I provided definitions for each category. For this study, a full-time agricultural producer was classified as an individual whose main occupation is agricultural production and who relies primarily on this work for their income. Part-time defined producers who hold additional employment and do not rely on production for primary income. Hobby producers were those who farm recreationally and do not rely on or account for this income.

Personal Characteristics

I collected demographics relating to gender, age, marital status, years working as a producer, occupational classification, and sector/commodity group. Items for the sector and commodity group were sourced from the National Agricultural Statistics Service (NASS) (2018). Of the respondents (n=300), 218 males and 79 females responded to the survey. Three participants preferred not to identify their gender.

The majority of respondents who indicated their age (*n*=235) were 65 years of age or older, but an overall breakdown of ages can be found in Table 1. The youngest participants were between the ages of 25-44 years of age.

Table 1

Age of sample (n=235)

Items	Frequency	%
65 years and over	105	44.7
45-64 years	99	42.1
18-44 years	31	13.1
25-44 years	31	13.2
18-24 years	0	0

Of those participants who reported marital status (*n*=299), 79.6 percent of participants were married, 8.0% were single, 7.0 % were divorced and the remaining 5.4% were widowed.

Participants were also asked questions pertaining to the number of years working as an agricultural producer and their occupational classification. Of the respondents, 77.2 percent had worked 11 years or more (*n*=298) and the majority reported their occupational classification as part-time (*n*=344). These personal characteristics are represented in Table 2 and Table 3.

Table 2

Number of years working as an agriculture producer (n=298)

Items	Frequency	%
11 years or more	230	77.2
5 years or less	31	10.4
6-10 years	27	9.1
None	10	3.4

Table 3

Occupational classification (n=344)

Items	Frequency	%
Part-time	187	54.4
Full-time	85	24.7
Hobby	72	20.9

The final demographic variable investigated was the sector and commodity group of the sample (*n*=429). The top livestock or livestock products reported by producers was cattle and calves (*n*=223) and goats (*n*=40). The majority of crops produced was hay or haylage (*n*=153) and wheat (*n*=43). A complete description of the identified commodity production represented within the sample is shown in Table 4.

Table 4

Sector/commodity group of sample (n=429)

Items	Frequency	%
Livestock or Livestock Products		
Cattle and calves	223	52.0
Other(s) not listed	52	12.1
Goats	40	9.3
None	27	6.3
Sheep	23	5.4
Layers	19	4.4
Hogs	9	2.1
Dairy (cattle, goats)	7	1.6
Turkeys	2	0.5
Crops		
Hay, Haylage	153	35.7
None	75	17.5
Wheat	43	10.0
Other(s) not listed	33	7.7
Cotton	22	5.1
Corn	16	3.7
Beans	15	3.5
Melons	15	3.5
Peppers	16	3.7
Pecans	15	3.5
Plants and foliage	15	3.5
Potatoes	14	3.3

Table 4 Continued

Items	Frequency	%
Crops Continued		
Cucumber	13	3.0
Oats	13	3.0
Sorghum	13	3.0
Squash	13	3.0
Spinach	9	2.1
Grapes	8	1.9
Peaches	8	1.9
Carrots	7	1.6
Sunflower	7	1.6
Cabbage	6	1.4
Pumpkins	4	0.9
Rice	2	0.5
Soybeans	2	0.5

This data is consistent and representative of Texas agriculture, as provided by the NASS (2018). Texas relies most prominently on cattle production. Further, hay, haylage, and wheat production are represented within the top five crops by value of production in dollars for the state (NASS, 2018).

Instrumentation and Measurements

I developed a cross-sectional survey to be used as the instrument for this study. I designed the survey to be completely anonymous, with the exception of contact information posted at the end, should the respondent wish to be eligible for the incentive

(Dillman et al., 2014). To decrease reluctance to respond, I did not collect sensitive medical information related to mental health history and asked only for personal characteristics including year of birth, gender, industry affiliation, number of years farming and occupational classification (Dillman et al., 2014). In addition to this construct for personal characteristics, my instrument measured five variables. These included social identity, social capital, self-stigma, likelihood of seeking help and preferred helping agent. Pre-existing scales for all constructs were adapted for use in the instrument. These scales included the Collective Occupational Identity Construct (COIC), Personal Social Capital Scale (PSCS), Self-Stigma of Seeking Help Scale (SSOSH), and the General Help-Seeking Questionnaire (GHSQ).

Collective Occupational Identity Construct

Social identity theory proposes that one's sense of self is often influenced or contextualized within a collective group(s) to which they belong (Haslam et al., 2009). Furthermore, this construction of identity often holds several implications for underlying motivations and behaviors (Fielding et al, 2008; Haslam et al., 2009; Oyserman & Destin, 2010). To better understand the influence of identity on the construction of help-seeking norms and behaviors in regard to mental health, it is important to first measure the extent to which individuals identify as being part of the larger social group of agricultural producers. For this study, farmers' social identity will be measured using an adaptation of the COIC.

The COIC was derived from Ashmore et al.'s (2004) Collective Identity Construct (CIC)—a highly-referenced instrument for measuring seven dimensions of

collective identity (Groth et al., 2017). However, because this scale had never been used in the context of farming or agriculture, Groth et al. (2014) performed research to develop an alternative instrument and assess its validity and reliability. The resulting COIC is a 12-item scale developed by Groth et al., (2016) to measure the degree to which an individual identifies as an agricultural producer. It has been used in domestic and international settings, specifically in farmer populations. The instrument has been tested for construct and content validity and found to be valid. Additionally, the COIC was found to be reliable with a Cronbach alpha of .935 (n = 754) (Groth et al., 2017). This adapted scale included nine Likert-type items from the COIC. Multiple adaptations of the COIC, ranging from 12-15 items, have been used within the farming context (Groth et al., 2014; Groth et al., 2016; Groth et al., 2017). In these scale variations, nine items were consistently used in coordination with other items to account for additional dimensions (Groth et al., 2014; Groth et al., 2016; Groth et al., 2017. These nine items were found to measure dimension consistent with four of the six dimensions in the COIC (self-categorization, evaluation, importance, attachment and sense of interdependence) (Groth et al., 2017). An additional three questions were added to address the remaining dimensions (social embeddedness and behavioral involvement) to ensure consistency with the foundational instrument and relevancy to the scope of this study (Groth et al., 2017).

Personal Social Capital Scale

To measure social capital of agricultural producers, four items were adopted from the Personal Social Capital Scale (Chen et al., 2009). The scale was previously

developed for quantitative survey research, specifically within the health and behavioral sciences (Chen et al., 2009). The previously developed scale was found to demonstrate adequate reliability and internal consistency (Chen et al., 2009). The four adopted items from the Personal Social Capital Scale resulted in a construct, which was deemed a reliable measure ($\alpha = 0.94$) for routine social connections, perceived trustworthiness, reliability of contacts, and assets or resources of network (Chen et al., 2009). Within the four questions, I used nine items for respondents to rate on a 5-anchor, Likert scale. Answers range from 1 (*None*) to 5 (*All*). An example question was, "With how many people in each of the following categories do you keep a routine contact?" Items for consideration included, immediate family members, other relatives, people in your local community, your friends, your coworkers/employees, Extension Agent, Extension Specialist, other agricultural producers (farmers, ranchers, etc.), and others in agriculture industry (salesman, service technicians, insurance, etc.). Respondents were also able to choose "others not listed" and self-report others within their social network.

Self-Stigma of Seeking Help

To further understand if and how farmers internalize perceived social stigma, a measure for self-stigma was included in the instrument. This was achieved by integrating Vogel et al.'s (2006) Self-Stigma of Seeking Help (SSOSH) scale. This scale includes 10 items, prompting respondents to score each statement from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Higher scoring on this scale suggests greater perceptions of personally-held or internalized stigma. Instrument developers have performed extensive tests for validity and reliability. Vogel et al. (2006) reported an internal consistency of

.91 (N=583) and data supporting a unidimensional factor solution. This data suggests that the SSOSH is adequately reliable and appears to measure a single construct (Vogel et al., 2006).

General Help-Seeking Questionnaire

The scale deemed most appropriate for help-seeking within the context of the study was the GHSQ. This scale not only measured intention of seeking help-seeking in general, but also investigated the degree to which an individual would seek help from various sources (Wilson et al., 2005). This GHSQ is a 34-item, 7-anchor scale, where 1 represents *Extremely Unlikely* and 7 represents *Extremely Likely*. This scale warrants a score for each item, with higher values representing a greater intention of seeking help from various agents. To allow for a broader application of this scale, instrument developers recommended tailoring the scale to include items relevant to the intended sample Wilson et al. (2005). I capitalized on this recommendation and integrated agricultural-based helping agents into the scale for comparison purposes.

As with any scale, there were limitations to using the GHSQ. However, Wilson et al. (2005) reported that the scale demonstrated adequate test-retest reliability and internal consistency measures. In addition, scores from the GHSQ, single item measure of intention were positively correlated with perceived quality of past treatment interventions in individuals who identified as having mental health-related issues (Wilson et al., 2005). The scores also correlated negatively with perceived barriers to help-seeking, providing support for convergent and divergent validity (Wilson et al., 2005).

The adapted version of this scale utilized the two main questions or items, each with fourteen sub-items underneath. The primary items asked questions pertaining first to help-seeking for personal or emotional problems, and second to help-seeking for thoughts of suicide. The sub-items represented examples of helping agents or people these individuals might turn to (e.g. friend, mental health professional, religious leader, etc.). Participants rated each from 1 (*Extremely unlikely*) to 5 (*Extremely likely*). Within these sets of fourteen items, twelve will be scored and potentially coded for analysis.

Data Collection Procedures

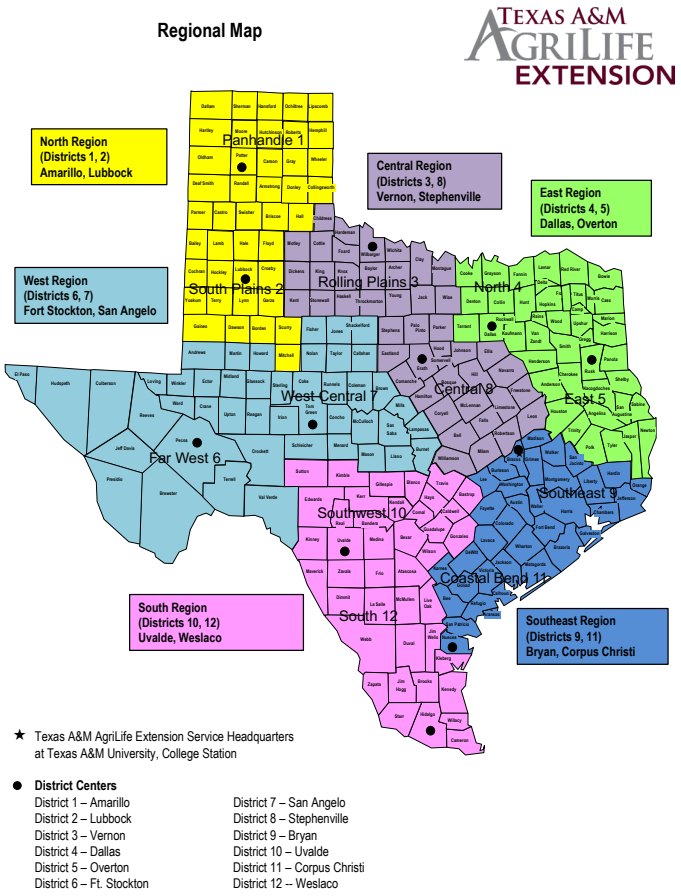
The instrument was developed in Qualtrics and administered electronically to potential participants via Texas AgriLife Extension Service. To increase response rate, I adhered to Dillman et al.'s (2014) tailored design method to for preparation, implementation, and follow-up.

Partnership with Texas AgriLife Extension Service

In an attempt to control survey error for nonresponse, prior to survey administration, I contacted Texas AgriLife Extension to solidify partnership with Regional Program Leaders (RPL) in the Agriculture and Natural Resources (ANR) program units (Dillman et al., 2014). Given the sensitive nature of my topic, I wanted my survey to be administered through a source my potential respondents deemed credible and trustworthy. RPLs were located in the West and East regions of Texas, shown in Figure 1 (Texas A&M AgriLife Extension Director's Office, n.d.).

Figure 1

Texas A&M AgriLife Extension Regional Map (Texas A&M AgriLife Extension Director's Office, n.d.)



Prior to survey administration, I corresponded with the two RPLs over email/phone to prep them for survey distribution and obtain the email listserv of ANR extension agents for both regions. During this time, the RPLs contacted their extension agents, both in person and via email, to encourage cooperation, per Dillman et al.'s (2014) recommendation for mixed-modal data collection to reduce survey error. I then made initial contact with the extension agents in an email that can be found in Appendix

J. In this email, I provided agents with information about the potential impact of these survey results within their communities—to garner their support (Dillman et al., 2014). Following initial contact, protocols were sent to both RPLs and extension agents with information regarding survey distribution.

On each day of distribution, I sent extension agents the appropriate recruitment email(s), which can be found in Appendix M, along with a subsequent reminder the same day to forward on the email. In the recruitment email, I made sure to again richly describe the impact of survey results within their communities and specifically name the study's sponsorship with Texas AgrilLife Extension (Dillman et al., 2014). To establish trust with potential respondents, I also provided my personal contact information should anyone have any questions or concerns about my survey (Dillman et al., 2014). By the close of my survey, I had spoken with three respondents over the phone and one via email to address questions and concerns.

To further help control survey error for nonresponse, I also included an incentive—two, $100 gift cards sponsored by Montgomery County Farm Bureau. In the last few recruitment emails, conveyed that others had already responded and brought attention to the limited time left to respond (Dillman et al., 2014). Upon forwarding the email to their producer contacts, the extension agents were instructed to respond to me with the number of emails sent and to include a count for undelivered emails—should any have occurred. Per Dillman et al.'s (2014) tailored design method, in total, five points of contact were made with potential participants.

In total, county ANR Extension Agents from 32 Texas counties sent recruitment emails to 5,137 potential participants via email. Of those 32 counties, 75% (n=24) are designated as rural counties, according to the Texas Department of State Health Services (2013). Of those 5,137 emails, 92 were undeliverable, resulting in a population of 5,045. Of those 5,045 potential participants, I achieved a sample size of 429 participants, equating to a response rate of 8.50%. To control for nonresponse error, I compared early to late respondents and found no statistically significant differences in their responses (Linder et al., 2001). Thus, I was able to confirm the generalizability of my responses to the population of Texas agricultural producers.

In total, 39 respondents did not self-report as agricultural producers. However, when given the opportunity to self-describe involvement in the industry, 19 of those 39 descriptions aligned with the utilized definition of agricultural producer and were recoded as such. Because I did not find the remaining 20 answers to be statistically significantly different from the remaining respondents, I did not exclude them from analysis.

Data Analysis

To begin data analysis, I exported responses from Qualtrics and used the statistical platform SPSS for data analysis.

Validity and Reliability

I achieved content validity through collaboration with committee members and discussion with other agriculturalists and extension practitioners. Upon completion of

data analysis, reliability was confirmed using Cronbach's alpha (Cronbach, 1951). The reliability of each scale can be found in Table 5.

Table 5

Reliability of constructs

Scales	α	N of items
Personal Social Capital Scale (PSCS)	0.94	38
General Help-Seeking Questionnaire (GHSQ)	0.89	28
Self-Stigma of Seeking Help (SSOSH)	0.86	10
Collective Occupational Identity Construct (COIC)	0.82	11

With an overall Cronbach alpha levels of .94 (PSCS), .89 (GHSQ), .86 (SSOSH), and .82 (COIC) I judged all scales within the instrument to be reliable measures. This study did not violate any of the nine threats to internal validity (Fraenkel et al., 2019). This indicated to me that these threats did not compromise results from the data analysis.

Data Analysis Procedures

After ensuring reliability of the instrument, I checked for nonresponse error and found no significant difference between early and late responders (Linder et al., 2001). I then completed multiple rounds of data analysis. First, I performed a preliminary descriptive analysis on general demographic information and construct responses. Frequencies and percentages were calculated for gender, age, marital status, number of years working as an agricultural producer, occupational classification, and sector/commodity group of the sample. Next, I ran descriptive statistics for each construct and recorded means and standard deviations and some frequencies and

percentages for the COIC (Groth et al., 2017), PSCS (Chen et al., 2009), SSOSH (Vogel et al., 2006), and the GHSQ (Wilson et al., 2005).

To address objectives one and two, survey responses were analyzed using descriptive statistics. This allowed me to report frequencies and percentages for demographic data and responses within each of the instrument's constructs. To better understand distribution of the data, means and standard deviations for demographics, and each of the variables were also calculated. This statistical analysis provided richer information about the data.

To address objective three, I used Pearson's *r* to statistically analyze the relationships between multiple variables. Pearson's *r* is used describe bivariate relationships when both variables are intervally-scaled, which was appropriate for this study (Thompson, 2006). A correlation for social identity, social capital, self-stigma, and intention was calculated. In conjunction with the previous statistical tests, these correlational coefficients helped me better understand the relationships between each of the variables and how they interacted.

To address objective four, I performed two multiple linear regression. According to Coolidge (2013), a multiple regression analysis is used to investigate how one variable changes as a result of other variables. Because there are more than two variables being tested, I ran multiple regression analyses, as opposed to simple linear regressions. This information helped me understand the predictive capability of each independent variable—social identity, social capital, or self-stigma—on agricultural producers' intention to seek help for 1) personal or emotional problems and 2) thoughts of suicide.

Study Limitations

While I confirmed reliability and took steps to mitigate threats to internal validity, other study limitations existed. First, the study utilized self-reported data, which can introduce potential error (Althubaiti, 2016). In addition, while my sample was purposive, it was limited to those within that sample I had access to through Texas AgriLife Extension. Because my sample was restricted to agriculturalists in the East and West ANR Regions in Texas, future researchers should consider repeating this study statewide to get a more representative sample. Also, because this population was limited to Texas, future studies should be conducted nationwide, or at the least, in other states.

Additionally, in order to access my population and increase survey response according to Dillman et al. (2014), I administered my survey through Extension Agents in each of these regions, whom I had access to through the Regional Program Leaders. This three-step hierarchy created potential for confusion and ultimately lessened the amount of direct control I had over distribution. However, to control for potential error, I developed a strict and regimented survey distribution protocol, which I provided to extension agents, prior to survey administration. This can be found in Appendix K. While it was not an option, in the future, it would be ideal to keep distribution under the sponsor name for credibility but have immediate access to producer contact information to ensure precise adherence to survey protocol, control administration and further eliminate any potential error.

In addition, administering the survey link through email created a potential barrier for respondents' who do not have regular access to internet, routinely check their email, or those who do not possess the basic technological knowledge and skills to

access and maneuver through the survey. This limitation was brought to my attention after a few phone calls I received from two older, male respondents who expressed desire to answer my survey, but requested assistance finding the link in the email and accessing the survey. I was able to direct them to email in their inbox and help them find the link. After ensuring they understood the information sheet and the consent process, I helped them understand some basic technological skills to aid them in completing the survey, should they choose to participate (accessing the attached information sheet in PDF format, clicking directly on the link in their email which would open a new screen, using the red arrows in the righthand corner of the screen to navigate the survey questions, etc.). Given that a majority of my respondents were over 65 years of age, basic working knowledge and competency in technology might have made it more difficult or inhibited them from completing the survey.

CHAPTER IV

RESULTS AND FINDINGS

This chapter discusses statistical results and findings from the study. Before addressing results from each objective, I share overall results and findings from each construct within the instrument. Results for social identity or collective identity, represented by the COIC, social capital, represented by the PSCS, and self-stigma, represented by the SSOSH are published in the following tables.

Descriptive Results from COIC

The descriptive statistics from the Collective Occupational Identity Construct (COIC) (Groth et al., 2017) can be seen in Table 6. Collectively, the overall mean for social identity of agricultural producers within this sample (n = 355) was high (M = 4.68, SD = 0.75).

Table 6

Descriptive statistics from COIC

Items	*n*	*M*	*SD*
In general, I'm glad that I'm an agricultural producer.	354	5.32	1.01
I very much identify with agricultural producers in my area.	351	5.01	1.04
What happens to agricultural producers as a whole will have an effect on what happens in my life.	350	4.84	1.07
Being a part of the larger group of agricultural producers is an important reflection of who I am.	350	4.62	1.22
I have a strong sense of belonging or attachment to other agricultural producers.	350	4.58	1.17
In general, others respect agricultural producers.	348	4.57	1.07
When someone criticizes agricultural producers, it feels like a personal insult.	349	4.56	1.35
My agricultural production activities distinguish me from those who are not agricultural producers.	351	4.48	1.27
I consider myself to be a typical agricultural producer in this area.	351	4.26	1.31
My regular social contacts and social relationships are with other agricultural producers.	349	4.20	1.16

Note. Participants scored statements from *1 =Not applicable, 2= Strongly Disagree, 3=Disagree, 4=Neutral, 5=Agree, 6 = Strongly Agree*

Descriptive Results from PSCS

The descriptive statistics from each item in the Personal Social Capital Scale (PSCS) (Chen et al., 2009) are listed in the Tables 7, 8, 9, and 10. A description of

subitems within this construct will be discussed in greater detail throughout the paper. Overall however, the overall mean for responses within this construct for agricultural producers in this sample were relatively low ($M = 2.73$, $SD = 0.56$). Because anchors in this scale were reverse coded, a lower mean represented a higher social capital score. So while the mean appears low, the social capital of agricultural producers in this sample was relatively high.

Table 7

How many of the people in each of the following categories do you keep in routine contact?

Items	*n*	*M*	*SD*
Your immediate family members	345	1.67	.928
Your friends	346	2.38	.812
Your relatives	345	2.62	.888
People in your community	345	2.83	.718
Your coworkers/employers/employees	337	2.83	1.326
Other agricultural producers	344	2.94	.812
Extension Agent	344	3.35	1.135
Others in the agriculture industry (sales representatives, service technicians, insurance, etc.)	344	3.43	.907
Others not listed	317	3.77	1.020
Extension Specialist	341	3.79	1.007

Note. Participants scored each item from *1=All, 2=Most, 3=Some, 4=Few, 5=None*. A lower mean represented a higher social capital score.

Table 8

Among the people in each of the following categories, how many can you trust?

Items	*n*	*M*	*SD*
Your immediate family members	336	1.64	.96
Your friends	336	2.03	.88
Extension Agent	326	2.11	1.11
Your relatives	335	2.26	.99
Extension Specialist	320	2.36	1.23
Other agricultural producers	329	2.52	.88
People in your community	337	2.68	.83
Your coworkers/employers/employees	321	2.70	1.23
Others in the agriculture industry (sales representatives, service technicians, insurance, etc.)	333	2.83	.97
Others not listed	288	3.59	1.23

Note. Participants scored each item from *1=All, 2=Most, 3=Some, 4=Few, 5=None*. A lower mean represented a higher social capital score.

Table 9

Among the people in each of the following categories, how many will definitely help you upon your request?

Items	*n*	*M*	*SD*
Your immediate family members	333	1.70	1.024
Your friends	331	2.17	.986
Your relatives	333	2.34	1.054
Extension Agent	325	2.35	1.182
Extension Specialist	317	2.60	1.253
People in your community	333	2.66	.908
Other agricultural producers	329	2.68	.980
Other agricultural producers	329	2.68	.980
Others in the agriculture industry (sales representatives, service technicians, insurance, etc.)	326	3.03	1.043
Others not listed	271	3.66	1.242

Note. Participants scored each item from *1=All, 2=Most, 3=Some, 4=Few, 5=None*. A lower mean represented a higher social capital score.

Table 10

When people in all the following categories are considered, how many possess the following assets/resources?

Items	*n*	*M*	*SD*
With high school or more education	311	2.24	.870
With agriculture experience	312	2.60	.839
With a professional job	309	2.68	.809
High reputation/influential	308	2.98	.918
Broad connections with others	311	2.99	.871
Wealth or owners of an enterprise or company	311	3.25	.888
Certain political power	315	3.46	.991
With mental health education	307	3.76	.968

Note. Participants scored each item from *1=All, 2=Most, 3=Some, 4=Few, 5=None*. A lower mean represented a higher social capital score.

Descriptive Results from SSOSH

Table 11 provides descriptive statistics for participant responses on the Self-Stigma of Seeking Help (SSOSH) scale (Vogel et al., 2006). Given that the maximum anchor one the scale was represented by a 5, self-stigma within this group of agricultural producers (n = 323) was relatively low (M = 2.59, SD = 0.76). However, the overall calculated mean also fell close enough to the neutral anchor that further conclusions about the degree of self-stigma held by agricultural producers cannot be made.

Table 11

Descriptive statistics of Self-Stigma of Seeking Help (SSOSH)

Items	*n*	*M*	*SD*
I would feel okay about myself if I made the personal choice to seek professional help.	319	3.51	1.141
My self-confidence would NOT be threatened if I sought professional help.	323	3.39	1.269
My self-confidence would remain the same if I sought professional help for a problem I could not solve.	320	3.39	1.161
My view of myself would not change just because I made a choice to see a therapist.	321	3.35	1.141
I would feel inadequate if I went to a therapist for psychological help.	323	2.68	1.193
My self-esteem would increase if I talked to a therapist.	323	2.63	.963
I would feel worse about myself if I could not solve my own problems.	320	2.54	1.226
It would make me feel inferior to ask a therapist for help.	321	2.42	1.168
If I went to a therapist, I would be less satisfied with myself.	319	2.33	1.125
Seeking psychological help would make me feel less intelligent.	323	2.23	1.142

Note. Participants scored each item from *1=Strongly Disagree, 2=Disagree 3=Agree & Disagree Equally, 4=Agree, 5=Strongly Agree*

Results from Objective One

Objective one aimed to describe the degree of help-seeking reported by agricultural producers. In order to achieve this objective, I calculated a grand mean for both questions within the help-seeking construct. This resulted in a statistical mean of responses (n=312) for help-seeking intention for both personal or emotional problems (M = 3.77, SD = 0.95) and responses (n = 296) for suicidal thoughts (M = 3.53, SD = 1.24). On the provided scale, these fell between anchors 3 and 5, where 3 was labeled as *Unlikely* and 5 was labeled *Likely*. According to the scale provided, narratively, these means fell between the statement *Unlikely*, and the most neutral anchor, which the creators of the original scale left unlabeled. Another important finding from this objective was the difference in means. While only slightly, the statistical mean for help-seeking for personal or emotional problems was greater than the mean calculated for help-seeking for suicidal thoughts.

Results from Objective Two

For objective two, I described scores for help-seeking sources reported by agricultural producers.

Help-Seeking Sources for Personal or Emotional Problems

Responses for help-seeking for a personal or emotional problem and suicide are listed in Table 12.

Table 12

Descriptive statistics from "If you were having a personal or emotional problem, how likely is it that you would seek help from the following people?"

Items	*n*	*M*	*SD*	*Median*	*Mode*
Intimate partner (girlfriend, boyfriend, husband, wife, de' facto)	309	5.50	1.85	6.00	7
Friend (not related to you)	311	4.70	1.54	5.00	5
Other relative or family member	310	4.45	1.67	5.00	5
Minister or religious leader (e.g. Priest, Rabbi, Chaplain, Church leader)	311	4.41	1.94	5.00	5
Doctor/General Practitioner	308	4.31	1.69	5.00	5
Mental health professional (e.g. psychologist, social worker, counselor)	310	3.96	1.74	4.00	3
Fellow agricultural producer (e.g. farmer, rancher)	308	3.61	1.65	4.00	3
Neighbor or community member	309	3.26	1.58	3.00	3
I would not seek help from anyone	305	3.21	1.89	5.00	7
I would seek help from other(s) not listed above	285	2.94	1.87	3.00	1
County Extension Agent	308	2.86	1.71	3.00	1
County Extension Specialist	309	2.72	1.67	3.00	1
Public Health Department	309	2.60	1.50	2.00	1
Phone helpline (e.g. Lifeline)	310	2.54	1.67	2.00	1

Note. Participants scored items from 1-7. Anchors were labeled as *1=Extremely Unlikely, 3=Unlikely, 5=Likely, 7=Extremely Likely*

As shown, the top three sources identified by the sample as being the most likely to be sought out when experiencing personal or emotional problems were *intimate partner (girlfriend, boyfriend, husband, wife, de' facto)* (*M*= 5.50, *SD* = 1.85), *Friend (not related to you)* (*M* = 4.70, *SD* = 1.54), and *Other relative or family member* (*M*=4.45, *SD* = 1.67). The items that received the lowest means were *County Extension Specialist* (*M*=2.72, *SD* = 1.67), *Public Health Department* (*M*=2.60, *SD* = 1.50) and *Phone Helpline* (*M*=2.54, *SD* = 1.67).

Help-Seeking Sources for Suicidal Thoughts

Unlike the first question which asked about likelihood of help-seeking for personal and emotional problems, the second question on the GHSQ asked about sources one would be likely to seek help from if they were experiencing suicidal thoughts. Responses pertaining to the second question in the General Help Seeking Questionnaire (GHSQ) (Wilson et al., 2005) were somewhat shocking. Similar to the first question, participants scored *Intimate partner (girlfriend, boyfriend, husband, wife, de' facto)* (*M* = 5.06, *SD*, = 2.26) the highest, as seen in Table 13. Within the item for suicidal thoughts, agricultural producers scored *Minister or religious leader (e.g. Priest, Rabbi, Chaplain, Church leader)* (*M* = 4.43, *SD* = 2.20) and *Mental health professional (e.g. psychologist, social worker, counselor*) (*M* = 4.36, *SD* = 2.07) high enough to grant them the second and third largest mean. According to the scale provided, these means fell between anchor statements 4 and 5, where 4 was the midpoint of the scale and 5 indicated that intention was *Likely.*

Of all items*, Public Health Department*, *County Extension Agent and County Extension Special*ist received the lowest means for help-seeking for suicidal thoughts, all of which were under 3.00, the anchor represented by *Unlikely* on the scale.

Table 13

Descriptive statistics from "If you were experiencing suicidal thoughts, how likely is it that you would seek help from the following people?"

Items	*n*	*M*	*SD*	*Median*	*Mode*
Intimate partner (girlfriend, boyfriend, husband, wife, de' facto)	292	5.06	2.25	6.00	7
Minister or religious leader (e.g. Priest, Rabbi, Chaplain, Church leader)	292	4.43	2.20	5.00	7
Mental health professional (e.g. psychologist, social worker, counselor)	292	4.36	2.07	5.00	7
Friend (not related to you)	292	4.35	2.08	5.00	5
Doctor/General Practitioner	289	4.27	1.99	5.00	5
Other relative or family member	293	4.15	2.09	5.00	5
I would not seek help from anyone	280	3.17	2.12	5.00	7
Phone helpline (e.g. Lifeline)	293	2.85	1.95	3.00	1
Neighbor or community member	290	2.84	1.80	3.00	1
Fellow agricultural producer (e.g. farmer, rancher)	292	2.74	1.73	3.00	1
I would seek help from other(s) not listed above	262	2.58	1.88	2.00	1
Public Health Department	290	2.42	1.63	2.00	1
County Extension Agent	293	2.18	1.61	1.00	1
County Extension Specialist	289	2.07	1.54	1.00	1

Note. Participants scored items from 1-7. Anchors were labeled as *1=Extremely Unlikely, 3=Unlikely, 5=Likely, 7=Extremely Likely*

"I Would Not Seek Help from Anyone"

The final item necessary to isolate is the item *I would not seek help from anyone.* While I did not use this as a single-item assessment of intention, independently analyzing the unit is valuable for understanding overall help-seeking intention for personal or emotional problems ($M = 3.21$, $SD = 1.89$) or thoughts of suicide ($M = 3.17$, $SD = 2.12$). On the provided Likert-scale, these means fell slightly above the third anchor, represented narratively by the statement *Unlikely.*

Attention to Overall Scores

While it serves to emphasize the highest and lowest means reported by producers and relatively report help-seeking sources, it would be negligent to not also draw attention to the range of overall means reported. On the GHSQ, participants scored each potential help-seeking source on a scale of 1 (*Extremely Unlikely*) to 7 (*Extremely Likely*), where 5 represented *Likely*. In both items—for personal and emotional problems and suicidal thoughts—none of the means exceeded 5.50. Only one item exceeded 5.0, the anchor narratively labeled *Likely*.

Results from Objective Three

Objective three intended to explain the difference in help-seeking intention for personal or emotional problems and for thoughts of suicide based on occupational classification. To achieve this objective, I ran a one-way ANOVA. An analysis of variance showed that the effect of occupational involvement on help-seeking intention for personal or emotional problems was not significant $F(0.82, 0.94) = 1.30$, $p = .07$. Similarly, an analysis of variance showed that the effect of occupational involvement on

help-seeking intention for thoughts of suicide was not significant $F(103, 188) = 1.01$, $p = .47$).

Results from Objective Four

Through objective four, I sought to better understand the relationship between independent variables. To address this object, I conducted a Pearson's r correlation. Results from that test are listed in Table 14. According to the data, means for collective occupational identity displayed a negative, moderate association with scores for personal social capital (Davis, 1971). According to the regression model, as social identity—measured by the COIC (Groth et al., 2017)—increased, means for social capital—measured by the PSCS (Chen et al., 2009)—decreased. However, it is important to note that using the anchored labels in the PSCS (Chen et al., 2009), lower means represent a larger social capital. I determined that correlations for self-stigma were not significant with either collective occupational identity or personal social capital. From this data, I cannot assume a relationship between self-stigma and either of the other two variables using the SSOSH scale.

Table 14

Pearson Correlation for Analysis of Relationship Among Independent Variables.

		Social Identity	Social Capital	Self-Stigma
Social Identity	Pearson Correlation	1	-.33**	.06
	Sig. (1-tailed)		.000	.13
	N	355	346	323
Social Capital	Pearson Correlation	-.33**	1	.02
	Sig. (1-tailed)	.00		.34
	N	346	347	323
Self-Stigma	Pearson Correlation	.06	.02	1
	Sig. (1-tailed)	.13	.34	
	N	323	323	323

Note. Correlation is significant at the 0.01 level (1-tailed).

Results from Objective Five

Objective five aimed to predict help-seeking intention using measures for social identity, social capital, and self-stigma. For achieve this, I conducted a multiple linear regression to examine the predictive capabilities of these three independent variables on help-seeking intention for both personal and emotional problems and for thoughts of suicide.

Multiple Linear Regression for Personal or Emotional Problem Help-Seeking

The coefficients for each variable and its predictive influence on help-seeking for personal and emotional problems can be found in Table 15.

Table 15

Analysis of multiple regression results of independent variables on help-seeking for personal or emotional problems

	Unstandardized Coefficients		Standardized Coefficients		
Model	*B*	Std. Error	Beta	t	Sig.
(Constant)	6.29	.49	22.02	12.68	.01
Social Identity	.04	.07	.03	.55	.58
Social Capital	-.65	.09	-.38	-7.10	.00
Self-Stigma	-.36	.06	-.29	-5.76	.00

I utilized a multiple linear regression and found a statistically significant relationship between help-seeking for personal or emotional problems and social capital, and self-stigma ($F(3, 308) = 31.80$, $p = .01$, $r^2 = .24$). As displayed, the data suggests that coefficients for personal social capital and self-stigma were statistically significant ($p = .001$). According to this model, self-stigma and social capital had a significant negative effect on help-seeking for personal or emotional problems. A multiple linear regression is Y= a + bX. Help-seeking for personal or emotional problems = 6.29 + (-.29). Therefore, as a unit of self-stigma increases, help-seeking intention for personal or emotional problems decreases. Help-seeking for personal or emotional problems = 6.29 + (-.38). As measured by the PSCS, as a unit for social capital increases, help-seeking

intention for personal or emotional problem decreases. Again, it is important to note that in accordance with the PSCS, higher means on the scale represented lower overall social capital. I found the coefficients for social identity were not statistically significant (p = .58).

Multiple Linear Regression for Suicide Ideation Help-Seeking

I conducted a second multiple linear regression to test the effect of social identity, social capital, and self-stigma on help-seeking for suicidal thoughts. The data from this statistical test are displayed in Table 16. These results were similar to those presented above. I found a statistically significant relationship between help-seeking for thoughts of suicide and social capital, and self-stigma ($F(3, 291) = 16.42$, $p = .01$, $r^2 = .15$).

Table 16

Analysis of multiple regression results of independent variables on help-seeking for suicidal thoughts

	Unstandardized Coefficients		Standardized Coefficients		
Model	*B*	Std. Error	Beta	t	Sig.
(Constant)	6.60	.70		9.43	.01
Social Identity	-.06	.09	-.04	-.61	.55
Social Capital	-.80	.13	-.36	-6.24	.01
Self-Stigma	-.24	.09	-.15	-2.71	.01

According to this model, self-stigma and social capital both had significant negative effects on help-seeking intention for suicidal thoughts. The multiple linear

regression is: help-seeking for suicidal thoughts = 6.60 + (-.15). This regression showed that as a unit of self-stigma increased, help-seeking intention for suicidal thoughts decreased (-.15). The multiple linear regression is: help=seeking for suicidal thoughts = 6.60 + (-.36). As a unit for social capital, as measured by the PSCS, increased, help-seeking intention for personal or emotional problem decreased (-.36). Again, it is important to note that in accordance with the PSCS, higher means on the scale represented lower overall social capital.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, & RECOMMENDATIONS

We will work to remove obstacles and give farmers, ranchers, foresters, and producers every opportunity to prosper and thrive. – U.S. Secretary of Agriculture, Sonny Perdue (2018).

In this chapter, I provide conclusions based upon results gathered from objectives one through five and discuss the implications of these findings and provide recommendations for researchers and practitioners. Based on the following conclusions, I developed recommendations for policymakers, practitioners, local community leaders, and future researchers to help address the mental health of production agriculturalists. It is my hope that with these recommendations, we, as members of the agricultural community, can contribute building a network of resources and fostering a support system which encourages healthy and proactive help-seeking behaviors. I recognize that this widespread issue will not be solved overnight—nor will it be solved, by these recommendations alone. They are a step, however, toward breaking down barriers faced by production agriculturalists struggling with their mental health.

Objective One

Objective one enabled me to describe the degree of help-seeking reported by agricultural producers. The findings from the first objective, which suggests that help-seeking intention produced overall means between 3.53—for suicidal thoughts—and 3.77—for personal or emotional problems—led me to a few conclusions about the data.

From this data, I concluded that participants in this sample are not necessarily likely, nor unlikely to seek help, regardless of whether it is for personal or emotional problems or for suicidal thoughts. While both means were statistically slightly above a 3.50 midpoint on the scale, indicating that participants are not unlikely to seek help—visually—the statistical means fell near a midpoint. I found that participants in the sample were *not unlikely* to seek help, but might be on the proverbial fence, or cattle gate, when it came to their intentions. The results failed to surprise me, given the controversial nature of the topic. According to Edwards and Smith (2014), when faced with the option to select neutral or undecided options on a Likert-scale, participants are more likely to select lean conservatively, rather than choosing a distinct stance, perceived to be more extreme. Research suggests that individuals often lean toward neutrality to avoid confronting internal conflicts and/or choosing items deemed socially undesirable, especially regarding sensitive topics (Bishop, 1987; Krosnick et al., 2002). Given that literature on help-seeking for this specific population is so sparse, this finding greatly contributes to the current body of research. This data suggests that agriculturalists are open to help-seeking and efforts to improve help-seeking in this population should continue.

This analysis, however, would be incomplete without thorough recognition of standard deviations. Given that the standard deviation for help-seeking for personal or emotional problems was less than 1, I concluded that most participant responses were situated almost one standard deviation around the mean. However, I noted that the standard deviation for help-seeking for suicidal thoughts was greater than one, which

indicated a higher variance in responses. This suggests that answers might have been more polarized, falling on either side of the mean.

Comparatively, participants in this sample are more likely to seek help for personal or emotional problems than for suicidal thoughts. Various factors could have contributed to lower intentions for more critical mental health help-seeking purposed in the second item. Research from Wang et al. (2007) found that older men more commonly fail and/or delay help-seeking for mental disorders. Men, over the age of 65 represented a majority of this sample. However, I did not set an objective to investigate demographic influences on help-seeking; and therefore, cannot conclude if or how age, gender, or other demographic factors influenced the degree of help-seeking reported by agricultural producers. Literature suggests that levels of stigma and social capital might be another factor contributing for help-seeking resistance (Corrigan, 2004; Vogel et al., 2006). I will further discuss the influence of stigma and social capital on help-seeking intention in conclusions and recommendations for objectives four and five.

Recommendations for Practitioners Based on Objective One

Ultimately, I would be remised if I did not draw attention to the extensive gap that exists between the intention reported by respondents and the maximum degree of intention able to be achieved. Given that overall mean for intention fell slightly above the halfway mark on the scale, room for growth is apparent. Practitioners should note that immense opportunity exists to increase help-seeking intentions of production agriculturalists in order to achieve improved mental health outcomes. Increased intention could be achieved in a variety of ways and will be explored in depth throughout the

entirety of this chapter. However, broadly I suggest that practitioners seek to redesign mental health intervention and treatment options to be cognizant of agricultural producers' experience and customized to their specific needs and desires. One step toward achieving those programmatic improvements is by creating policies and programs that equip and empower those likely to be on the frontlines of intervention. Efforts dedicated to implementing these recommendations should look to conclusions and implications for objective two.

Recommendations for Researchers Based on Objective One

Given the findings and conclusions developed from objective one, I recommend that future researchers further investigate the help-seeking intention and behavior of production agriculturalists. While utilizing the grand mean from the general help-seeking construct for both items gave me a snapshot of intention, it failed to provide an in-depth account of help-seeking behavior. Thus, I believe that future researchers should conduct a qualitative study to better understand agriculturalists' perceived barriers and motivators to seeking help for mental health issues including sources from which they would be likely to seek help, the resources they would be most willing to utilize, and the preferred delivery of those resources. Using results from this study, I recommend that future researchers create a new instrument to measure help-seeking intention. Further, because of the sensitivity and potential controversial nature of the questions, the neutrality represented in the overall mean made true scores for difficult to flush. Thus, these measures might not have been the best representation of intention. To achieve a clearer understanding of intention and force respondents into a more defined anchor, I

recommend that instrument developers remove neutral anchors or utilize a sliding scale to collect responses in the creation of this new instrument.

Next, I see value in understanding what other relationships existed and how these might have influenced help-seeking intention. I recommend that future researchers conduct correlations to analyze association between personal characteristics—such as age, gender, marital status, commodity association, years working, etc.—and agricultural producers help-seeking intention. In addition, I believe future research should investigate if higher intention is predictive of or results in actualized behavior for agricultural producers. This finding would further determine how this phenomenon fits within Theory of Reasoned Action and Theory of Planned Behavior. Specifically, I would want to know if help-seeking intention breeds help-seeking—specifically treatment or service use. A longitudinal study could be conducted with agricultural producers to investigate their levels of intention and actualized help-seeking behavior. Future researchers could conduct regression analyses to then investigate the effect of intention on service use.

Objective Two

Top Help-Seeking Sources for Personal or Emotional Problems

Objective two allowed me to describe scores received for potential help-seeking sources and, ultimately, determine the help-seeking sources agricultural producers would be most and least likely to turn to for help. From this objective, I discovered that participants reported their top help-seeking sources for both personal or emotional problems and for suicidal thoughts. As stated, intimate partner, friend, and other relative or family member rose as top help-seeking sources for personal or emotional problems.

Intimate Partner, Friend, Relative, or Family Member. This result aligned with research that suggests that agriculturalists have closer familial relationships than those in other occupations. parents and in-laws—both in proximity and degree of contact—than those who don't farm (Fraser et al., 2005). This could partly be due to the fact that many agriculturalists live in rural areas, with little access to other social groups. While this sample was not restricted to rural areas, 24 of the surveyed 32 counties are designated rural counties (Texas Department of State Health Services, 2013). Research from Truchot and Andela (2018) identified isolation as prominent stressors farmers face. While social isolation is a key factor of stress, physical isolation contributes to stress and has implications on farmer mental health as well. In addition to distance from recreation and other potential stress relief outlets, agricultural producers in rural areas face barriers in availability and accessibility to appropriate healthcare and affordability of insurance coverage (Thomas et al., 2012). Thus, the dependence on family and friends represented in this data, could be a result of actual or perceived physical and/or social isolation from other groups.

***Social Capital and Help-Seeking*.** Similarly, data from the personal social capital scale (PSCS) showed that immediate family members, friends, and relatives play a large role in agricultural producers' social networks. When asked about routine contact, level of trust and dependability, on average, agricultural producers scored immediate family, friends, and relatives within the top four of their social groups. In fact, on average, agricultural producers' immediate family members, friends, and relatives received the three highest scores for routine contact and dependability.

Literature works to support this narrative. Previous research suggests that for personal and emotional problems, agricultural producers tend to rely on those closest to them within their social networks for personal and emotional support (Vogel et al., 2007). This data provides an interesting gateway connection to previous literature. Research from Duca (2010) showed that those struggling with mental illness tend to have limited social networks, that are heavily familial (Duca, 2010). For rural, agricultural producers—this could be due to a number of factors not investigated in this study. While data from this study did not support causation, previous literature would suggest that this reliance could be due to physical or emotional distance from other social groups and forms of support (Thomas et al., 2012).

So, while agricultural producers' help-seeking preference for family and close friends align with their social capital and support networks, literature would suggest this relationship could lead to unhealthy consequences. According to Vaughn and Leff (as cited in Duca, 2010), "reliance on a small and restricted network can increase interpersonal stress and lead to greater emotional reactivity in family interactions" (p. 14). The level of support given to those struggling with their mental health or mental illness can create an imbalanced beneficence, which can often strain relationships within social networks, especially with close family and friends (Duca, 2010). Literature suggests that this strain can create tensions within the social networks that cause those struggling to perceive themselves as burdensome, lowering their self-esteem and self-worth (Duca, 2010).

However, this data and previous literature clearly shows negating the importance of support from family and friends would be a mistake. Rather, the inclusion of programs and resource efforts should be developed to support, cater to, and meet the needs of this demographic of immediate family, friends, and relatives. These efforts should not only provide information about how to best provide assistance as a crucial member of the support network, but also provide avenues of relief, release, and encouragement to help relieve tensions and sustain healthy relationships between primary supporters and those who are struggling.

Low Help-Seeking Sources for Personal or Emotional Problems

I cannot disregard the items which received the lowest means. County Extension Specialist, Public Health Department, and Phone Helpline fell to the bottom as help-seeking sources. On the scale provided, these means represent a position between anchor statements *Extremely Unlikely* and *Unlikely.* From this, I concluded that the intention of agricultural producers in this sample to seek help from these sources is not likely. *County Extension Specialist, Public Health Department*, and *Phone Helpline* received the lowest means from the help-seeking item for personal or emotional problems. While these all represent significant findings, special attention should be given to the mean for *Phone Helpline.* The literature falls short in providing a complete synthesis of relevant mental health and crisis resources world- or even nationwide.

Phone Helpline. The most robust piece from the World Health Organization tracking specific resource availability (WHO) (2001) is nearly two decades old and fails to even recognize more modern forms of support like phone helplines and other

telehealth options—which serve as more accessible and lower-cost alternatives to traditional intervention resources (Kvedar et al.,2014) . Within the realm of agriculture, the most relevant comes from Farm Aid, which provides agriculturalists with a Farmer Resource Network (Farm Aid, n.d.). The pinnacle of this tool is a hotline available during normal business hours, Monday through Friday—available to agriculturalists struggling with personal problems on and off the farm (n.d.). Similarly, National Alliance on Mental Illness (NAMI) and Substance Abuse and Mental Health Services Association (SAMHSA) provides those struggling with a list of helpline resources. In 2019, the Federal Communications Commission (FCC)—in collaboration with SAMHSA—passed a proposal for the creation of a three-digit crisis helpline for mental health and suicide prevention (Dwyer, 2019).

Contrary to the presence and push for these services in today's climate for mental health support services, for this population, while helpline services are a necessary and cost-effective resource, they may not the most effective form of intervention. Given the other data from this construct, which suggests that production agriculturalists from this sample preferred more personal, intimate forms of support, the disconnected anonymity helplines provide—designed intentionally for confidentiality—may discourage agriculturalists from utilizing the resource.

Top Help-Seeking Sources for Suicidal Thoughts

Unlike the first question which asked about likelihood of help-seeking for personal and emotional problems, the second question on the GHSQ asked about sources one would be likely to seek help from if they were experiencing suicidal thoughts.

Similar to the first question, participants scored intimate partner the highest, with a mean of 5.06. Again, this aligns with data from the first question within the construct and previous literature. Research from Duca (2010) found that familial members of social networks often serve as primary support for those struggling with mental illness. Some of the most enlightening responses came from items with the second and third highest mean.

Minister or Religious Leader. While it may have been somewhat of a surprise to see the mean of this item rise so prominently to the top, further investigation of previous literature provides abundant support for the role of religion and spirituality in mental health recovery. Research by Tepper et al. (2001) surveyed 406 patients at a mental health facility and found that "more than 80 percent of participants used religious beliefs or activities" as coping mechanisms (p. 662). This study concluded that religious intervention may help alleviate symptoms of mental illness and recommended integrating some sort of religious or spiritual component into clinical treatment and prevention (Tepper et al., 2001). Given that many turn to spiritual outlets to cope with mental distress, it only makes sense that they would be likely to seek help from religious leaders of their belief system. This finding also aligns with literature specifically pertaining to rural agriculturalists. Swierenga (1997) investigated the role of the church in rural America and found that historically, religious practices and places of worship have helped to ease isolation and provide rural citizens with a sense of community and social support. The study also suggested that religion extended to the farm and was influential in certain agrarian behaviors (Swierenga, 1997). Responses to this item within

the GHSQ support those previous findings in the literature which suggest that spirituality and religion play an integral role in the coping and recovery of mental illness and are also influential in rural, agrarian behavior.

However, research suggests that while intention is present, the current environment may not be conducive to appropriate support. The study conducted by Tepper et al. (2001) found that despite intention and desire expressed, only 15% of those surveyed had actually reached out to discuss their mental illness with religious leaders. This represents an ineffective disconnect in desire and delivery, which could be due to a number of factors, not investigated within the study.

Mental Health Professional. *Mental health professional* (e.g. psychologist, social worker, counselor) represented the second highest mean in the dataset for the help-seeking in regard to thoughts of suicide. This is an important finding, as it contrasts an abundance of literature on help-seeking and mental healthcare service use. Research suggests that there is a vast underutilization of mental health services and that various factors, such as availability, accessibility, and affordability, all influence likelihood of help-seeking (Hobson, 2008). This is especially true in rural areas, where professional mental health services aren't as readily available, accessibly or affordable—especially for self-employed individuals, like agricultural producers, whose insurance coverage might not include specialty mental healthcare. Previous research also noted stigma as a prominent factor working against rural mental health service use. In a study conducted by Polain et al. (2011), they found that farmers over the age of 58 years, resisted mental health service use due to the stigma associated and the lack of knowledge about agri- and

rural culture. While this still may be the case and likelihood doesn't equate to acting on such behavior, recognizing that these agricultural producers would be willing to seek to help from trained, mental health professionals is crucial for program development moving forward.

Low Help-Seeking Sources for Suicidal Thoughts

Extension Practitioners. *Extension Agent* and *Extension Specialist* brought the lowest means for likelihood of help-seeking for suicidal thoughts. This could be due to a variety of factors, but could be influenced by a lack of routine contact—as presented in means from the personal social capital construct. However, tying this finding back in with those discovered in the social capital construct, the data shows that despite the reported lack of contact, when asked about levels of trust and dependability within their social networks, agricultural producers favorably scored Extension practitioners. As noted by Catty et al. (2007), trust and dependability are important factors of patient-professional relationships and mental health service use. Thus, potential exists to create a place at the table for Extension in the conversation of mental healthcare, especially in Texas, where programming and imperatives within the strategic plan prioritize family and community health initiatives (Texas A&M AgriLife Extension, 2016).

Unfortunately, this potential will not be actualized if efforts are not communicated. Given that the data suggests a dismissal of Extension as a help-seeking source despite reported levels of trust placed in its practitioners, perhaps the low means are less influenced by a lack of routine contact and rather due to a disconnect in awareness and perceived relevance. According to survey research conducted by Dewald

(2019) found that only "31.8% of Texas residents reported to be aware of Texas AgriLife Extension Service" (n.p.). Further, only 28.3% of those surveyed reported to have utilized services or resources Texas AgriLife Extension provides (Dewald, 2019). If the Cooperative Extension System (CES) wishes to be involved with the conversation on mental health within their areas, they must make it a priority to raise awareness about their presence and public value Extension must make known their position on mental health of agricultural producers and the role they intend to play moving forward. Moving forward, they must equip their practitioners—agents and specialists—with the tools and resources necessary to host conversation, offer support, and activate practical solutions.

Complete Help-Seeking Resistance. Respondents were also given the opportunity to choose "*I would not seek help from anyone."* On the Likert-scale used, the overall mean for this item for help-seeking for both personal or emotional problems and for suicidal thoughts fell slightly above the third anchor, represented narratively by the statement *Unlikely.* While this difference is small, this finding enabled me to conclude that participants would be *more likely* to seek help if they were experiencing suicidal thoughts, as opposed to help-seeking for a personal or emotional problem, which is a critical distinction. The delineation between these types of help-seeking are not adequately explored in the literature. However, this finding contradicts previous literature. While producers indicated that they would be more likely engage in help-seeking if they were experiencing thoughts of suicide, research by Deane et al. (2001) and Calear et al. (2014) found that suicide ideation was associated with lower help-seeking intention.

Recommendations for Practitioners Based on Objective Two

Findings and conclusions for the second objective were probably the most rich and dense in terms of characteristically capturing the mental health help-seeking experience of producers. For recommendations based on objective two, I will focus most extensively on the top help-seeking sources identified by respondents. In both items, intimate partner (girlfriend, boyfriend, husband, wife, de' facto), received the highest mean for help-seeking overall. Due to what I found in empirical evidence from the literature and comparative responses from the PSCS, I was not surprised by this finding. Given what I found in the literature regarding the vulnerability of producers' intimate partners and close family members and the strain that it places on their relationship with their loved one, this finding raised concern and solidified necessity of recognition in this chapter.

Understanding that producers are most likely to turn to these individuals in times of emotional or mental distress, especially during risk of suicide, I recommend that access to proper mental health awareness and intervention training be made possible to these individuals, such as the Mental Health First Aid (MHFA) course offered through the National Council for Behavioral Health, or another similar training. As primary supporters, these individuals should be aware of their role as such—noting that their role is for initial symptom appraisal and intervention in order to refer their partner to other resources and/or appropriate professional help. Unless they are licensed medical professionals, these individuals should never be obligated, nor responsible, for attempting to treat mental illness or distress. Through programs like MHFA, partners

and other primary supporters are empowered through education and training regarding types and differentiations between mental illnesses, symptom appraisal, engaging in constructive, support dialogue, and strategies for referral and de-escalation of suicide risk.

Unfortunately, these programs are not readily available or accessible geographically and most come with a cost to attend, both of which place additional strain on the family. Here is where I see potential for community engagement and collaboration within the agriculture industry. Service agencies within agriculture, like Farm Bureau and Extension, exist to support and serve agricultural producers. Their low ranking as a help-seeking source and supporting literature would indicate, that due to lack of awareness or a perceived disconnect in relevance, these agencies don't currently have a seat at the table, serving agriculturalists in their area in this way. I recommend that they pull up a chair, immediately. I recommend that local community leaders within both agencies—and others like them—consider training in mental health awareness and intervention and certification as trainers. By offering these services to those in their area, it could alleviate the financial strain and travel barriers faced by primary support partners of agricultural producers. Not only will this help fill a necessary service gap, but it also helps to widen the social networks of producers and their family, and in turn, increase their social capital.

Regardless of the support that awareness and intervention training would give agricultural producers' partners and immediate family members—being the primary support for anyone struggling with their mental health or battling mental illness is tough.

Understanding that intimate partners and immediate family members of agricultural producers can be put at risk when acting in primary support or caregiver roles, I recommend that Family Support Networks—sponsored/hosted by local health clinics, churches or agricultural agencies like Farm Bureau or Extension—be developed to provide primary supporters with resources and support them in their roles. These support groups for intimate partners and immediate family members can be formal or informal social groups that meet specifically to create a safe space where primary supporters can access information, share and support each other, spend time away from the operation, and relieve stress. These groups will help empower and support those acting in primary support roles so that they can better care for and assist their loved one but will also help to reduce socially-held stigma and increase the social capital of those within the agriculture industry.

Faith-Based Resources. Similar to those in primary support roles, I recommend that members of the clergy and other religious leaders receive formal training in mental health awareness and first aid, especially for suicide prevention and intervention. Agricultural producers are likely to turn to these individuals in times of distress and while spirituality plays a role in mental healthcare, it is merely one component support. It is not likely that these individuals possess the mental health training necessary to respond and appropriately support someone in mental distress or at risk of suicide. I recommend that steps be taken to equip ministers and/or religious leaders in agriculturally rich areas with the knowledge, tools and resources necessary to support, intervene, deescalate, and refer if presented with the opportunity.

Professional Mental Health Resources. Finally, I recommend that attention be given to improving professional mental healthcare in rural areas, or those dense with clientele in agriculture. Contrary to what some might think, this data showing mental health professionals as a likely help-seeking source for agricultural producers, suggests that when considering programs and resources, it is important not to completely rule out conventional treatment and support methods. However, due to shortage of mental health professionals and facilities—especially in rural areas—and barriers specific to producers like geographical distance to care, lack of insurance coverage, etc., I recommend that community leaders and local legislators consider other ways in which agricultural producers might receive these services. Innovative solutions to consider include telehealth, traveling or regional rural 'farm' counselors, faith-based counselors through places of worship of religious organizations, or conjoining mental health services with other events or agriculturally-focused conventions/meetings—perhaps in conjunction with agricultural agencies like Farm Bureau or Extension.

In areas where mental health professionals are available, I recommend that they partner with these agricultural agencies and organizations to become more knowledgeable about the lifestyle of agricultural producers and the unique barriers they face that put them at risk for compromised mental health. These partnerships will help them, as practitioners, offer culturally appropriate and sustainable intervention and treatment options for agricultural producers. These efforts will be maximized if the agencies push these educational materials community-wide, in an effort to raise awareness for mental health and help-seeking within the agricultural community, reduce

stigma, and build allies in the area to grow support networks and increase social capital of agricultural producers.

Ultimately, all of these recommendations require financial and legislative support. I recommend that policymakers work with community leaders to identify program areas of need, such as those listed above, and allocate grant dollars to help fund these efforts, especially in rural areas and those marked as HPSAs—or assist agricultural agencies, healthcare facilities, and other partnerships to provide subsidized mental healthcare for agricultural producers.

Recommendations for Researchers Based on Objective Two

Given the priority placed on intimate partners, I recommend that future research explore the perspective and experience of agricultural producers' intimate partners. This data and previous literature suggest that agricultural producers' spouses or significant others' face unique barriers and additional stressors. Findings from future research on this vulnerable population could contribute to deepened understanding of phenomena surrounding mental health within the agriculture industry.

In addition to recommendations for practitioners, conclusions from objective two hold significant implications for future researchers. One of the findings from this study that lacks explanation with regard to agricultural populations in current literature is the priority that these individuals placed on minister or religious leader as a help-seeking source. Recognizing the importance of religion as an avenue for treatment and the vitality of religious leaders as prominent actors in short-term referral and support—especially to agricultural producers and those in rural areas—is crucial. Future research

should be dedicated to understanding the importance that agricultural producers place on religion. Future researchers could investigate the effect that religious involvement or spirituality has on mental health outcomes.

Given what is now known about the priority agricultural producers place on of these groups as helping sources, research should also be dedicated to understanding the mental health literacy of agricultural producers' intimate partners and religious leaders. Additionally, researchers should investigate their perceived levels of self-efficacy in offering support to individuals, or more specifically, agricultural producers, experiencing personal or emotional problems and/or suicide ideation.

Objective Three

With my third objective, I sought to determine if differences in help-seeking existed among different groups within this population. Research suggested that stress and burnout among producers were directly related to levels of farming activity like increased workload, uncertainty regarding market, economic stability and legislative pressure as it relates to agricultural production (Truchot & Andela, 2017). Given this, individuals more directly involved with operations might experience more stress, which could explain potential differences in help-seeking intention (Truchot & Andela, 2017). Other literature seemed to contradict this expectation. Research from Rosmann (2003) found that off-farm hours and higher workload of those with dual employment correlated with increased stress (Rosmann, 2003). This was contradicted by research from Saane et al. (2004), which found no significant difference exists in stress, anxiety, and levels between full-and part-time farmers. Regardless of occupational classifications' effect on

stress levels, this data suggested that there was no significant difference in help-seeking among occupational classifications for either personal or emotional problems or thoughts of suicide. Thus, I concluded that the common, underlying factor between these groups is their involvement in the agriculture industry. Overall help-seeking intention is the same, regardless of the degree of involvement.

Recommendations for Practitioners Based on Objective Three

Findings and conclusions for objective three allowed me to arrive at recommendations for the development of communication strategies and policy development. Full-time agricultural producers are not more or less likely to engage in help-seeking behaviors and do not disproportionately benefit. Therefore, policy and health communication efforts aimed at increasing help-seeking should not be limited to one specific sub-group of production agriculturalists. Similarly, programming developed for early detection/assessment, treatment and prevention should not be designed to neglect certain subgroups of agriculturalists, i.e. grants, subsidized healthcare, and other programming should not be limited to full-time producers. Instead, I recommend that these efforts are broadly targeted and accessible to individuals operating within production agriculture. Finally, messaging strategies should be inclusive and representative of individuals employed in production agriculture, regardless of their degree of involvement. Based on these findings, I recommend that these organizations work closely with communication specialists to ensure that these messages visually and verbally appeal to the social identity of the producers to further promote the adoption of help-seeking.

Recommendations for Researchers Based on Objective Three

Based on recommendations for practitioners on communication strategies, additional research should be done to identify the appropriate channels through which agricultural producers prefer to receive their messages. However, no matter the medium—these channels should be distributed through social networks of agricultural producers to help enhance a positive culture of help-seeking within these groups to help improve health-forward behavior.

Objective Four

The aim of objective four was to explain the relationship between social identity, social capital, and self-stigma, which were used as the independent variables for objective five. Through the fourth objective, I was not able to confirm a relationship between self-stigma and either social identity or social capital, despite previous evidence suggesting the existence of a correlation (Landfredi et al., 2015). As noted in initial descriptive statistics for self-stigma, the grand mean for self-stigma of this sample fell near the neutral anchor, with a standard deviation below one. Thus, this might have served as a barrier to flushing out that relationship.

However, I was able to confirm that a relationship between social identity and social capital exists, which aligns with previous literature (Haslam et al., 2009; see also Magson et al., 2014). While many former studies did not examine statistical correlation, nor report the direction of association, those that did suggested that the association between social identity and social capital would be positive (Haslam et al., 2005). Haslam et al. (2005) found that occupational social identity was positively correlated

with social support—a factor in social capital—and noted that social support mediated relationships between social identification and stress. This literature supports findings from the current study. While an initial look at the correlation might suggest that social identity and social capital were negatively correlated, since scores for social capital were reverse coded, lower scores within the construct actually represented *a higher* social capital. Since the analysis showed that higher scores for social identity correlated with lower scores for social capital, this told me that the greater emphasis respondents' placed on social identity, the higher their scores for social capital.

The nature of this relationship is interesting and speaks volumes about the influence of the *type* of identity measured and how it relates to social capital. This study looked at occupational identity, specifically of agricultural producers. To understand this relationship, one needs to first look at the characteristics of this group socially. Literature shows that agriculturalists often experience social isolation from their peers and even their family members because of factors unique to the occupation like increased workloads, long working hours and, usually, rural geographical location (Gregoire, 2002). Further, there is empirical evidence which shows that some many farm spouses work full or part-time off the farm and the number of workers per farm has decreased because of technological advancements in the industry (Gregoire, 2002). Due to the nature of their work, leisure time is limited, which means that agriculturalists' social networks can suffer (Roy et al., 2017).

However, for agricultural producers with a higher COIC score, their sense of felt identity is shared by others within the broader group (Haslam et al., 2009). Haslam et al.

(2009) stated that "If these groups provide a person with stability, meaning, purpose, and direction, then this will typically have positive implications for that individual's mental health" (p. 5). For many agricultural producers, especially those who have inherited and work generational land, farming is all they've ever known. This is supported by research which shows that agricultural production is central to the identity of producers and provides them with a sense of purpose and fulfillment (Foskey, 2002). Research by Foskey (2002) suggests that farm work serves as a primary source of satisfaction and pleasure for agricultural producers. Thus, this finding in conjunction with previous literature, would suggest that with this population a positive social identity could contribute to improved mental health (Haslam et al., 2009).

Further, a greater sense of social identity can expand producers' social network (Haslam et al., 2009). Social identity builds a foundation for interaction and social support (Haslam et al., 2009). When agricultural producers identify broadly to their social group, especially when this identity is salient, research suggests that this social group can positively impact their help-seeking behavior—if others within their social networks who share this identity promote progressive health behavior (Haslam et al., 2009). Haslam et al. (2009) suggests that "this is one key reason why social identification proves to be a strong predictor of well-being" (p. 11). This is especially important for future researchers, given the positive effects that enhanced social identity and increased social capital can have on help-seeking behaviors and improved mental health outcomes (Hedge et al., 2017; Magson et al., 2014).

Recommendations for Practitioners Based on Objective Four

Based upon these conclusions, I recommend that communication efforts be made within the industry to shift the cultural paradigm of agricultural producers as it relates to accepting support, taking time for personal investment, and building community. While health practitioners, agricultural agencies, and community leaders can shout from the rooftops to reverse a fixed belief system, change will not take hold unless instigated internally. Given the strength of influence that embedded norms within social identities have on behavior, I recommend that targeted efforts work to reverse health-debilitating norms reinforced by individuals within the agriculture industry. To achieve this, I recommend that key stakeholders and ally producers take special note to encourage transparency and open dialogue in social spaces and online platforms in an effort to enhance social identity in healthy, productive ways. This could be done by encouraging producers directly or indirectly affected by mental illness or suicide to publicly share their story. These individuals could spearhead the mental health movement and serve as keynote or panel speakers at events, conventions, or annual meeting of commodity/trade/federation meetings. Agribusinesses and other prominent voices in agriculture should promote accountability within producer and commodity groups. Individuals should be encouraged to take notice of their physical and mental health. Producers, especially those in social or geographic isolation should be encouraged to check-in with others in their area and hold each other accountable for engaging in health-promoting behaviors.

Further, I suggest that work be done to create more informal programming that allows producers to build rapport and increase their social capital. Initial funding and

programming should be instigated from the top-down—i.e. federal/state government to community. Without broader support from larger entities driving change, I foresee little progress at the local levels. However, I suggest that from a programmatic standpoint, local health practitioners partner with agricultural groups and key informants within the industry at the local level to build a framework for community-centric support. This recommendation will further be expanded upon in the final recommendation.

In each of these recommendations, I do not foresee large, wide-sweeping change activated by expensive programming and extensive efforts. Based on the data, producers have trust in—and prefer—their tight, deeply invested support networks. I recommend that those looking to develop programming look to cultivate this environment for agricultural producers and their families. Findings from this research would lead me to foresee the most return on systems put in place to encourage personal and consistent attempts to check in, conjoined with small, local efforts to build community-based support.

Recommendations for Researchers Based on Objective Four

In addition to recommendations for practitioners, I also developed recommendations for researchers based on conclusions from objective four. Given that findings initially negated a correlation between self-stigma and the other variables, my first recommendation is that future research focus on flushing out the relationship between stigma and other help-seeking variables and for addressing factors of social identity in production agriculturalists that might limit their social capital. While this research suggested that production agriculturalists levels of self-stigma are not

associated with measures of social identity or social capital, future studies should not neglect the potential of this variable. Before discounting the relationship between self-stigma and the other variables, future studies might consider further flushing out mental illness and help-seeking stigma held by agricultural producers. To better capture self-stigma, future researchers should consider using qualitative methods to achieve rich and thick descriptions of the degree to which agricultural producers have internalized stigma. This data could then be used to create an alternative scale for self-stigma of agricultural producers. Additionally, given previous research which provides strong evidence for association of stigma with the other variables—future studies should consider the role that social stigma plays—as work done to reduce stigma in recent years might have kept individuals within this population from internalizing stigma. Once perceptions of social stigma held by this population is better understood, I recommend researchers also examine any interactions between social identity, social capital, and social stigma.

Despite being unable to confirm a relationship between self-stigma and the other variables, I did confirm a relationship between social identity and social capital. While my findings and conclusions from objective four helped me to understand the nature of the relationship, they did not explain why that relationship exists. Despite the rather high levels of identity and capital reported by my sample, work needs to be done to address cultural components of agricultural producers' identity that could potentially limit their social capital. This research would be used as an effort to continually increase measures for social capital and social identity to improve help-seeking and mental health outcomes. To do this, I recommend that future researchers utilize qualitative

methodology to employ interviews or a focus group with agricultural producers to gain a better description of their social identity—including questions that target cultural ideologies that potentially limit the growth of their support systems and social capital.

Objective Five

The aim of objective five was to determine the effect of social identity, social capital and self-stigma on help-seeking intention for personal or emotional problems or suicide ideation. After conducting the multiple linear regression to achieve results for objective five, I determined that both regression models were a good fit and that social capital and self-stigma were significant predictors of help-seeking intention for both personal or emotional problems and for thoughts of suicide.

Further, significance levels indicated that I could confirm, with 99% confidence, that measures for personal social capital and self-stigma can be used to predict agricultural producers' general help-seeking for personal or emotional problems (p=.01) or suicide ideation (p=.01). Given my finding which showed that self-stigma has significant negative effect on intention for both constructs, I concluded that individuals with higher self-stigma would have lower intention to seek help for personal or emotional problems or thoughts of suicide. Similarly, I found that units for social capital had a significant negative effect on help-seeking intention for personal or emotional problems and help-seeking for suicide ideation. Again, it is important to note that in accordance with the PSCS, higher means on the scale represented lower overall social capital. Practically, this model would tell me that individuals with more social capital

tend to have higher intention to seek help for personal or emotional problems or when experiencing thoughts of suicide than someone with less social capital.

From the multiple linear regression model, I also concluded that social identity—as measured by the COIC—is not a significant predictor of production agriculturalists' help-seeking intentions for personal or emotional problems or suicide ideation.

Recommendations for Practitioners Based on Objective Five

Findings from objective five allowed me to determine that ultimately, self-stigma and social capital predict help-seeking intention. While related recommendations have previously been addressed in objectives one through four, overarching recommendations that further address these findings and encompass previous recommendations are outlined in this section. Given conclusions from objective five, these final recommendations directed toward practitioners are intended to address and lower self-stigma in agricultural producers and increase their social capital. These recommendations are intended to promote efforts that will ultimately increase intention, instigate positive the help-seeing behavior, and ultimately, help agricultural producers achieve improved mental health outcomes.

First and foremost, one way to combat and destigmatize mental health is by increasing mental health literacy (Kutcher et al., 2016). Thus, I recommend that practitioners within the agriculture industry—take mental health awareness training or complete Mental Health First Aid, or a related course. I also recommend that at least one individual positioned in leadership within industry organizations complete the steps necessary to become a trainer so that they can offer trainings to others locally. These

individuals might be County Farm Bureau board members, commodity group councilmen or elders, Regional Program Leaders within Extension or even agents. These trainings should be made available to agricultural producers and those within their social networks including family members, friends, others in the agriculture industry, etc. Another way to decrease stigma is to use large, industry platforms to roll out campaigns and content that share information about mental health and promote healthy, help-seeking behavior. Agriculture companies and organizations should be using conventions, annual events, trade shows, social media content, speaking engagements, newsletters and magazines to find ways to talk openly and honestly about stress and mental illness. Given that so little has been done, the opportunities are almost endless for practitioners looking to destigmatize mental health within agriculture. As an industry, we need to work to change the current narrative, and that doesn't have to start with the older generations. Associations like the National FFA Association and 4-H can capitalize on their captive youth, adolescent, and young adult audiences. I recommend that these organizations look to how they can develop and implement mental health curriculum into their programming or think about how they can raise mental health awareness and literacy amongst their members. These individuals will soon become the future agricultural producers. Opportunity exists to use younger generations to shift the way in which the industry views and prioritizes mental health.

In addition to decreasing self-stigma, solutions aiming to increase social capital, widen social networks, and provide various outlets of support outside of family and close friends would be valuable and effective for long-term support and recovery. Again,

this can be done in a variety of ways given the abundance of findings gathered from this data. Given the emphasis this sample placed on seeking help from religious leaders, one way to increase social capital might through the use of small groups led by individuals within the church. These small groups could be faith or non-faith based, but could perhaps meet in places of worship or local community spaces. These groups could be merely social and offer a stress-free environment, a meal, or scheduled activities to help build rapport for agricultural producers and others within the community. Or, if the needs of individuals in the community were more closely tied to mental health support, these small groups could operate much like an Al-Anon or support group with a religious leader, local physician or counselor serving as a guide. This not only provides individuals with an outlet to seek help, but also allows them to meet with other individuals in their area who might be struggling. In addition, the space could host local family groups for those intimate partners or significant others as another avenue to help primary supporters. Other options to increase social capital is to ensure that local producers are engaged and involved with others when and where they can be. I recommend that individuals or businesses within their local communities—churches, feed stores, local cooperatives, salesman—make small, but intentional efforts to draw agricultural producers into their circle and find ways to include this population in their outreach, especially in seasons when these individuals face increased isolation like planting and harvest, calving season, etc. Dedicated efforts should be made to identify ways that local agricultural producers within communities can be engaged or served.

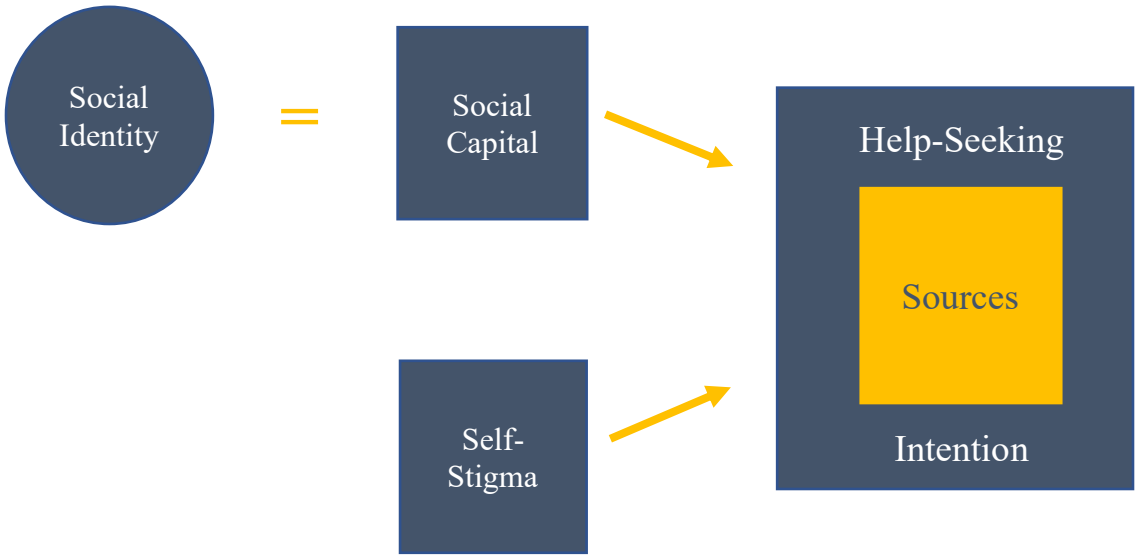
Even something as simple as routine “neighbor check-ins” can help individuals feel seen and supported.

Recommendations for Researchers Based on Objective Five

Last, but certainly not least, future research should be dedicated to better understanding the relationship, which I proposed in an original model in Figure 2.

Figure 2

Model for Mediated Help Seeking of Agricultural Producers

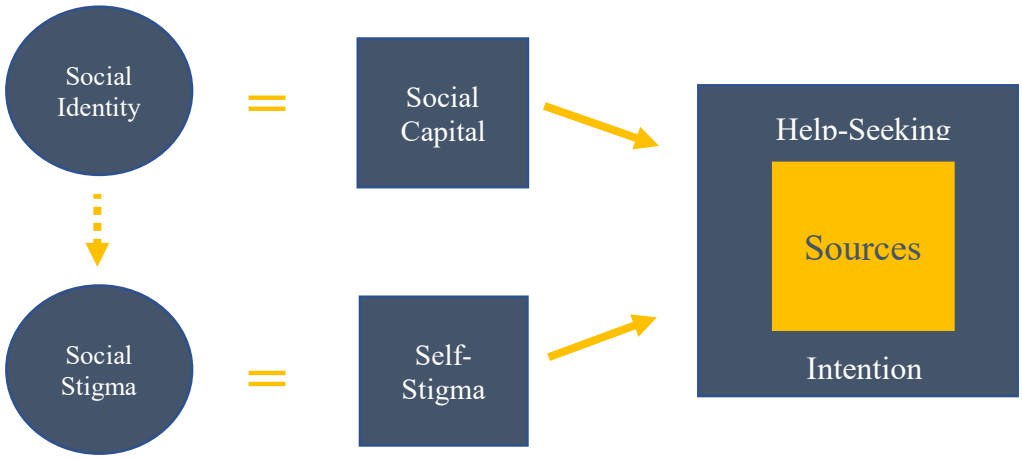


I recommend that a USDA/National Institute of Food and Agriculture (NIFA) FRSAN Grant Proposal be drafted to fund a longitudinal, experimental study which creates a mental wellness group specifically for agricultural producers and investigates the influence of monthly participation in this group on self-stigma, social capital, and help-seeking intention. The population could be a commodity group chapter or county Farm Bureau. Both groups would receive pre-assessments of their self-stigma, social

capital, and help-seeking intention. The treatment group would be part of cohort that meet once a month for a one-hour social meeting, which would include a meal and some form of structured programming. During this programming, many of the previous recommendations could be considered as topic ideas or implemented. Keynote speakers/panels/presenters would be brought in to discuss mental health and wellness on the farm. After six months, both the treatment and control groups would be tested. The social cohort could also provide feedback about their experience in the cohort and any desired additions or changes they'd like to see in the program. The last six months of the program would be similar to the first, with more social aspects integrated in like farm visits, community engagement discussions, etc. Ultimately, the second semester would help transition the group into a self-sustaining coalition or organization, should that cohort decide to formally organize and continue to meet and grow as a group. At the end of the year, the individuals would be assessed again on their social capital, self-stigma and help-seeking intention to see if the treatment had any effect on these variables. Additionally, I recommend that future research work to expand the purposed model to get a more robust understanding of present interactions. I recommend that this study be repeated, with the inclusion of social stigma to investigate the relationship of social stigma with the other independent variables and its effect on help seeking intention. I have proposed an original model for that study, represented in Figure 3.

Figure 3

Proposed Model for Socially Mediated Help-Seeking of Agricultural Producers



Final, Overarching Recommendations

While all of these recommendations for practitioners or researchers are beneficial, none of these efforts will be possible without a sound platform for them to stand on. Seeing the mental health phenomenon in agricultural populations as being the result of a much larger, systematic issue, I am directing my final, all-encompassing recommendation toward legislators. I recommend that state and federal legislators in all states, but especially those with dense agricultural production and revenue, make dedicated efforts to create a sustainable infrastructure for rural mental healthcare, specifically by creating systems that cater to and support agriculturists. While the most recent Farm Bill allocated $2 million to partially reinstate the Farm and Ranch Stress Assistance Network, I recommend that serious consideration be given to fully reauthorize and implement this program with more financial support.

Through this policy enforcement and the appropriation of grant dollars, I recommend that an organized, cohesive system be put in place to create a federal model for FRSAN. Further, while the Farm Bill calls for Regional Networks, I recommend the implementation of State and Local FRSAN networks. I suggest local networks be partnered with designated RHCs, but that State FRSAN Networks be housed within the Extension systems of land-grant universities. By placing these within the land-grant system, the FRSAN Regional Networks has the opportunity to draw from various interdisciplinary stakeholders and university partners. These state and local networks can serve as hubs for informational resources, trainings/workshops, programming, and outreach services. These programs would be dedicated to raising awareness for mental health and increasing mental health literacy to help destigmatize mental illness and promote help-seeking within the industry.

Given the priority given to mental health professionals as a help-seeking source for suicide ideation and the high levels of social identity reported by this population, I also recommend that proposed state-level FRSAN consider the implementation of traveling farm counselor(s) or telehealth counseling, funded through the FRSAN program. While more research needs to be done to determine the effectiveness of this service, this service could model the current services of Ted Matthews and the Minnesota Department of Agriculture—one of the only programs of its kind in the nation.

Throughout this entire project, one of the largest barriers to investigating mental health and resources within the industry was the lack of information both in peer-

reviewed literature and in the media. This would suggest that struggling producers or parties interested looking for guidance would be met with the same frustration. Those championing and working to support producers don't know where to start and agricultural producers don't know where to turn. So, I recommend that all of this information be housed on a national FRSAN Network website, with tabs that house links to State Network websites. This site should serve as a central hub that houses all information relating to the FRSAN program. This website would serve as a vital resource to producers seeking information or support. In addition, keeping all of this information under one domain helps not only foster program consistency and accountability, it also helps provide a convenient point of access for program and grant evaluation purposes. At the least, a website/program similar to The Do More Agriculture Foundation, as noted in the recommendations from objective five, could serve as a beginning resource for producers, with the potential of housing it under the national FRSAN Network site.

REFERENCES

Althubaiti, A. (2016). Information bias in health research: definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare, 9,* 211–217. https://doi.org/10.2147/JMDH.S104807

American Psychological Association (n.d.). *Addressing the mental and behavioral health needs of underserved populations*. https://www.apa.org/advocacy/workforce-development/gpe/populations

Ashmore, R. D., Deaux, K., & McLaughlin-Volpe, T. (2004). An organizing framework for collective identity: Articulation and significance of multidimensionality. *Psychological Bulletin, 130*(1), 80–114. https://doi.org/10.1037/0033-2909.130.1.80

Azjen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Barnett, B. J. (2000). The U.S. farm financial crisis of the 1980s. *Agricultural History, 74*(2), 366–380. https://www.jstor.org/stable/3744858

Bertolote, J. (2008). The roots of the concept of mental health. *World Psychiatry, 7*. 113–16. https://doi.org/10.1002/j.2051-5545.2008.tb00172.x

Boerema, A., Kleiboer, A., Beekman, A. T. F., Zoonen, K., Dijkshoorn, H., & Cuijpers, P. (2016). Determinants of help-seeking behavior in depression: A cross-sectional study*, BMC Psychiatry, 16*(78), 1–9. https://doi.org/10.1186/s12888-016-0790-0

Bishop, G. F. (1987). Experiments with the middle response alternative in survey questions. *Public Opinion Quarterly, 51*, 220–232. https://www.jstor.org/stable/2748994

Bureau of Health Workforce. (2016a). *Governor-designated and secretary-certified shortage areas for rural health clinics.* https://bhw.hrsa.gov/shortage-designation/areas-for-rural-clinics

Bureau of Health Workforce. (2016b). *Health professional shortage areas (HPSAs).* https://bhw.hrsa.gov/shortage-designation/hpsas

Bureau of Health Workforce. (2016c). *Medically underserved areas and populations (MUA/Ps)*. https://bhw.hrsa.gov/shortage-designation/muap

Bureau of Health Workforce. (2016d). *Types of designations.* https://bhw.hrsa.gov/shortage-designation/types

Bureau of Labor Statistics (n.d.). *Glossary*. https://www.bls.gov/bls/glossary.htm#F

Calear, A. L., Batterham, P. J., & Christense, H. (2014). Predictors of help-seeking for suicidal ideation in the community: Risks and opportunities for public suicide prevention campaigns. *Psychiatric Research, 219*(3), 525–530. https://doi.org/10.1016/j.psychres.2014.06.027

Catty, J., Winfield, H., & Clement, S. (2007). The therapeutic relationship in secondary mental health care: A conceptual review of measures. *Acta Psychiatrica Scandinavica, 116*(4), 238–252. https://doi.org/10.1111/j.1600-0447.2007.01070.x

Chen, X., Stanton, B., Gong, J., Fang, X., & Li, X. (2009). Personal Social Capital Scale: An instrument for health and behavioral research. *Health Education Research, 24*(2), 309–317. https://doi.org/10.1093/her/cyn020

Coolidge, F. L. (2013). *Statistics: A gentle introduction* (3rd ed). Thousand Oaks, CA: SAGE Publications Ltd.

Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist, 59*, 614–625. http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=1&sid=d5fd85b9-9179-4de7-a73e-baf54e1f734e%40sessionmgr103

Cornally, N., & McCarthy, G. (2011). Help-seeking behavior: A concept analysis. *International Journal of Nursing Practice, 17*, 280–288. https://doi.org/ 10.1111/j.1440-172X.2011.01936.x

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Pscychometrika, 16*(3), 297–334. https://doi.org/10.1007/BF02310555

Davis, J. A. (1971). *Elementary survey analysis*. Prentice–Hall.

Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2001). Suicidal ideation and help-negation: Not just hopelessness or burnout. *Journal of Clinical Psychology, 57*(7), 901–914. https://doi.org/10.1002/jclp.1058

Demos, K., Sazakli, E., Jelastopulu, E., Charokopos, N, Ellul, J., & Michalis, L., (2013). Does farming have an effect on health status? A comparison study in West Greece, *International Journal of Research and Public Health*, *10*, 776–792. https://doi.org/10.3390/ijerph10030776

De Silva, M. J., McKenzie, K., Harpham, T., & Huttly, S. R. A. (2005). Social capital and mental illness: A systematic review. *Journal of Epidemiology & Community Health, 59*, 619–627. https://doi.org/10.1136/jech.2004.029678

Dewald, S., (2019, December 13). *Texas state-wide survey of learning styles for and awareness of Texas A&M AgriLife Extension Service programming*. [Symposium]. ALEC Graduate Assistant Scholarly Research Symposia, College Station, TX, United States.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed). John Wiley & Sons, Inc.

Drake, R. E., Green, A. I., Mueser, K. T., & Goldman, H., H. (2003). The history of community mental health treatment and rehabilitation for persons with severe mental illness. *Community Mental Health Journal, 39*(5), 427–440. https://doi.org/ 10.1023/a:1025860919277

Duca, F. P. (2010). Family network support and mental health recovery. *Journal of Marital and Family Therapy, 36*(1), 13–27. https://doi.org/10.1111/j.1752-0606.2009.00182.x

Dwyer, C. (2019, December 13). *FCC approves plan for 3-digit suicide prevention number similar to 911*. NPR. https://www.npr.org/2019/12/13/787753893/fcc-approves-plan-for-3-digit-suicide-prevention-number-like-911

Edwards, M. L., & Smith, B. C. (2014). The effects of the neutral response option on the extremeness of participant responses. *Journal of Undergraduate Scholarship, 6*. http://blogs.longwood.edu/incite/2014/05/07/the-effects-of-the-neutral-response-option-on-the-extremeness-of-participant-responses/

Farm Aid. (n.d.). *Resources for farmers: Farmer resource network*. https://www.farmaid.org/our-work/resources-for-farmers/

Fielding, K. S., Terry, D. J., Masser, DB. M., & Hogg, M. A. (2008). Integrating social identity theory and the theory of planned behavior to explain agricultural decisions to engage in sustainable agricultural practices. *British Journal of Social Psychology, 47,* 23–48. https://doi.org/10.1348/014466607X20679

Fishbein, M. and I. Ajzen (1975). *Beliefs, attitudes, intention and behavior: An introduction to theory and research*. Addison-Wesley, Reading, Berkshire. MA

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (10th ed.). McGraw-Hill Education.

Fraser, C. E., Smith, K. B., Judd, F., Humphreys, J. S., Fragar, L. J., & Henderson, A. (2005). Farming and mental health problems and mental illness. *International Journal of Social Psychiatry, 51*(4), 340–349. https://doi.org/10.1177/0020764005060844

Gallaher, C. M., Kerr, J. M., Njenga, M., Karanja, N. K., & WinklerPrins, A. M. G. A. (2013). Urban agriculture, social capital, and food security in the Kibera slums of Nairobi, Kenya. *Agriculture and Human Values, 30*, 389–404. https://doi.org/10.1007/s10460-013-9425-y

Giambruno, S., & Pawloski, A. (2018). Mental health clinic opens inside a Walmart in Texas. *TODAY*. New York, NY: NBC Universal. Retrieved from: https://www.today.com/health/mental-health-clinic-opens-inside-walmart-texas-t144083

Gladwell, M. (2002). *The tipping point: How little things can make a big difference*. Back Bay Books.

Government Publishing Office. (2011). *7 CFR § 4284.902 – Definitions.* https://www.govinfo.gov/content/pkg/CFR-2012-title7-vol15/pdf/CFR-2012-title7-vol15-sec4284-902.pdf

Gregoire, A. (2002). The mental health of farmers. *Occupational Medicine, 52(*8), 471–476.

Groth, T. M. (2016). *Using the collective identity construct to examine the role of a farmer occupational identity in multi-functional landscapes in Australia and the United States* (Doctoral Dissertation). Charles Sturt University. https://researchoutput.csu.edu.au/ws/portalfiles/portal/9316320/82193

Groth, T. M., Curtis, A., Mendham, E., & Toman, E. (2014). Farmer identity in multifunctional landscapes: Using a collective identity construct to explore the nature and impact of occupational identity. *Australian Geographer, 45*(1), 71–86. https://doi.org/10.1080/00049182.2014.869297

Groth, T. M., Curtis, Toman, E., & Mendham, E. (2016). The utility of a collective identity construct to explore the influence of farming identity on natural resource management. *Society and Natural Resources, 29*(5), 588–602. https://doi.org/10.1080/08941920.2015.1095376

Groth, T. M., Curtis, A., Mendham, E., & Toman, E. (2017). Examining the agricultural producer identity: Utilizing the collective occupational identity construct to create a typology and profile of rural landholders in Victoria, Australia. *Journal of Environmental Planning and Management, 60*(4), 628–646. https://dx.doi.org/110.1080/09640568.2016.1165189

Haslam, S. A., Jetten, J., Postmes, T., & Haslam, C. (2009). Social identity, health and well-being: An emerging agenda for applied psychology. *Applied Psychology: An International Review, 58*, 1–23. https://doi.org/10.1111/j.1464-0597.2008.00379

Haslam, S. A., O'Brien, A., Jetten, J., Vormedal, K., & Penna, S. (2005). Taking the strain: Social identity, social support, and the experience of stress. *British Journal of Social Psychology, 44*, 335–370. https://doi.org/ 10.1348/014466605X37468

He, K., Zhang, J., Feng, J., Hu, T., & Zhang, L. (2015). The impact of social capital on farmers' willingness to reuse agricultural waste for sustainable development. *Sustainable Development, 24*, 101–108. https://doi.org/10.1002/sd/1611

Hedge, J. M., Sianko, N., & McDonnell, J. R. (2017). Professional help-seeking for adolescent dating violence in the rural south: The role of social support and informal help-seeking. *Violence Against Women, 23*(12), 1442–1461. https://doi.org/ 10.1177/1077801216662342

Hobson, H. L. (2008). *The effects of mental health education on reducing stigma and increasing positive attitudes toward seeking therapy*. (Master's Thesis). Humboldt State University. http://humboldt-dspace.calstate.edu/handle/2148/371

Ivanova, I. (2018). Farmers in America are facing economic and mental health crisis. *CBS NEWS.* New York, NY: CBS Interactive, Inc. Retrieved from: https://www.cbsnews.com/news/american-farmers-rising-suicide-rates-plummeting-incomes

Kedde, H., Van de Wiel, H., Schultz, W. W., Vanwesenbeeck, I., and Bender, J. (2012). Sexual health problems and associated help-seeking behavior of people with physical disabilities and chronic diseases. *Journal of Sex and Marital Therapy, 38*(1), 63–78. https://doi.org/10.1080/0092623X.2011.569638

Khan, K. M., Baidya, R., Ashamsa, A., Farmer, J. R., & Valliant, J. (2018). Neurological and mental health outcomes among conventional and organic farmers in Indiana, USA. *Annals of Agricultural and Environmental Medicine, 25*(2), 244–249. https://doi.org/10.26444/aaem/75113

Klik, K. A., Williams, S. L., & Reynolds, K. J. (2019). Toward understanding mental illness stigma and help-seeking: A social identity perspective. *Social Science & Medicine, 222*, 35–43. https://doi.org/10.1016/j.socscimed.2018.12.001

Koeing, H. G. (2010). Spirituality and mental health. I*nternational Journal of Applied Psychoanalytic Studies, 7*(2), 116–122. https://doi.org/10.1002/aps.239

Kopinak, J. K. (2015). Mental health in developing countries: Challenges and opportunities in introducing Western mental health system in Uganda. *International Journal of MCH and AIDS, 3*(1), 22–30. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4948168/pdf/IJMA-3-22.pdf

Krosnick, J. A., Holbrook, A. L., Berent, M. K., Carson, R. T., Hanemann, W., Kopp, R. J., Mitchell, R. C., Presser, S., Ruud, P. A., Smith, V. K., Moody, W. R., Green, M. C., & Conaway, M. (2002). The impact of 'no opinion' response options on data quality: Non-attitude reduction or an invitation to satisfice? *Public Opinion Quarterly, 66,* 371–403. http://www.jstor.org/stable/3078768

Kutcher, S. Wei, Y., Coniglio. C. (2016). Mental health literacy: Past, present, and future. *Canadian Journal of Psychiatry, 61*(3), 154–158. https://doi.org/10.1177/07-6743715616609

Kvedar, J., Coye, M. J., & Everett, W. (2014). Connected health: A review of technologies and strategies to improve patient care with telemedicine and telehealth. *Health Affairs, 33*(2). https://doi.org/10.1377/hlthaff.2013.0992

Lanfredi, M., Zoppei, S., Ferrari, C., Bonetto, C., Van Bortel, T., Thornicroft, G., Knifton, L., Quinn, N., Rossi, G., & Lasalvia, A. (2015). Self-stigma as a mediator between social capital and empowerment among people with major depressive disorder in Europe: The ASPEN study. *European Psychiatry, 30*(1), 58–64. https:// dx.doi.org/10.1016/j.eurpsy.2014.06.002

Lin, N. (2001*). Social capital: A theory of social structure and action*. Cambridge University Press.

Linder, J., Murphy, T., & Briers, G. (2001). Handling nonresponse in social science Research. *Journal of Agricultural Education, 42*(4). Pages? https://doi.org/10.5032/jjae.2001.04043

Little, J. (2002). Rural geography: Rural gender identity and the performance of masculinity and femininity in the countryside. *Progress in Human Geography, 26*(5), 665–670. https://doi.org/10.1191/0309132502ph394pr.

Liu, B. & Zhongbin, L. (2018). Director Generals' human and social capital and management performance of farmers' cooperatives: Evidence from China's Fujian. *International Journal of Management and Economics, 54*(2), 149–165. https://doi.org/10.2478/ijme-2018-0014

Lu, J. L. (2007). Gender Differentiation among Farmers in the Agricultural Sector in Benguet, Philippines. *Journal of International Women's Studies, 9*(1), 176–199. https://vc.bridgew.edu/jiws/vol9/iss1/11/

Magson, N. R., Craven, R. G., & Bodkin-Andrews, G. H. (2014). Measuring social capital: The development of the Social Capital and Cohesion Scale and the associations between social capital and mental health. *Australian Journal of Educational & Developmental Psychology, 14*, 202–216. https://www.newcastle.edu.au/ajedp

Matthews, T. (2014). *Rural Minnesota: Mental health support*. https://www.farmcounseling.org

McIntosh W., Spies, E., Stone, D., Lokey, C., Trudeau, A., & Bartholow, B. (2016). Suicide rates by occupational group—17 states, 2012. *Morbidity and Mortality Weekly Report, 65*(25), 641-645. (Retraction published 2018, *Morbidity and Mortality Weekly Report, 67*(5), 1253-1260. https://doi.org/10.15585/mmwr.mm6525a1

Milner, A., Spittal, M. J., Pirkis, J., & LaMontagne, A. D. (2013). Suicide by occupation: Systematic review and meta-analysis. *The British Journal of Psychiatry, 203*, 409–416. https://doi.org/10.1192/bjp.bp.113.128405

Montano, D. E., & Kasyrzyk, D. (2008). Theory of Reasoned Action, Theory of Planned Behavior, and the Integrated Behavior Model. *Health Behavior and Health Education*. https://www.researchgate.net/profile/Danuta_Kasprzyk/publication/288927435_Health_Behavior_and_Health_Education_Theory_Research_and_Practice/links/56eabb1008ae95fa33c851df.pdf.

Musavengane, R. & Simatele, D. M. (2016). Community-based natural resource management: The role of social capital in collaborative environmental management of tribal resources in ZwaZulu-Natal, South Africa. *Development Southern Africa, 33*(6), 808–821. https://dx.doi.org/10.1080/0376835X.2016.1231054

National Agricultural Statistics Service. (2018). 2018 State agriculture overview: Texas. *Texas 2017 Census of Agriculture.* https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=TEXAS

National Council for Behavioral Health. (n.d.). *Mental Health First Aid.* https://www.mentalhealthfirstaid.org

Ohrnberger, J., Fichera, E., & Sutton, M. (2017). The relationship between physical and mental health: A mediation analysis. *Social Science and Medicine, 195,* 42–49. https://doi.org/10.1016/j.socscimed.2017.11.008

Ortega, S. T., Johnson, D. R., Beeson, P. G, & Craft, B. J. (1994). The farm crisis and mental health: A longitudinal study of the 1980s, *Rural Sociology, 59*(4), 598–619. https://doi.org/10.1111/j.1549-0831.1994.tb00550.x

Oyserman, D. (2007). Social identity and self-regulation. *Social Psychology: Handbook of Basic Principles* (2nd ed.). Gilford Press.

Oyserman, D. & Destin, M. (2010). Identity-based motivation: Implications for intervention. *Journal of Personality and Social Psychology, 38*(7), 1001–1043. https://doi.org/10.1177/0011000010374775

Perdue, M. (2018). A deeper look at the CDC findings on farm suicides [Blog post]. https://nfu.org/2018/11/27/cdc-study-clarifies-data-on-farm-stress/

Peter, G., Bell, M. M., & Jarnagin, S. (2000). Coming back across the fence: Masculinity and the transition to sustainable agriculture. *Rural Sociology, 65*(2), 215–233. https://doi.org/10.1111/j.1549-0831.2000.tb00026.x

Peterson, C., Stone, D., Marsh, S., Schumacher, P., Tiesman, H., McIntosh, W., Lokey, C. N., Trudeau, A. T., Bartholow, B., & Luo, F. (2018). Suicide rates by major occupational group—17 states, 2012 and 2015. *Morbidity and Mortality Weekly Report, 67*(5), 1253–1260. http://dx.doi.org/10.15585/mmwr.mm6745a1

Polain, J. D., Berry, H. L., Hoskin, J. O. (2011). Rapid change, climate adversity and the next 'big dry': Older farmers' mental health. *Australian Journal of Rural Health, 19*, 239–243. https://doi.org/10.1111/j.1440-1584.2011.01219.x

Ramussen, W. D. (1989). *Taking the university to the people: Seventy-five years of Cooperative Extension*. Iowa State University Press.

Reed II, A. (2002). Social identity as a useful perspective for self-concept-based consumer research. *Psychology & Marketing, 19(*3), 235–266. https://doi.org/10.1002/mar.10011

Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian e-Journal for the Advancement of Mental Health, 4*(3), 1–34. http://dx.doi.org/10.5172/jamh.4.3.218

Ringgenberg, W. J. W (2014). *Trends and characteristics of occupational suicide and homicide in farmers and agricultural workers, 1992-2010.* (Master's Thesis). University of Iowa. https://doi.org/10.17077/etd.3k25y6k2

Rosmann, M. R., (2003). Agricultural behavioral health: In critical need. *Partners in Agricultural Health, Module V* [PDF]. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.467.2074&rep=rep1&type=pdf

Roy, P., Tremblay, G., & Robertson, S. (2014). Help-seeking among male farmers: Connecting masculinities and mental health. *Sociologia Ruralis, 54*(4), 460–476. https://doi.org/10.1111/soru.12045

Roy, P., Tremblay, G. Robertson, S. & Houle, J. (2017). "Do it all by myself": A salutogenic approach of masculine health practice among farming men coping with stress. *American Journal of Men's Health*, *11*(5), 1536–1546. http://doi.101177/1557988315619677

Rural Health Information Hub. (2018). *Rural mental health.* https://www.ruralhealthinfo.org/topics/mental-health#statistics

Rusch, N., Corrigan, P. W., Wassel, A., Michaels, P., Larson J. E., Olschewski, M., Wilkniss, S., Batia, K. (2009). Self-stigma, group identification, perceived legitimacy of discrimination and mental health service use. *British Journal of Psychiatry, 195*(6), 551–552 . https://doi.org/10.1192/bjp.bp.109.067157.

Saane, B., Mykletun, A., Moen, B.E., Dahl, A. A., & Tell, G. S. (2004). Farmers are at risk for anxiety and depression: The Hordland Health Study. *Occupational Medicine, 54*(2), 92–100. https://doi.org/10.1093/occmed/kqh007

Schomerus, G. (2008). Stigma and its impact on help-seeking for mental disorders: What do we know?. *Epidemiologia e Psichiatria Sociale, 17*(1), 31–37. https://doi.org/10.1017/S1121189X00002669

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The Theory of Reasoned Action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research, 15*(3), 325–343. https://doi.org/10.1086/209170

Snell, K. (2018). Washington politics adding to mental health crisis among farmers. *National Public Radio (NPR).* https://www.npr.org/2018/05/17/611982116/washington-politics-adding-to-mental-health-crisis-among-farmers

South Dakota State University Extension. (n.d.). *Farm stress.* https://extension.sdstate.edu/tags/farm-stress

Swierenga, R. P. (1997). The little white church: Religion in rural America. *Agricultural History, 71*(4), 415–441. https://www.jstor.org/stable/3744470

Tajfel, H. & Turner, J. (1979). An integrative theory of intergroup conflict. *The Social Psychology of Intergroup Relations*, 33–47. Brooks/Cole.

Tepper, L., Rogers, S. A., Coleman, E. M., Malony, H. N. (2001). The prevalence of religious coping among persons with persistent mental illness. *Psychiatric Services, 52*(5), 660–665. https://doi.org/10.1176/appi.ps.52.5.660

Terry, D., & Hogg, M. A. (1996). Group norms and the attitude-behavior relationship: A role for group identification. *Personality and Social Psychology Bulletin, 22*(8), 776–793. https://doi.org/10.1177/0146167296228002

Texas A&M AgriLife Extension (2016). *Texas A&M AgriLife Extension Service strategic plan: Imperatives, goals, and objectives. Fiscal years 2017-2021* [PDF]. https://cdn-ext.agnet.tamu.edu/wp-content/uploads/2014/07/txextension-strategic-plan-2017-2021.pdf

Texas A&M AgriLife Extension Director's Office (n.d.). *Regional map* [MAP]. Retrieved July 25, 2019 from Texas AgriLife Extension Director's Office.

Texas A&M AgriLife Extension Service (n.d.). *About.* https://agrilifeextension.tamu.edu/about/

Texas A&M AgriLife Extension Service. (2019). *National Health Outreach Conference*. https://agrilifeextension.tamu.edu/nhoc/program/112-2/

Texas Department of State Health Services. (2013). *Urban and Rural Counties.* https://www.dshs.texas.gov/chs/hprc/counties.shtm

Thomas, D., MacDowell, M., Glaser, M. (2012). Rural mental health workforce needs assessment: A national survey. *Rural and Remote Health, 12*(2176). 1–12. https://www.rrh.org.au.

Thompson, B. (2006). *Foundations of behavioral statistics: An insight-based approach*. The Guilford Press.

Truchot, D., & Andela, M. (2018). Burnout and hopelessness among farmers: The Farmers Stressors Inventory. *Social Psychiatry and Psychiatric Epidemiology, 53*, 859–867. https://doi.org/10.1007/s00127-018-1528-8

U.S. Department of Agriculture. (2018). *USDA strategic plan: FY 2018-2022.* https://www.usda.gov/sites/default/files/documents/usda-strategic-plan-2018-2022.pdf

Vinopal, C. (2018). For farmers, talking about mental health used to be taboo. Now there's #AgTwitter. *PBS News Hour.* Washington D.C.: Public Broadcasting Service. https://www.pbs.org/newshour/nation/for-farmers-talking-about-mental-health-used-to-be-taboo-now-theres-agtwitter

Vogel, D. L., Wade, N. G., & Haake, S. (2006). Measuring the self-stigma associated with seeking psychological help. *Journal of Counseling Psychology, 53*(3), 325–337. https://doi.org/10.1037/0022-0167.53.3.325

Vogel, D. L., Wade, N. G., Wester, S. R., Larson, L., & Hackler, A. H. (2007). Seeking help from a mental health professional: The influence of one's social network. *Journal of clinical psychology, 63*(3), 233–245. https://doi.org/10.1002/jlcp.20345

Walker, J. L. & Walker, L. J. S. (1988). Self-reported stress symptoms in farmers. *Journal of Clinical Psychology, 44*(1), 10–16.

Wang, P. S., Angermeyer, M., Borges, G., Bruffaerts, R., Tat Chiu, W., DE Dirolamo, G., Fayyad, J., Gureje, O., Haro, J. M., Huang, Y., Kessler, R. C., Kovess, V., Levinson, D., Nakene, Y., Oakley Brown, M. A., Ormel, J. H., Posada-Villa, J., Aguilar-Gaciola, S., Alonso, J., Lee, S., Heeringa, S., Pennell, B. E., Chatterji, S., Ustun, T. B. (2007). Delay and failure in treatment seeking after first onset of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry, 6*(3), 177–185. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2174579/pdf/wpa060177.pdf

Wilson, C., Deane, F. P., Ciarrochi, J. V., & Rickwood, D. (2005). Measuring help seeking intentions: Properties of the General Help Seeking Questionnaire. *Canadian Journal of Counseling, 39*(1), 15–28. https://pdfs.semanticscholar.org/d31b/e74288542a115e6cc61cd33b8367a5ed1fc6.pdf

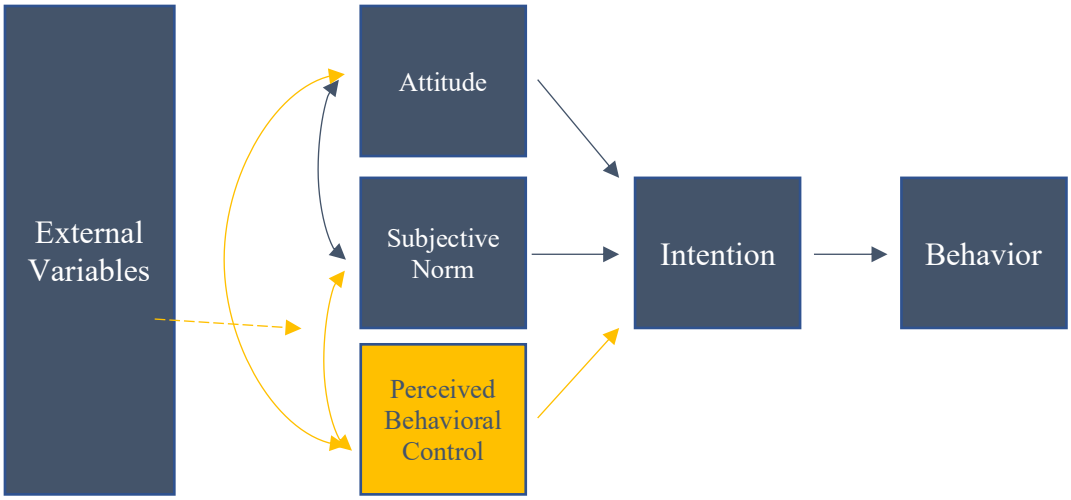
World Health Organization (2001*). Atlas of mental health resources in the world* [PDF]. https://apps.who.int/iris/bitstream/handle/10665/66910/WHO_NMH_MSD_MDP_01.1.pdf

World Health Organization (2017*). Mental health Atlas –2017* [PDF]. https://apps.who.int/iris/bitstream/handle/10665/272735/9789241514019-eng.pdf?ua

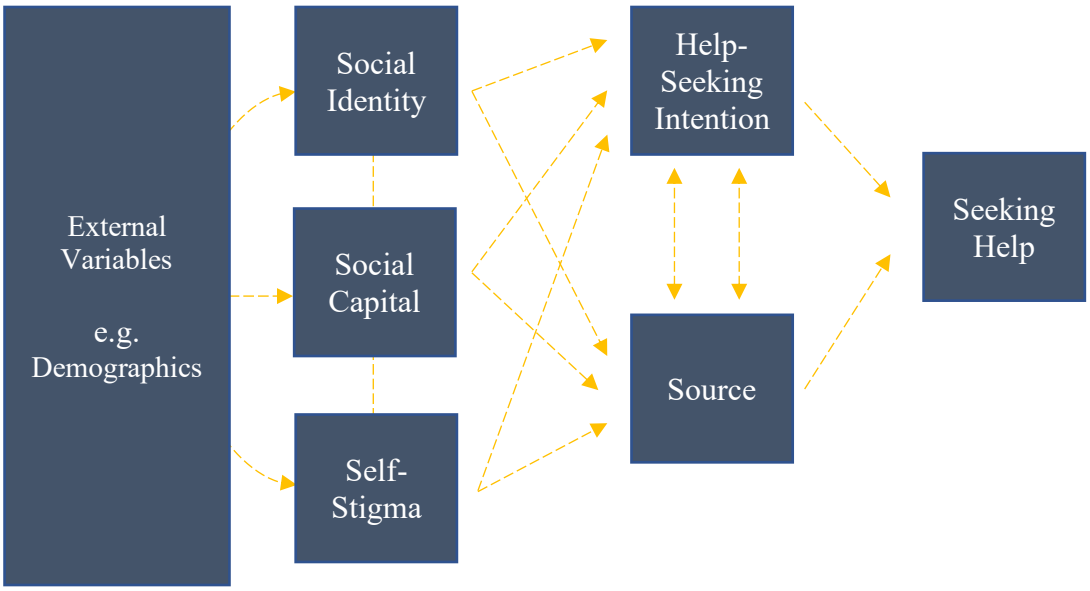
APPENDIX A

MODELS AND CHARTS

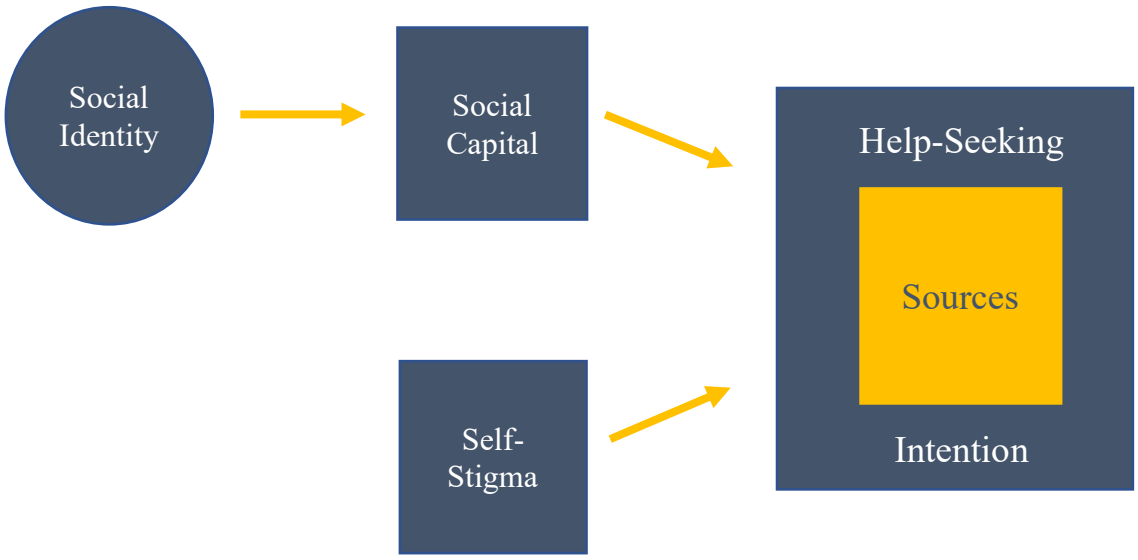
Modified Theory of Planned Behavior Model Adapted from Azjen (1991)



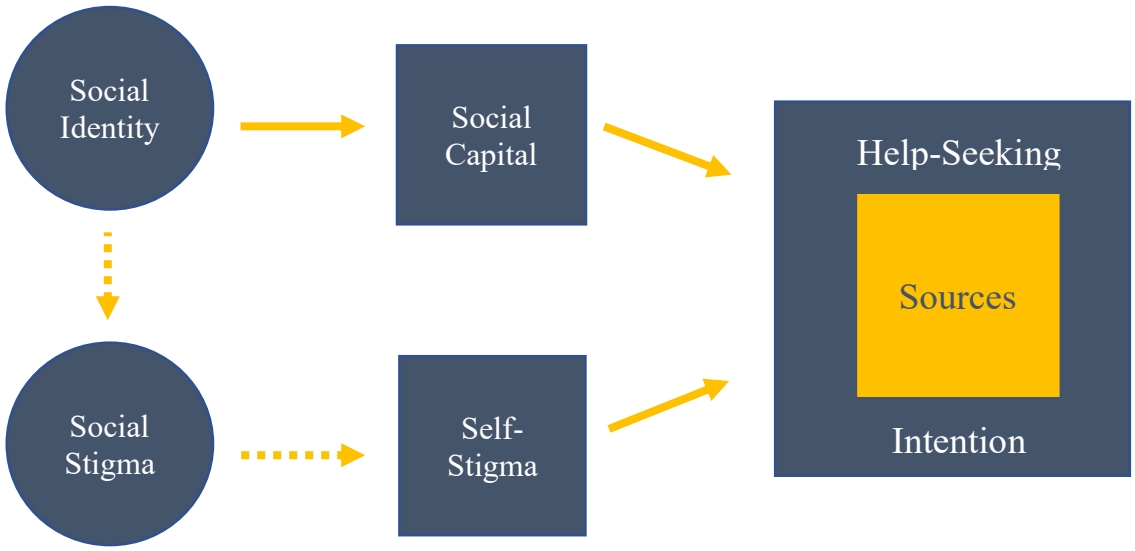
Conceptual Model Adapted from Fishbein and Azjen's (1975) Theory of Reasoned Action



Model of Mediated Help-Seeking



Proposed Model for Future Research



APPENDIX B

MENTAL HEALTH RESOURCES

If you would like to know more about this study, you can view the Information Sheet. Please note that this document might open in another window. If you view the information sheet, you will need to return to the original window to continue the survey.

While it is not anticipated, if at any time while taking this survey, you feel as though you need help, please use the following resources.

In an EMERGENCY, dial 911.

National Suicide Prevention Lifeline
1-800-273-8255: **Available 24/7**

National Alliance on Mental Illness Helpline
1-800-950-6264: **M-F, 10 a.m.-6 p.m. ET**

Farm Aid Farmer Hotline
1-800-327-6243: **M-F, 9 a.m.-5 p.m. ET**

APPENDIX C

COIC ITEMS AND RESPONSE CATEGORIES

This explores the extent to which you see yourself as an agricultural producer by occupation. Please answer the questions below by selecting the choice that best corresponds with how much you agree or disagree with each statement.

1	2	3	4	5	6
Not Applicable	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

I very much identify with agricultural producers in my area.	1 2 3 4 5 6
In general, I'm glad that I'm an agricultural producer.	1 2 3 4 5 6
Being a part of the larger group of agricultural producers is an important reflection of who I am.	1 2 3 4 5 6
What happens to an agricultural producers as a whole will have an effect on what happens in my life.	1 2 3 4 5 6
I have a strong sense of belonging or attachment to other agricultural producers.	1 2 3 4 5 6
When someone criticizes agricultural producers, it feels like a personal insult.	1 2 3 4 5 6
My regular social contacts and social relationships are with other agricultural producers.	1 2 3 4 5 6
My agricultural production activities distinguish me from those who are not agricultural producers.	1 2 3 4 5 6
I consider myself to be a typical agricultural producer in this area.	1 2 3 4 5 6

What is the proportion of people you met socially during the past month who you consider either a full- or part-time farmer?

- 0-10%
- 11-35%
- 36-55%
- 56-75%
- 76-100%

What is the total area of land you own?

- Less than 100 acres
- 100-299 acres
- 300-599 acres
- 600-1500 acres
- Greater than 1500 acres

Estimate the average number of hours per week that you worked on farming/property-related activities over the past 12 months.

- Less than 16 hours
- 17-34 hours
- 35-50 hours
- 51-69 hours
- Greater than 70 hours

Please mark the descriptor/term that best fits your occupational identity:

- The majority of my income is derived from being an agricultural producer
- I am an agricultural producer part-time and hold another job that serves as my primary source of income.
- I am an agricultural producer less than part-time and don't consider it a source of income.

APPENDIX D

PERSONAL SOCIAL CAPITAL SCALE ITEMS AND RESPONSE CATEGORIES

These questions address your social relationships and networks. Please answer the questions below by selecting the number that best corresponds with each item.

1	2	3	4	5
All	**Most**	**Some**	**Few**	**None**

How many of the people in each of the following categories do you keep a routine contact?	
Your immediate family members	1 2 3 4 5
Your relatives	1 2 3 4 5
People in your local community	1 2 3 4 5
Your friends	1 2 3 4 5
Your coworkers/employees/employer	1 2 3 4 5
Other agricultural producers	1 2 3 4 5
Others in the agriculture industry (salesman, technicians, insurance, etc)	1 2 3 4 5
Others not listed. Please list _____	1 2 3 4 5

Among the people in each of the following categories, how many can you trust?	
Your relatives	1 2 3 4 5
People in your local community	1 2 3 4 5
Your friends	1 2 3 4 5
Your coworkers/employees/employer	1 2 3 4 5
Other agricultural producers	1 2 3 4 5
Others in the agriculture industry (salesman, technicians, insurance, etc)	1 2 3 4 5
Others not listed. Please list _____	1 2 3 4 5

Among people in each of the following categories, how many will definitely help you upon your request?					
Your immediate family members	1	2	3	4	5
Your relatives	1	2	3	4	5
People in your local community	1	2	3	4	5
Your friends	1	2	3	4	5
Your coworkers/employees/employer	1	2	3	4	5
Other agricultural producers	1	2	3	4	5
Others in the agriculture industry (salesman, technicians, insurance, etc)	1	2	3	4	5
Others not listed. Please list:	1	2	3	4	5

When people in all the following categories are considered, how many possess the following assets/resources?					
Certain political power	1	2	3	4	5
Wealth or owners of an enterprise or company	1	2	3	4	5
Broad connections with others	1	2	3	4	5
High reputation/influential	1	2	3	4	5
With high school or more education	1	2	3	4	5
With a professional job	1	2	3	4	5
With agricultural background/experience	1	2	3	4	5
With mental health education/experience	1	2	3	4	5

APPENDIX E

SSOSH ITEMS AND RESPONSE CATEGORIES

People at times find that they face problems for that they consider seeking help for. This can bring up reactions about what seeking help would mean. Please use the 5-point scale to rate the degree to which each item describes how you might react in this situation.

1	**2**	**3**	**4**	**5**
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

I would feel inadequate if I went to a therapist for psychological help.	1	2	3	4	5
My self-confidence would NOT be threatened if I sought professional help.	1	2	3	4	5
Seeking psychological help would make me feel less intelligent.	1	2	3	4	5
My self-esteem would increase if I talked to a therapist.	1	2	3	4	5
My view of myself would not change just because I made the choice to see a therapist.	1	2	3	4	5
It would make me feel inferior to ask a therapist for help.	1	2	3	4	5
I would feel okay about myself if I made the choice to seek professional help.	1	2	3	4	5
If I went to a therapist, I would be less satisfied with myself.	1	2	3	4	5
My self-confidence would remain the same if I sought professional help for a problem I could not solve.	1	2	3	4	5
I would feel worse about myself if I could not solve my own problems.	1	2	3	4	5

Items 2, 4, 5, 7, and 9 are reverse scored.

APPENDIX F

GHSQ ITEMS AND RESPONSE CATEGORIES

Please indicate your response by choosing the number that best describes your intention to seek help from each source that is listed.

1	2	3	4	5	6	7
Extremely Unlikely		**Unlikely**		**Likely**		**Extremely Likely**

If you were having a personal or emotional problem, how likely is it that you would seek help from the following people?	
Intimate partner (girlfriend, boyfriend, spouse, etc.)	1 2 3 4 5 6 7
Friend (not related to you)	1 2 3 4 5 6 7
Neighbor or community member	1 2 3 4 5 6 7
Other relative or family member	1 2 3 4 5 6 7
Minister or religious leader (e.g. Pastor, Priest, Church leader)	1 2 3 4 5 6 7
Mental health professional (e.g. psychologist, social worker, counselor)	1 2 3 4 5 6 7
Phone helpline (e.g. National suicide hotline)	1 2 3 4 5 6 7
Doctor / General Practitioner	1 2 3 4 5 6 7
Public Health Department	1 2 3 4 5 6 7
County Extension Agent	1 2 3 4 5 6 7
Fellow agricultural producer (e.g. farmer, rancher)	1 2 3 4 5 6 7
Other in agriculture industry (e.g. salesman, technician, insurance)	1 2 3 4 5 6 7
I would not seek help from anyone	1 2 3 4 5 6 7
I would seek help from other not listed above. (Please list in the space provided, e.g. coworker. If no, leave blank	1 2 3 4 5 6 7

If you were experiencing suicidal thoughts, how likely is it that you would seek help from the following people?	
Intimate partner (girlfriend, boyfriend, spouse, etc.)	1 2 3 4 5 6 7
Friend (not related to you)	1 2 3 4 5 6 7
Neighbor or community member	1 2 3 4 5 6 7
Other relative or family member	1 2 3 4 5 6 7
Minister or religious leader (e.g. Pastor, Priest, Church leader)	1 2 3 4 5 6 7
Mental health professional (e.g. psychologist, social worker, counselor)	1 2 3 4 5 6 7
Phone helpline (e.g. National suicide hotline)	1 2 3 4 5 6 7
Doctor / General Practitioner	1 2 3 4 5 6 7
Public Health Department	1 2 3 4 5 6 7
County Extension Agent	1 2 3 4 5 6 7
Fellow agricultural producer (e.g. farmer, rancher)	1 2 3 4 5 6 7
Other in agriculture industry (e.g. salesman, technician, insurance)	1 2 3 4 5 6 7
I would not seek help from anyone	1 2 3 4 5 6 7
I would seek help from other not listed above. (Please list in the space provided, e.g. coworker. If no, leave blank)	1 2 3 4 5 6 7

APPENDIX G

PERSONAL CHARACTERISTICS

1. Year of birth
2. Gender
    a. Male
    b. Female
    c. Non-binary
    d. Prefer to self-describe: _____
    e. Prefer not to say
3. Marital Status
    a. Single
    b. Married
    c. Divorced
    d. Widowed
4. Indicate your involvement in the agriculture industry.
    a. Agricultural producer
    b. Other: _____
5. Select the sector or commodity group(s) with which you associate.
    a. Livestock / Livestock Products (Select all that apply)
        i. Broiler chickens
        ii. Cattle and calves
        iii. Dairy (cattle, goats)
        iv. Goats
        v. Hogs
        vi. Layers
        vii. Sheep
        viii. Turkeys
        ix. Other(s) not listed: _____
        x. None
    b. Crops (Select all that apply)
        i. Beans
        ii. Cabbage
        iii. Carrots
        iv. Corn
        v. Cotton
        vi. Cucumbers
        vii. Grapefruit
        viii. Grapes
        ix. Hay, Haylage
        x. Melons
        xi. Oats

xii. Oranges
xiii. Peaches
xiv. Peanuts
xv. Pecans
xvi. Peppers
xvii. Plants and foliage
xviii. Potatoes
xix. Pumpkins
xx. Rice
xxi. Sorghum
xxii. Soybeans
xxiii. Spinach
xxiv. Squash
xxv. Sunflower
xxvi. Wheat
xxvii. Other(s) not listed: _____
xxviii. None

6. How many years have you been working as an agricultural producer?
    a. None
    b. 5 years or less
    c. 6-10 years
    d. 11 years or more

APPENDIX H

END OF SURVEY DRAWING

Thank you for participating in this survey! If you would like to be entered in a drawing for a $100 gift card, please provide your contact information below. This information will only be used to contact winners. If not, please leave these fields blank and continue to submission.

Contact Information:

First Name: _____
Email or Phone: _____

APPENDIX I

IRB DOCUMENTATION

DIVISION OF RESEARCH

TEXAS A&M UNIVERSITY

APPROVED PENDING MODIFICATIONS

August 26, 2019

Title:	Tough Enough: The Influence of Social Identity, Social capital, and Self-Stigma of Mental Health on Help Seeking Intentions of Production Agriculturalists
Investigator:	Robert Strong Jr, PhD
IRB ID:	IRB2019-0648
Submission Type	Initial Review
Reference Number:	095144

This submission has been reviewed by the IRB and the following revisions/clarifications are required in order to complete the review process.

1. The Department Chair must sign off in order for us to finalize approval for this study. At this time C C. Scott Shafer has still not signed off. Please hold this on your side until you have confirmed that he has signed off then send it back to us so we can finalize the approvals.

Please log into the iRIS online application at http://iris.tamu.edu to revise the study application and supporting documents.

If you need technical assistance with the iRIS submission system, the iRIS Support Team is available at 979.845.4969. For questions about the IRB application or review process, please contact the Human Research Protection Program at 979.458.4067.

Thank you for your cooperation.

APPENDIX J

INTRODUCTORY EMAIL TO TEXAS A&M AGRILIFE EXTENSION AGENTS

September 10, 2019

Howdy!

My name is Carrie Baker and I'm a master's student at Texas A&M University. I'm currently pursuing a graduate degree through the Department of Agricultural Leadership, Education, and Communications. As you may or may not already know, I have been given the opportunity to partner with Texas A&M AgriLife Extension to distribute my thesis research. Before I tell you about the details of what this entails, I want to tell you a little about my research and why I chose the topic I did.

The purpose of my study is to better understand the relationship between social identity, social capital, and self- stigma and also investigate how these variables affect the mental health help-seeking intentions of agricultural producers and the source from which they're likely to seek help. This will be achieved through a short, 15-minute. The respondents' answers are completely anonymous. However, at the end, they have the opportunity to enter in contact information to enter them in a drawing for two chances at winning a $100 gift card. This information will only be used to contact the winners and will not be used for data analysis purposes.

Preliminary studies I have found show that due to a number of factors, agricultural producers are at an increased risk for suicide and mental health problems. Other data suggests that Texas producers could be at an even higher risk due to the availability and accessibility of mental healthcare in the state. Mental Health America created a ranking system to show where states fell in comparison to others in terms of prevalence of mental health and access to care. The ranking system includes the 50 states and the District of Columbia. According to Mental Health America, Texas ranks 43rd overall and 50th in terms of access to care.

This means that Texas is one of the states with the highest prevalence of mental illness and the lowest access to care. Unfortunately, this is only intensified in rural areas. The U.S. Health Resources and Services Administration shows that all rural counties in Texas are designated as Medically Underserved Areas. My hope is that results from this survey can provide recommendations for policymakers and educators working to provide effective mental health training and programming for agricultural communities. I believe this study has the potential to change how mental health is perceived and discussed within the industry and inform statewide strategies aimed at increasing help-seeking intentions.

I believe this research holds great potential, but without willing respondents and accurate data, no efforts to fight the growing mental health concerns will succeed. While I do not ask about

medical history and the survey is completely anonymous, any conversation surrounding mental health can be tough, especially in the agriculture industry. To increase survey response, I have included the two $100 gift cards as an incentive. However, as per requirements set by the University and my department, I'm required to follow a regimented distribution plan that involves sending participants a total of five emails. This is where I'll need your help.

I'll be providing you with five emails that I'd like you to forward, on the days that they'll need to be sent out. In total, we'll be sending out five emails over a period of roughly two weeks. After the initial email, we will send a follow-up email with a reminder and the survey link every three days. All you'll need to do is forward the email I have sent you to those in your email list. These emails are sent multiple times to help remind potential participants and hopefully increase response rate.

The more responses we are able to collect, the more accurate the data that will inform future strategies and policies aimed toward increasing help-seeking behavior in production agriculturalists. Before we can identify ways to serve those struggling in our community, we first need to better understand the issue at hand. The hope is that this survey will be a step in the right direction to achieve that goal within Texas agriculture. I will do everything in my power to make sure that you have the information and resources necessary to ensure the success of this study. **We will begin survey distribution this Friday (September 13).** I will be sending out a sheet outlining the process step-by- step, so be on the lookout for that.

If you have any questions about the background of my study or any proposed plans, I am more than happy to discuss those. You can contact me anytime at carrie_baker@tamu.edu or by phone at (309) 368-2279.

Thanks & Gig 'em!

Carrie Baker
223 AGLS; 2116 TAMU
College Station, TX 77843-2116
Fax. 979.845.6296 | carrie_baker@tamu.edu

APPENDIX K

SURVEY PROTOCOL EMAIL TO TEXAS A&M AGRILIFE REGIONAL

PROGRAM LEADERS

September 12, 2019

Howdy!

Below is the overall protocol through the duration of this study. This gives you as the RPL a timeline and also details what will occur at each step of the process. If you have any questions, or if anything is unclear – please let me know!

Wed, September 11 | INTRO EMAIL 1: First, you all will send an email to your Extension Agents introducing me and briefly explaining the survey protocol so that your agents are aware of my relationship to you all and the support the survey has from AgriLife. **In this email you'll need to COPY ME so that I can reply all for all further emails to your agents.** You'll also attach the PDF letter I send to you titled "Carrie Baker _Introduction Final PDF" which provides details on who I am and why I've partnered with you all to distribute the survey.

Thur, September 12 | INTRO EMAIL 2: I will REPLY ALL to the first email that you just sent and reintroduce myself to your Extension Agents and provide them with my contact information. In this email I will provide more in depth information on the survey protocol (I will attach the PDF entitled "Survey Protocol_Final PDF").

Fri, September 13 | OFFICIAL START - SURVEY EMAIL 1: I will send your Extension Agents the FIRST email that they need to send to producers. This email just introduces the survey and asks participants to be on the lookout. **It will include the Information Sheet (PDF), but it does not include a survey link (yet).** They will need to FORWARD that to those in their email list and EMAIL ME, letting me know how many individuals they forwarded that to and include any unsuccessful or undelivered attempts.

Mon, September 16 | SURVEY EMAIL 2: I will send your Extension Agents the SECOND email that they need to send to producers. **This email will introduce the survey and include the Information Sheet (PDF) and anonymous survey link.** They will need to FORWARD that email to those in their email list.

Thur, September 19 | SURVEY EMAIL 3: I will send your Extension Agents the THIRD email that they need to send to producers. **This email will introduce the survey and include the Information Sheet (PDF) and anonymous survey link.** They will need to FORWARD that email to those in their email list.

Mon, September 23 | SURVEY EMAIL 4: I will send your Extension Agents the FOURTH email that they need to send to producers. **This email will introduce the survey and include**

the Information Sheet (PDF) and anonymous survey link. They will need to FORWARD that email to those in their email list.

Thur, September 26 | FINAL EMAIL - SURVEY EMAIL 5: I will send your Extension Agents the FIFTH AND FINAL email that they need to send to producers. **This email will introduce the survey and include the Information Sheet (PDF) and anonymous survey link.** They will need to FORWARD that email to those in their email list.

Mon, September 30 | OFFICIAL END OF SURVEY: I will go in and manually close the survey. All links sent within emails will no longer be live.

APPENDIX L

SURVEY PROTOCOL EMAIL TO TEXAS A&M AGRILIFE EXTENSION AGENTS

September 12, 2019

Howdy!

Below is the protocol that we would like to follow as best as possible for the distribution of the survey. Overall, we will have you send out a total of five email to provide producers with ample opportunities and reminders to take our survey. In this protocol, we're following Dillman, Smyth, and Christian's (2014) Tailored Design Method to help improve accuracy and response. I will send you **five emails with an attached Information Sheet (PDF).** I am required to send the information sheet out to participants, as it describes the survey in detail and provides information regarding consent, risk, benefits, etc. **Producers WILL NOT be required to give any form of written consent.** This document explains that by continuing to take the survey and submit their responses, they are consenting to participate.

I have drafted each email for you. All that you'll need to do as an Extension Agent, is to forward the email I send to you to your email lists and ensure that when you do, the PDF is attached.

- The first email will serve as an introduction and will NOT include the survey link. It will simply inform producers of a survey to come.
- The second email will introduce the survey and also include a link to the survey, inviting participants to participate.
- The third, fourth, and fifth emails will thank those who have already participated in the survey and invite those who have not yet participated. It will also include a survey link.

The first email will be sent out on a predetermined date. Follow-up emails will be sent every three days as per the protocol I'm required to follow. **When you send these emails, I'll need you to also email me (carrie_baker@tamu.edu) the number of individuals who you emailed it to and the number of unsuccessful or undeliverable attempts (if applicable). You'll only need to do this on the FIRST email (as the assumption is you'll send it to the same individuals all five times. The following is the schedule that we will follow. I will send emails to you on these days and all you'll need to do is forward them on.**

September 13 - Forward email, Make sure PDF is attached
September 16 - Forward email, Make sure PDF is attached
September 19 - Forward email, Make sure PDF is attached
September 23 - Forward email, Make sure PDF is attached (Following Monday)
September 26 - Forward email, Make sure PDF is attached

On **September 30**, I will go in and manually CLOSE the survey. The link sent in the emails will no longer be live. I realize that this seems extensive. I promise that with the information and resources I provide, I will try to keep this process as easy as possible for you. We have followed this method not only to increase response rate and ensure we can draw accurate conclusions from the data.

APPENDIX M

RECRUITMENT EMAILS

Hello,

As you know, being an agricultural producer can be difficult and stressful. In 2018, the Center for Disease Control, issued a report which stated that the farming, fishing, and forestry industries ranked in the top ten for occupational suicide rating. Since then, the industry has turned its focus toward raising awareness for mental health in our communities.

At Texas A&M AgriLife Extension, we are devoted to the health, safety, and prosperity of those involved with agriculture. To help further that mission, we have partnered with Texas A&M University to conduct a research study that will help us better understand our role in the conversation on mental health. We want to know how to help, and as an agriculture producer in the state of Texas, we need your help.

Through this survey, we are seeking to understand how producers make decisions to seek emotional support in times of need. Your responses will enable us to better understand how we can better serve agricultural producers who may be struggling in our community.

We are searching for agricultural producers in the state of Texas who are between the ages of 18-89. Your responses will be completely anonymous. You could be one of 1,000 participants to complete the survey. Those who do will have the opportunity to be entered in a drawing. Two winners will receive a $100 Visa gift card, courtesy of Montgomery County Farm Bureau.

We look forward to sharing this survey with you soon and invite you to be on the lookout for its release!

If you have any questions about this study, feel free to contact Carrie Baker at carrie_baker@tamu.edu or Dr. Robert Strong at r-strong@tamu.edu.

Thank you!

IRB#: IRB2019-0648D
IRB APPROVAL DATE: 8/23/2019
IRB EXPIRATION DATE: 8/22/2020

Hello,

We need your help. A few days ago you might have received an email from us, talking about a survey regarding mental health.

As you know, being an agricultural producer can be difficult and stressful. In 2018, the Center for Disease Control, issued a report which stated that the farming, fishing, and forestry industries ranked in the top ten for occupational suicide rating. Since then, the industry has turned its focus toward raising awareness for mental health in our communities.

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Through this survey, we are seeking to understand how producers make decisions to seek emotional support in times of need. Your responses will enable us to better understand how we can better serve agricultural producers who may be struggling in our community.

We are searching for agricultural producers in the state of Texas who are between the ages of 18-89. You could be one of 1,000 participants to complete the survey. Those who do will have the opportunity to be entered in a drawing. Two winners will receive a $100 Visa gift card, courtesy of Montgomery County Farm Bureau.

We invite you to complete this short, 15-minute survey. Your responses are completely anonymous. If you have any questions about this study, feel free to contact Carrie Baker at carrie_baker@tamu.edu or Dr. Robert Strong at r-strong@tamu.edu.

If you'd like to participate, please click the link below.

[survey link]

Thank you for your consideration!

IRB#: IRB2019-0648D
IRB APPROVAL DATE: 8/23/2019
IRB EXPIRATION DATE: 8/22/2020

Hello,

We need your help. A few days ago you might have received an email from us, talking about a survey regarding mental health.

As you know, being an agricultural producer can be difficult and stressful. In 2018, the Center for Disease Control, issued a report which stated that the farming, fishing, and forestry industries ranked in the top ten for occupational suicide rating. Since then, the industry has turned its focus toward raising awareness for mental health in our communities.

At Texas A&M AgriLife Extension, we are devoted to the health, safety, and prosperity of those involved with agriculture. To help further that mission, we have partnered with Texas A&M University to conduct a research study that will help us better understand our role in the conversation on mental health. We want to know how to help, and as an agriculture producer in the state of Texas, we need your help.

Through this survey, we are seeking to understand how producers make decisions to seek emotional support in times of need. Your responses will enable us to better understand how we can better serve agricultural producers who may be struggling in our community.

We are searching for agricultural producers in the state of Texas who are between the ages of 18-89. You could be one of 1,000 participants to complete the survey. Those who do will have the opportunity to be entered in a drawing. Two winners will receive a $100 Visa gift card, courtesy of Montgomery County Farm Bureau.

For those of you who have responded to our survey, we thank you for your participation. If you have not yet responded, we invite you to complete this short, 15-minute survey. Your responses are completely anonymous. If you have any questions about this study, feel free to contact Carrie Baker at carrie_baker@tamu.edu or Dr. Robert Strong at r-strong@tamu.edu.

If you'd like to participate, please click the link below.

[survey link]

Thank you for your consideration!

IRB#: IRB2019-0648D
IRB APPROVAL DATE: 8/23/2019
IRB EXPIRATION DATE: 8/22/2020

APPENDIX N

INFORMATION SHEET

TEXAS A&M UNIVERSITY HUMAN RESEARCH PROTECTION PROGRAM

INFORMATION SHEET

Title of Research Study: Tough Enough: The Influence of Social Identity, Social Capital, and Self-Stigma of Mental Health on Help-Seeking Intentions of Production Agriculturalists.

Investigator: Dr. Robert Strong, Jr. **Protocol Director:** Carrie Baker

Why am I being asked to take part in this research study?

You are invited to participate in this study because we are trying to understand how producers make decisions to seek emotional support in times of need. Your responses will enable us to better understand how we can better serve agricultural producers who may be struggling in our community.

You were selected as a possible participant in this study because you are an agricultural producer in the state of Texas. You must be between the ages of 18-89 to participate.

Participants who complete the survey will have the opportunity to win a $100 gift card.

Why is this research being done?

The survey is designed to measure your degree of social identity as an agricultural producer, social capital, and self-stigma as well as your help seeking intentions and the sources you would be likely to turn to for help if you were experiencing problems with mental health.

The hope is that through these findings, recommendations for future policy, programming, or health communication and promotion as they relate to mental health in the agriculture industry can be made.

How long will the research last?

It will take about 15 minutes to complete the survey.

What happens if I say "Yes, I want to be in this research"?

If you decide to participate, please click "I Agree" when prompted and begin taking the survey. Once you are finished submit your responses.

What happens if I do not want to be in this research?

Your participation in this study is voluntary. You can decide not to participate in this research and it will not be held against you. You can also decide to leave the study at any time **before completing the survey, by exiting the survey without submitting your responses.**

Is there any way being in this study could harm me?

There is a risk of discomfort, as some of the questions are sensitive. You can skip any question you do not wish to answer, or exit the survey at any point before submitting your responses. Your survey responses are completely anonymous and will not be able to be traced back to you in any way.

What happens to the information collected for the research?

You may view the survey host's confidentiality policy at:
https://www.qualtrics.com/privacy-statement/

This survey is anonymous and no direct personal identifiers will be collected. The results of the research study may be published but no one will be able to identify you.

Who can I talk to?

Please feel free to ask questions regarding this study. You may contact the Protocol Director, Carrie Baker, at **(309) 368-2279 or carrie_baker@tamu.edu** if you have additional questions or concerns.

You may also contact the Human Research Protection Program at Texas A&M University (which is a group of people who review the research to protect your rights) by phone at 1-979-458-4067, toll free at 1-855-795-8636, or by email at irb@tamu.edu for:

- additional help with any questions about the research
- voicing concerns or complaints about the research
- obtaining answers to questions about your rights as a research participant
- concerns in the event the research staff could not be reached
- the desire to talk to someone other than the research staff

MENTAL HEALTH RESOURCES:

While it is not expected, if at any time during or after this survey, you experience severe emotional discomfort, thoughts of suicide, or need immediate assistance regarding your mental health, **please dial 911.** In the event it is not an emergency, but you would like to speak to someone, please contact the following:

National Suicide Prevention Lifeline: 1-800-273-8255
Available 24/7
National Alliance on Mental Illness Helpline: 1-800-950-(6264)
M-F, 10 a.m. - 6 p.m. ET

Farm Aid Farmer Hotline: 1-800-327-6243

M-F, 9 a.m.- 5 p.m. ET

If you want a copy of this consent for your records, you can print it from the screen.

- If you wish to participate, please click the link provided to begin the survey.
- If you do not wish to participate in this study, no action is necessary.