



12-1-2002

Depression and Help-Seeking Behavior of North Dakota Farmers: The Impact of the Farm Crisis

Wanda J. McSparron

Follow this and additional works at: <https://commons.und.edu/theses>

Recommended Citation

McSparron, Wanda J., "Depression and Help-Seeking Behavior of North Dakota Farmers: The Impact of the Farm Crisis" (2002).
Theses and Dissertations. 1040.
<https://commons.und.edu/theses/1040>

This Dissertation is brought to you for free and open access by the Theses, Dissertations, and Senior Projects at UND Scholarly Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of UND Scholarly Commons. For more information, please contact zeinebyousif@library.und.edu.

2002
M1754

DEPRESSION AND HELP-SEEKING BEHAVIOR
OF NORTH DAKOTA FARMERS:
THE IMPACT OF THE FARM CRISIS

by

Wanda J. McSparron
Bachelor of Arts, University of North Dakota, 1990
Master of Arts, University of North Dakota, 1998

A Dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Grand Forks, North Dakota
December, 2002

This dissertation, submitted by Wanda J. McSparron in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

Steve Jacobs, PhD
(Chairperson)

[Signature]

[Signature]

[Signature]

Quincy Guido

This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

Joseph N. Benoit
Dean of the Graduate School

October 9, 2002
Date

PERMISSION

Title Depression and Help-Seeking Behavior of North Dakota Farmers: The
 Impact of the Farm Crisis

Department Counseling

Degree Doctor of Philosophy

In presenting this dissertation in partial fulfillment of the requirements for a graduate degree from the University of North Dakota, I agree that the library of this University shall make it freely available for inspection. I further agree that permission for extensive copying for scholarly purposes may be granted by the professor who supervised my dissertation work or, in her absence, by the chairperson of the department or the dean of the Graduate School. It is understood that any copying or publication or other use of this dissertation or part thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of North Dakota in any scholarly use which may be made of any material in my dissertation.

Signature Wanda J. McFarlane

Date 9-30-02

TABLE OF CONTENTS

LIST OF TABLES	vii
ACKNOWLEDGEMENTS	viii
ABSTRACT	x
CHAPTER	
I. INTRODUCTION AND REVIEW OF THE LITERATURE.....	1
Farm Crisis in North Dakota.....	2
Overview of Depression	7
Gender Difference in Depression.....	9
Depression in Rural versus Urban Settings	11
Definition of “Rural”	12
Depression in the Rural/Farm Population.....	15
Suicide Risk	21
Help-Seeking Behavior	25
Summary	34
Purpose of Study	34
II. METHOD	36
Participants.....	36
Farm Operators	36
Spouse/Partner Participants	39

Procedure	40
Measures	42
Personal Data Questionnaire.....	42
Financial Stress Survey (Hoyt et al., 1995)	43
Center for Epidemiologic Studies Depression Scale (CES-D).....	45
Help-Seeking Questionnaire (Cook & Tyler, 1989).....	46
Hypotheses	47
Data Analyses	48
III. RESULTS	52
Level of Depression	52
Financial Stress	54
Financial Stress and Depressive Symptoms	58
Help-Seeking Behavior.....	62
Demographics and Help-Seeking Behavior.....	65
Spousal/Partner Ratings	67
Generalizability of Sample	70
IV. DISCUSSION	73
Interpretations	75
Limitations of the Study	82
Implications	86
Practical Implications.....	86
Research.....	93

APPENDICES	98
Appendix A Personal Data Questionnaire	99
Appendix B CES-D Scale	101
Appendix C Financial Stress Survey	103
Appendix D Help-Seeking Questionnaire	105
Appendix E Information Letter.....	107
REFERENCES	109

LIST OF TABLES

Table	Page
1. Pearson Correlations Between CES-D Scores, Financial Stress Survey Scores, and Demographic Variables.....	59
2. Partial Correlations between CES-D Scores, Financial Stress Survey Scores, and Demographic Variables.....	60
3. Summary of Simultaneous Regression Analysis for Variables Predicting CES-D Scores	62
4. Mean Category Scores for Help-Seeking Questionnaire	63
5. Pearson Correlations Between Help-Seeking Questionnaire Scores and Demographic Variables	66
6. CES-D Scores, Financial Stress Scores, and Help-Seeking Questionnaire Scores by Spousal/Partner Rating Categories.....	69

ACKNOWLEDGEMENTS

There are many people who have contributed to the initiation and fulfillment of this study. Dr. Sue Jacobs, my chair for this study, has been unfailingly generous with her guidance, suggestions, feedback, and encouragement from the conception of this project to its final revision. I would not have been able to do this study without her assistance every step of the way. She taught me so much. I cannot thank her enough for believing in me, when I did not believe in myself. My other Advisory Committee members, Dr. Cindy Juntunen, Dr. Donald Daughtry, Dr. Ginny Guido, and Dr. John Tyler, have provided invaluable feedback and suggestions. I appreciate their support and generosity to give of their time and knowledge to assist in this study. Kristina Dwyer assisted with entering the data during a very busy time in my life. Francie Linneman added her word-processing expertise to assist in formatting the final version of this manuscript.

The love and support of my husband, David McSparron, have sustained me throughout my doctoral study. He has made my pursuit of a doctorate a reality. I could not have completed this study without his unfailing support and encouragement. He has generously sacrificed his time and effort to make this all possible. In addition, the love and generosity of my parents, Arlan and Janice Dahlen, have been invaluable. They have continued to be supportive throughout all aspects of my life. My daughter, Kallan McSparron, has been a constant blessing in my life and has given a new meaning to my life.

Most especially, I want to thank the farm operators and their spouses/partners who participated in this study. Their willingness to give of themselves has provided valuable information, reaffirming to me the importance of this study. I hope the knowledge gained will contribute to further understanding and assisting farm operators and their spouses/partners who are struggling. This study was close to my heart, as I was raised on a farm and my father is still an active farm operator. I know what great people farmers are and how hard they work. This study is dedicated to them.

ABSTRACT

Little is known about the psychological impact of the current farm crisis. In this study, I examined the incidence of depression and the help-seeking behavior among North Dakota farmers. A secondary purpose was to determine the relationship of economic stress and demographic variables to depression and help-seeking behavior.

A sample of 500 North Dakota farm operators was randomly selected from *Prairie Grains Magazine's* mailing list and asked to participate in a mail survey. One hundred and ninety-nine farm operators and 120 spouses/partners responded. Each participant was asked to anonymously complete and return the Personal Data Questionnaire, Financial Stress Survey, Center for Epidemiologic Studies Depression Scale, and the Help-Seeking Questionnaire. Only the farm operator data was analyzed for this study. The spouse/partner data was used only to obtain basic demographic information and spousal ratings.

Farm operators reported a high rate of depressive symptoms, with 42.3% having CES-D scores at or above the clinical cutoff score of 16. The average level of depression ($M = 14.47$) was significantly greater than the average level found in the general population ($M = 9$). Demographic variables, such as age, marital status, education, and number of years farming, were not correlated with the level of depression. Financial stress, however, was correlated with the level of depression, even when controlling for extraneous sources of stress. Financial stress was a significant predictor of the level of

depression. Younger participants and those farming a fewer number of years reported higher levels of financial stress.

Participants reported a moderate level of willingness to seek help overall. They were more willing to seek help from People in General and Professional Resources in General, compared to mental health professional or clergy. They were least willing to help themselves by expressing negative emotions to others. Young farm operators, who reported less financial stress and had more education, were more willing to seek help from resources overall. Farm operators who exhibited more mood/ behavioral changes (spousal/partner ratings) also reported higher levels of depression and financial stress but were less willing to seek help.

CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

The economic crisis that is currently effecting U.S. agriculture is of serious concern. Many experts fear that the present economic situation is leading to a crisis comparable to the farm crisis of the 1980s. Unprecedented numbers of farm owners/operators are currently at risk of losing their farms, or have already lost their farms, due to mounting debt and diminishing earnings. Farm incomes nationally have dropped 21% from 1996 to 1999 and are projected to decline another 9.2% by the end of 2001. An alarming 200,000 farms have ceased operation within the past three decades and this number is expected to increase (United States Department of Agriculture, 2001).

Due to the serious economic hardship, many farm operators are understandably experiencing high levels of stress and its consequent psychological effects. The relationship between stress and psychological distress is well established. Following the farm crisis of the 1980s, researchers addressed the consequent effects on the mental health of farmers, consistently finding a positive relationship between farm economic hardship and psychological distress (Hoyt, O'Donnell, & Mack, 1995). They found that farm families often display a diverse set of problems and reactions to this economic stress. Such reactions include anxiety, substance abuse, interpersonal violence, marital disruption, as well as depression and attempted suicide (Heffernan & Heffernan, 1986).

Contributing to the seriousness of the problem, farmers and rural residents, in general, are not likely to seek mental health services.

Despite the seriousness of the present crisis, few researchers have examined the psychological impact of this current economic crisis. This study was conducted to determine the level of depression and the help-seeking behavior of North Dakota farmers. In this chapter, I review the literature regarding depression and help-seeking behavior of the farm population. The economic situation in North Dakota will first be discussed, in order to facilitate understanding of the local impact of the current farm crisis. Next, an overview of major depression will be provided, followed by a review of the literature regarding the incidence of depression and suicide in the farm population. Finally, I close the review with a discussion of the help-seeking behavior of rural residents.

Farm Crisis in North Dakota

The current farm crisis is especially significant for the state of North Dakota, which has an agriculturally based economy. Agriculture is the state's leading revenue-producing industry. It is a \$3 billion industry, accounting for 37% of the economic base for the state, followed by energy, manufacturing, and tourism (North Dakota Department of Agriculture, 2001). The state consists of approximately 30,300 farms, with nearly 23,000 principal farm operators. North Dakota leads the nation in the production of spring and durum wheat, with the state producing 42% and 71% of the nation's share, respectively (USDA, 2001). The state is also the nation's leading producer of barley, flax, dry edible beans, pinto beans, and sunflower. Other principle crops include oats, honey, potatoes, sugarbeets, canola and other specialty crops, and livestock (USDA, 1999).

Despite the high production output of many crops, North Dakota farmers are facing serious economic hardship. In a recent North Dakota farm life poll, the majority of respondents (98.5%) agreed that there is currently a farm crisis, with 77.6% perceiving this crisis to be more severe than that of the 1980s (Stofferahn, 1999). The state ranks near the bottom of the nation for net farm income (ranked 42). This is largely due to the poor market value of the crops raised in North Dakota, as well as increasing farm operating expenses. Total farm production expenses have drastically risen since the early 1990s, estimated to have increased \$360 million in North Dakota within a five-year duration. Annual farm expenses averaged \$67,181 per farm in 1992, increasing to \$84,209 per farm in 1999 (USDA, 2001). A major portion of these expenses is comprised of chemical, fertilizer, and seed costs. Meanwhile, the commodity prices have not increased to offset these increasing expenses. For example, the price for spring wheat, the state's main crop, averages approximately \$3.50/bushel. The 2000 crop year saw the lowest average price for wheat since 1981, with an average of \$2.85/bushel (USDA, 2001).

As a result of the high expenses and low commodity prices, total net farm income in the state decreased nearly \$496.2 million from 1993 to 1997. In fact, net income per farm averaged \$5,134 in 1997, compared to \$33,244 in 1996 and \$12,734 in 1995 (USDA, 1997). Farmers fared better in 1998, with the net per farm income equaling \$25,051 (USDA, 1999). However, net income per farm dropped again in 1999, with a net income of \$13,677 (USDA, 2001).

The volatile nature of the net farm income often contributes to mounting debt, as farm operators are unable to predict their income from year to year. Farm debt has

reached its highest level since 1986, with the total of farm debt in North Dakota estimated slightly over \$4 billion (USDA, 2001). Furthermore, in a recent statewide farm poll, the majority of respondents reported a debt-to-asset ratio of 41 to 70 percent (Stofferahn, 1999).

Often described as the worst since the Great Depression of the 1930s, the farm crisis of the 1980s is thought to have been caused by a combination of low commodity prices, high production input costs, and detrimental climatic conditions which led to poor crop output (Harl, 1986). Similar factors are contributing to the current farm crisis. In a recent survey of North Dakota farmers, the majority (67.6%) attributed the current farm crisis to low prices and adverse weather conditions (Stofferahn, 1999). Consequently, the livelihood of many North Dakota farmers is being severely threatened. A large number of farmers face the possibility of being forced to continue operating with considerable debt or to exit farming altogether. In an eight year period from 1992 to 2000, the number of farm operators in the state decreased by 2,700 (USDA, 2001). Furthermore, approximately 42% of farm operators have had to seek additional employment, with nearly half of these farmers (20.1%) working 200 days or more at these second jobs (USDA, 1999).

The future of the small family farm in North Dakota is uncertain. Although the majority of North Dakota farms are owned and operated by an individual or family (67.4%), the small family farms are especially facing economic hardship. They are diminishing in number as the size of farms appear to be increasing, with 44.7% of the farmers in the state farming 1,000 or more acres (USDA, 1999). The average North Dakota farm now consists of approximately 1,300 acres (USDA, 2001).

The current farm economic crisis tends to be adding significant stress to an occupation that is inherently stressful. Operating a farm, by its very nature, is filled with uncontrollable and often unpredictable demands or stressors. In a study examining these stressors, Rosenblatt and Anderson (1981) identified a number of such stressors, including the extreme seasonal variation of work demands and substantial financial investment and risk. Farm income is highly dependent upon a variety of factors, including weather, plant and animal disease, and changes in domestic and international markets or policies (Rosenblatt & Keller, 1983). As a result, farm operators tend to experience an impending threat of economic disaster in ways those in other occupations rarely experience.

Weather conditions, as previously mentioned, are significant uncontrollable factors with which farmers have to contend. Detrimental weather conditions were also major contributors to the 1980s farm crisis. Farm production output is highly dependent upon the weather conditions, which determines the production quantity and quality of the crops. Several areas of the state, such as the Red River Valley and the Devils Lake region, have had to contend with overland flooding in recent years. Although this has not affected the state's overall crop production output in general, it has had a great impact on the economic situation for farmers in these regions due to lost acreage. Furthermore, the weather conditions throughout the state have spurred the development of various crop diseases in recent years, such as fusarium head blight (scab) and various foliar diseases. This was especially a problem in 1997, causing production output to be the lowest since the late 1980s (USDA, 1999). Because of frequent rainfall, the 1999 season was also plagued by crop disease and insect infestation. Wheat was affected by wheat midge and

scab, while sunflowers were affected by head rot and white mold (USDA, 1999). These problems tend to exacerbate economic hardship due to decreased crop yields, adding significant stress to an already stressful occupational situation.

New technology, developed or popularized since the 1980s farm crisis, may also be impacting the stress levels of today's North Dakota farmers. Some technological advances may be helping to diminish somewhat the stress level for the farm operators. Personal computers, for example, are a highly useful tool for many farm operators. Approximately 59% of farm operators in the state currently have access to computers, with 38% utilizing the computers in their farming business. In addition, 47% of farm operators have access to the Internet (USDA, 2001). This has undoubtedly increased their proficiency at managing their farm, as well as provided more immediate updates regarding the weather and the market conditions.

Although such technological advances can be very useful to farmers, they can also create more expenses for the farm operator, thus creating more financial stress. Global positioning, for example, is becoming an increasingly important technological tool for farm operators. Through global positioning, the farmer is better able to monitor all aspects of his farm operation, greatly increasing production yields. However, this new technology is very expensive to acquire. Many North Dakota farmers, consequently, may experience increased stress since they would like to keep up with technology but cannot afford the increased expense. In other words, this new technology, although it has the potential to improve their crop output, may possibly be creating additional stress for North Dakota farmers due to the expense of such technology.

In summary, North Dakota farmers are currently experiencing a serious economic crisis. Given the importance of the agricultural industry for the state, this crisis poses a serious threat to the economy of North Dakota, as well as to the individual farm operators. Farm operators are faced with the threat of losing their farms due to mounting debt. This economic stress is likely causing significant psychosocial stress and has been found to be associated with the incidence of depression in the farm population (Heffernan & Heffernan, 1985; Hoyt, O'Donnell, & Mack, 1995; Lorenz, Conger, & Montague, 1994).

Overview of Depression

The term "depression" is often misused in our society to describe feelings of sadness, loneliness or emptiness. However, major depression is a serious mental disorder, which affects more than 17 million people annually in the United States (National Mental Health Association, 1996). This equates to nearly 6% of the U.S. population. Depression is one of our country's most costly medical illnesses. Each year, depression is estimated to cost our economy approximately \$44 billion in absenteeism from work, lost productivity and direct treatment costs (Greenberg, Stiglin, Finkelstein, & Berndt, 1993).

Major depressive disorder, also referred to as unipolar depression, is listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM IV; American Psychiatric Association, 1994) under the category of mood disorders. Major depressive disorder is characterized by at least one major depressive episode. The DSM IV lists nine symptoms, of which at least five need to be present to meet the criteria for a major depressive episode. These symptoms have to be present for at least two weeks and include the following: (a) persistent depressed mood; (b) markedly diminished pleasure or interest in

previously pleasurable activities; (c) significant weight loss or gain; (d) insomnia or hypersomnia; (e) psychomotor agitation or retardation; (f) fatigue or loss of energy; (g) feelings of worthlessness or inappropriate guilt; (h) diminished ability to think or concentrate; and (i) recurrent thoughts of death or suicide ideation (DSM IV, American Psychiatric Association, 1994). At least one of the symptoms needs to be either depressed mood or loss of interest or pleasure in order to qualify for a major depression diagnosis.

The symptoms of major depression tend to reflect the domains of mood, cognition and behavior/somatic functioning. Mood symptoms are the least varying, with the majority of depressed individuals experiencing feelings of sadness and hopelessness. Often excessive tearfulness accompanies the depressed mood. Similarly, anhedonia is also common, reflecting a loss of interest or pleasure in previously pleasurable activities (DSM IV, American Psychiatric Association, 1994). Cognitive symptoms are often evident as poor concentration, slowed thinking, indecision, rumination, and/or suicide ideation. Finally, somatic symptoms are reflected by vegetative signs, such as sleep and appetite disturbance, psychomotor agitation or retardation and energy loss. The most common pattern of these somatic symptoms involves insomnia, psychomotor retardation, and loss of appetite (Rehm & Tyndall, 1993).

The exact cause of depression remains unknown. Although there may be an infinite number of contributing factors, the mental health profession has addressed biological, psychological and environmental factors that may be involved in the development of depression. As a result, many different theories exist attempting to explain the cause or etiology of major depression, with no single theory completely

explaining the cause of depression. It is generally believed that a combination, or interaction, of environmental and biochemical factors are involved.

Recent research suggests that depression is most prevalent among younger age groups. Between the ages of 16 and 25, the likelihood of a first major depression episode is elevated (Leon, Klerman, & Wichramaratne, 1993). Similarly, the DSM IV reports the average onset of major depressive disorder to be in the mid-20s (American Psychiatric Association, 1994). Recent research suggests that the average age of onset is declining for those born more recently, according to the DSM IV.

Gender Difference in Depression

The majority of those suffering from depression are women, with women twice as likely to experience depression than men. Female-to-male ratios have been estimated between 1.5:1 and 3:1 (Rehm & Tyndall, 1993). Specifically, this disorder afflicts 7.8 million women and 3.2 million men within the U.S. every year (Greenberg et al., 1993). In a 1987 study, Nolan-Hoeksema reviewed the male to female rates of depression reported in previous studies and found an average gender ratio of 1.95:1. More recently, Culbertson (1997) reported this female to male depression ratio to be 1.7:1. According to the DSM IV, the lifetime risk for major depressive disorder in community samples ranges from 10% to 25% for women, while the risk for men has been found to vary from 5% to 12%. These rates seem to be unassociated with ethnicity, education, income or marital status (American Psychiatric Association, 1994).

Although the gender difference appears to be unrelated to other demographic variables, age has been found to be a factor. According to the DSM IV, the highest major depression rates are reported in the 25- to 44-year-old age range. Over age 65, however,

this rate appears to decrease for both genders (American Psychiatric Association, 1994). In contrast, evidence suggests that the gender difference in the experience of major depression tends to reverse after age 65. The incidence of depression has been shown to increase in males over age 65, while it decreases for females (Holmes, 1997).

Reasons for the gender difference in the incidence of depression has been the topic of much research. Historically, a variety of reasons were proposed to explain this gender difference. Some of these explanations include: attributing the difference to a response bias in reporting depressive symptoms, biological factors, psychoanalytic explanations that the female personality structure is more susceptible to depression, sex role differences, learned helplessness experienced more often by females, and a differing response set to a depressed mood (Nolen-Hoeksema, 1987). More recently, Pollack (1998) proposed that the incidence of clinical depression in males may be much higher than typically diagnosed. He reports that men's depression is underdiagnosed due to several factors: (1) men tend to deny depression due to socialization factors; (2) men are less apt to express affect or mood shifts; and (3) clinicians may fail to adequately assess for depression in males due to gender stereotypes.

Pollack (1998) further proposed that the symptoms of depression in men may be quite different than those outlined in the DSM-IV. These symptoms include: withdrawal from relationships, overinvolvement with work, denial of pain, rigid demands for autonomy, avoiding the help of others, change in sexual interest, increase in anger, interest in substance use, denial of sadness and inability to cry, harsh self-criticism, impulsive plans to prepare for care of loved ones in event of own death, change in mood, and concentration, sleep, and/or weight disorders.

Similarly, Real (1997) has also advocated that clinical depression in males is seriously underdiagnosed. He proposed that depression in men is a silent epidemic, such that they hide their depression to avoid stigma of being considered "unmanly" and they attempt to cope through various outlets. Behaviors typically associated with men, including difficulty with intimacy, workaholism, alcoholism, abusive behavior, and rage, are their attempts to escape the depression. In other words, men tend to cope with their depression by exhibiting various unhealthy behaviors. These behaviors, however, only tend to hurt others and perpetuate their depression, passing their depression on to their children. Men's depression, therefore, remains unreported to others and consequently untreated.

The tendency for men's depression to be underdiagnosed has important implications for rural research. When researching rural occupations that are heavily dominated by males, such as farming, this tendency could dramatically affect the results. Since the majority of farm operators in North Dakota are male, researchers need to consider that the reported incidence of depression may not accurately reflect the true rate of depression in this population. In other words, farm operators may underreport depressive symptoms. Ways to more accurately determine and interpret the incidence of depression in this group has yet to be explored. Research with farm operators, as well as the rural population in general, has been scant to date.

Depression in Rural versus Urban Settings

Following the 1980 farm crisis, researchers finally began to examine the plight of farmers and those residing in rural communities. These researchers found a consistent relationship between economic stress and the incidence of depression in the farm

population. Prior to that time, very little research had been conducted on the rural population. This was largely due to the urban bias that stemmed from early research by Dohrenwend (1975) regarding mental health in rural versus urban settings. As a result of his findings, it had long been thought that rural residents were more psychologically healthy and had a lower incidence of psychological disorders than their urban counterparts. Rural communities were considered to have more social stability, integration, and supportive interpersonal networks (Gallagher & Sheehy, 1994). Farmers, in particular, have historically been considered at low risk for psychological disorders because of the stereotypic view that farming is a healthy life style. As a result of this urban bias, most mental health researchers consequently focused on urban areas.

A number of scholars have since challenged the Dohrenwend conclusion. Some researchers have argued that mental health difficulties are as prevalent, if not more so, in rural areas as in urban settings (Hargrove & Breazeale, 1993; Wagenfield, 1982). In general, the research on urban-rural differences in the rates of mental disorders has produced mixed results.

Definition of "Rural"

Before continuing, it is important to define what is meant by "rural." It is estimated that approximately one fourth of the U.S. population resides in rural communities (Kelleher, Taylor, & Rickert, 1992). Wagenfield (2001) estimates that approximately 20% of the U.S. population reside in rural areas. However, there is a great deal of discrepancy in the literature regarding what constitutes a "rural" community. Flaskerud and Kviz (1982) proposed a useful distinction. Rural areas were defined as lying outside the standard metropolitan statistical areas determined by the Census Bureau

and have more than half of their population residing in communities of 2,500 or less population. This definition has since been simplified by Wagenfield (2001), who defines rural communities as consisting of towns and open land area of less than 2,500 persons.

Although rural communities differ from one another as a result of their geography, history, major occupations, regional location, and demographics, some researchers have agreed that sociocultural, occupational, and ecological dimensions differentiate rural from urban communities. Using the sociocultural dimension, researchers view rural areas as having a distinct set of values, such as social conservatism, provincialism, and fatalism (Kelleher, Taylor & Rickert, 1992). Investigators who use the occupational approach define rural areas by the dominance of extractive or production industries, such as agriculture, forestry, mining and light manufacturing (Miller & Luloff, 1981). Researchers adopting the ecological view refer to the "cost of space" in accessing needed goods and health/mental health services. Wide geographic distance, along with a lack of public transportation and limited human services agencies, characterize rural communities and contribute to a problem of medical underservice (Flaskerud & Kviz, 1982).

Regarding the sociocultural dimension, some researchers have found that rural residents hold more conservative social and political views. In addition, rural individuals have been reported to be more religious and more strongly opposed to premarital sex, the use of contraceptives among teenagers, and divorce (Keller & Murray, 1982). Rural residents are also thought to be more mistrustful of "outsiders" and place more importance on individualism and self-reliance (Coward, DeWeaver, Schmidt, & Jackson, 1983).

Despite these value differences obtained by some researchers, there is very little consensus as to whether or not significant rural-urban value differences actually exist. Other researchers have suggested that the idea of rural-urban value differences is nothing more than a myth (Cordes, 1990). They argue that any rural-urban differences that might have existed are becoming less significant due to advances in communication and transportation, which have lessened the sense of isolation within rural communities. In general, researchers have not yet identified particular value orientations that are present across rural settings and unique to rural settings. In other words, it is unclear exactly what rural-urban value differences actually exist and whether these differences are consistent across all rural communities. There appears to be considerable differences between rural communities, such that no homogeneous set of values may exist for "rural" residents.

Most researchers agree, however, that rural communities tend to be at an economic disadvantage, compared to urban settings. The US Department of Agriculture's National Agricultural Library (USDA, 1999) recently indicated that rural communities are more economically disadvantaged than urban communities. Rural communities have higher unemployment and poverty rates. Those residing in rural communities typically have lower incomes in general, as well as less insurance coverage. Rural family members typically receive less formal education and have fewer high paying occupations than metropolitan families, resulting in a relatively lower median income for rural residents (Kelleher, Taylor, & Rickert, 1992). Rural communities also tend to have smaller proportions of minority persons and larger proportions of elderly persons. According to Kelleher et al (1992), a large proportion of the rural population is comprised of those persons under 18 years and those above 65 years of age.

Rural areas are also characterized by a lack of resources. In addition to medical underservice in rural areas, mental health resources are often also lacking in rural communities. Limited federal funding for rural mental health services, as well as the tendency of providers to remain in urban areas, have contributed to a lack of mental health resources in rural areas (Keller & Murray, 1982). Rural areas have fewer community mental health centers and have fewer staff, compared to urban settings. In addition, rural areas have fewer well-trained providers and less diversity in their mental health resources (Wagenfield, 2001). Mental health providers in rural areas are required to be generalists and are often called upon to assume roles for which they may not have specific training due to a lack of resources (Chapman, 2001).

Depression in the Rural/Farm Population

As stated previously, those studying the 1980s farm crisis indicated a consistent relationship between economic stress and the incidence of depression in the farm population. A dramatic rise in depression among farmers was reported, with between 20% to 50% of the participants in these studies reporting depression or significant levels of stress (Ragland & Berman, 1990-1991; Stallones, 1990; Walker & Walker, 1988). Leistritz, Ekstrom, Breugdenhil, and Leholm (1986) indicated that 44% of the farmers in serious financial trouble (debt-to-asset ratio over .70) reported that they or a member of their immediate family had experienced depression or other emotional problems. In contrast, only 6% of the respondents who had no debt load reported similar problems (as cited in Cook & Tyler, 1989).

Lorenz, Conger, and Montague (1994) found strong support for the relationship between economic pressure and depression. Their study involved several hundred rural

Iowa families who lived through the farm crisis of the 1980s. Participants included farmers, people residing in small towns, and those who lost their farms as a result of the rural economic depression. The researchers in this study quantified economic pressure as the following: (a) per capita income, computed by dividing total family income by family size; (b) debt-to-asset ratio; (c) income loss, computed by subtracting annual family earnings from that of the previous year; and (d) unstable work. Three sources were utilized to measure depressive symptoms: self report, spousal report, and observer rating. The level of depression among the farmers in this study was strongly predicted by the level of economic pressure. Depressive symptoms were more prevalent among husbands and wives with lower incomes, incomes that were declining relative to previous years, with higher debt-to-asset-ratios, and with unstable work patterns (Lorenz et al., 1994).

Lorenz, Conger, and Montague (1994) developed a theoretical model to explain the relationship between economic hardship and depression in rural husbands and wives. Although complex, this model demonstrates that economic hardship affects an individual's emotional distress, operationalized as depressive symptoms, indirectly through economic pressure. The index of economic pressure involves an assessment by both spouses that their family cannot maintain an adequate standard of living, that they are having difficulty paying bills, and that they have had to cut back on expenses. The model proposes that it is the impact of economic hardship on painful adjustments to daily living and not the actual "hardship" that directly affects depressive symptoms. In other words, it is the daily life experiences and adaptive processes as a result of economic pressure that impact emotional distress.

Their model also addressed the indirect effects of social support, both from within and outside the family system. The authors considered these types of support as different entities, since they typically manifest themselves in different ways. Family support was thought to be more salient and immediate than extrafamilial support. When Lorenz and colleagues (1994) tested their model, external social support and family support were found to contribute significantly to the explanation of the farmer's depressive symptoms, showing a negative correlation of $-.17$ and $-.23$ respectively. However, the relationships between economic pressure and the depressive symptoms remained essentially the same, regardless of whether the social support was high or low. In other words, it appears that social support tended to mediate the relationship between economic pressure and depression, but did not have a buffering effect. Social support appeared to alleviate the negative consequences of economic pressure on depression only when the level of social support increased. In addition, the relationships between economic pressure and both types of social support were negative. This indicates that as economic pressure increases, social support decreases. Although this might seem puzzling, the authors predicted this relationship. They expected that rural residents, due to their self-reliant nature, would tend to withdraw from social relationships because of the stigma attached to economic failure (Lorenz et al., 1994).

Other researchers looking at the farm crisis in the mid-1980s found similar results regarding economic stress and depression. Heffernan (1985) examined the experiences of 42 Missouri farm families who had been forced to quit farming between 1980 and 1985 due to the crisis. All of the women and all but one of the men studied indicated that they had experienced depression at some point during the process of exiting farming. In

addition, 56% of these men and 72% of the women continued to experience depression one year after the farm loss. Nearly 50% of the men and 40% of the women reported continued feelings of worthlessness a year later (as cited in Ortega, Johnson, Beeson, & Craft, 1994; Ragland & Berman, 1991). Furthermore, in separate studies of rural households in Iowa, Nebraska, North Dakota, North Carolina, and Pennsylvania, investigators found significant relationships between economic hardship and psychological distress (Ortega et al., 1994).

In a 1987 study, Beeson and Johnson found support for the economic hardship-depression relationship. In their panel study of households in Nebraska, there were three waves or stages, with the results of the first two waves showing significant increases in the level of depression among farm households between 1981 and 1986. Following the peak of the direct economic impact of the farm crisis, in 1989, they collected data during a third wave of interviews. The researchers found that the mental health effects previously shown were primarily short-term. The participants demonstrated improvement in psychological well-being that paralleled the improvement in economic conditions (as cited in Hoyt, O'Donnell, & Mack, 1995).

There is some indication that psychological distress is associated with rural living in general, regardless of whether persons are employed as farmers or in other occupations. The farm economy directly affects those non-farmers living in rural areas, since rural communities typically have an agriculturally based economy as well. In other words, the loss of agriculture-dependent businesses, due to the farm crisis, has had a direct economic impact on small rural communities as well as the farm population. This consequently results in a lack of occupational opportunities, causing many young

residents to leave and seek employment elsewhere. Furthermore, those residing in rural communities typically have less immediate access to a variety of support resources than those residing in larger populated communities.

Some researchers have found that those living in rural communities may have higher levels of emotional distress than those residing on farms or in more urban areas. However, economic hardship was again found to be associated with depressive symptoms in all populations. Hoyt et al. (1995) found the level of depressive symptoms to be significantly higher among those living in small rural communities of less than 2,500 residents than among those living on farms or in larger rural towns of a population under 9,999, when controlling for individual economic hardship. Regarding economic hardship at an individual level, those participants who reported financial stressors had significantly more depressive symptoms regardless of the size of place of residence. In other words, when the individual economic hardship factor is taken into consideration, the differences in depressive symptoms between the farm population and those residing in rural communities tended to disappear. No significant differences were found between persons living in rural communities and those in small cities or urban centers, suggesting the absence of substantial rural/urban differences in depressive symptomatology.

Linn and Husaini (1987), however, failed to find support for these findings of higher depressive symptoms in the non-farm rural population. The Tennessee agricultural respondents in this study reported slightly higher depressive symptoms than the non-farmer participants on the Center for Epidemiological Studies Depression Scale (CES-D). Approximately 19% of the agricultural respondents had CES-D scores of 16 or above, which is considered the cut-off score for this measure and the level of symptomatology

that may indicate the need for psychiatric services. Of the non-farm participants, about 17% had scores in this range.

Although very little research has been conducted on depression in rural settings, there is some agreement that the prevalence rates of depression have historically been lower in rural versus urban settings. However, a review of the current literature indicates mixed results. The results of some studies have indicated that the level of depression in the rural population is now similar to that found in the urban population. Linn and Husaini (1987), for example, found no urban/rural differences in the rate of depression. The depression rates observed for both subgroups of rural respondents (19% and 17%) in their study were comparable to rates reported in urban studies conducted in Washington County, Maryland (18%) and Kansas City, Missouri (22%).

In the rural population, age-related increases in the level of depression have been found. Based on the results of their longitudinal study, Wallace and O'Hara (1992) reported increasing percentages of depression in older Iowa adults. During the 6-year research span, the percentage of the participants reporting significant depressive symptoms rose from 9% to over 12%. The most noticeable changes occurred in those over the age of 74 and among older men. The gender difference of higher levels of depressive symptoms in females compared to males reversed for those over the age of 85. Similar results were found by Rokke and Klenow (1998). In their study of elderly rural North Dakota residents, men 75 and older showed higher rates of depression than women for that age group. However, little difference was found between the rates of depression for men and women under age 75.

Interestingly, younger rural farm and non-farm residents seem to be more at risk for emotional distress due to economic stress. A review of the literature regarding age differences in emotional distress indicates that younger people residing in rural settings are likely to be significantly more distressed than older respondents (Linn & Husaini, 1987). This is largely due to the younger residents' perception that they have fewer work opportunities available to them. Schulman and Armstrong (1990) also reported similar results, finding that the young were often economically disadvantaged due to having less earning and savings but higher economic demands than the older age groups. Older residents, on the other hand, are likely to possess more financial assets and to be considering retirement. Therefore, they may be less impacted by economic stress.

Farm operators with the highest levels of perceived distress appear to be younger, work more days on-farm, and have greater economic uncertainty and hardship (Schulman & Armstrong, 1989). This is consistent with the results of a study by Hoyt et al. (1995), who examined depression in rural farm and non-farm residents. They reported that age was negatively correlated with depression for both groups, with younger respondents indicating more depressive symptoms than older respondents. Other researchers, however, have failed to find a relationship between age and measures of perceived stress or depression among farm operators (Keating, 1987; Linn & Husaini, 1987).

Suicide Risk

Depression, as with all mood disorders, is a serious and dangerous disorder. A person suffering from major depressive disorder has a considerable suicide risk. The DSM IV reports that 15% of those suffering from a severe major depressive disorder commit suicide. This risk increases approximately fourfold when the patient is over age

65 (American Psychiatric Association, 1994). In a 1996 study, Chen and Dilsaver found that 15.9% of patients with unipolar depression attempted suicide (as cited in Holms, 1998). More recently, the lifetime suicidal risk was estimated to be 6% for an affective disorder, suggesting that the 15% suicidal risk typically reported in the literature may be an inflated estimate (Inskip, Harris & Barraclough, 1998). Regardless of this discrepancy, with major depression the suicidal risk is significantly increased compared to that in the general population.

There appears to be an increasing rate of rural versus urban suicide, with the rural rate exceeding that of urban communities (Gallagher & Sheehy, 1994). This pattern has also been observed in a number of European countries, as well as in the United States. In a study including Sweden, Denmark, Scotland, and Ireland, the rate of suicide of rural workers was twice that of the rest of the population. The group found to be most at risk were males between the ages of 25 and 60, who were unemployed and living alone, and who had a history of psychological disturbance (Gallagher & Sheehy, 1994).

Although little research has focused on farmer suicide rates in particular, a number of articles in the popular press and anecdotal reports suggest that the farm suicide rates in the U.S. have been increasing in response to economic stress (Ragland & Berman, 1991). The limited research that does exist indicates that farmers, as an occupational group, tend to have higher suicide rates compared to other occupational groups. Older farmers, in particular, seem to be at highest risk compared to younger farmers. This is an interesting finding, given the tendency for younger males to have experienced more economic and psychological distress as a result of the 1980s farm crisis. Nashold (1986) compared the suicide rates for farm and non-farm populations in

Wisconsin from 1961 to 1985. The researcher divided the suicides into two age groups: (a) younger than 64, and (b) older than 65. For the older age group, the male farmer suicide rate grew from three to four times the non-farmer rate in 1961 to more than six times the non-farmer rate in 1985. The younger age group of male farmer suicides initially reflected twice the rate of non-farmer suicides. However, the rates for these two groups were nearly equal in 1985.

In an interesting study, Ragland and Berman (1991) compared suicide rates across three occupational groups: (a) farmers, including farm operators, managers, and supervisors; (b) forestry workers; and (c) transportation workers. The later two groups served as controls in this study. Like the farm group, these two groups were predominantly male and Caucasian. Data were collected from fifteen states in the U.S. from 1980 to 1985. The overall suicide rate for farmers was approximately 44.9 per state. This rate was significantly greater than for the transportation group, but not significantly different than for the forestry workers. Furthermore, the farm debt/asset ratios were positively correlated with the farmer suicide rates. Consistent with the Nashold study, the majority of the farm suicides were found to be in the older age groups (55-75+). Although data were not available from many of the most agriculturally depressed states in the Midwest and Northern Plains, a positive relationship was found between suicide rates and economic conditions for this occupational group.

In another study of suicide rates, farmers had higher rates compared to non-farmers and rural males had higher rates than the general population of U.S. males. Stallones (1990) compared age specific suicide rates for Kentucky white farmers, Kentucky white non-farmer males, and U.S. white males. Death certificates were

examined from 1979 to 1985 for the Kentucky groups and in 1980 for the U.S. suicide rate. The overall suicide rates were highest for the Kentucky farmers. The Kentucky males had the second highest rate, followed by the U.S. male group. In addition, farmers age 65 or older showed the highest rate of suicide, with the lowest rate among the farmers who were under 25 years of age. Furthermore, the Kentucky farmers and the non-farmer groups were found to utilize firearms as the mode of suicide significantly more often (84.8 % and 77.2% respectively) than the U.S. male group (64.4%) (Stallones, 1990).

Similar results have been found for the suicide rates in five north-central states. Gunderson, Donner, Nashold, Salkowicz, Sperry, and Wittman (1993) examined the suicide rates of farms and ranches from 1980 to 1988 in Wisconsin, Minnesota, North Dakota, South Dakota, and Montana. Four rural populations were considered in this study, including farmers, farm women, farm laborers, and children/adolescents. These groups were compared with the suicide rates in the general U.S. population. Farmers and ranchers were 1½ to 2 times more likely to commit suicide than other groups of men. The typical farmer who committed suicide was 64 years of age and utilized firearms as the mode. When age was adjusted, proportionately 69% more suicide deaths occurred among adult farmers or ranchers than among adult white males in the U.S. general population. In addition, suicide was the fifth leading cause of death among farmers within these five states, compared to the eight leading cause of death nationally. South Dakota and Montana reported proportionately more suicides of farmers and ranchers than the other three states.

Help-Seeking Behavior

Despite the high stress and possible mental health problems associated with the farm crisis, many farmers may be reluctant to utilize available mental health services. Proportionately fewer rural residents utilize mental health services than do individuals in urban areas (Flaskerud & Kviz, 1982; Murray & Keller, 1982). In a 1985 study, residents in rural areas were found to be 30% less likely than urban residents to seek help from a psychiatrist (Schurman, Kramer, & Mitchell, 1985). This tendency has been well supported by other rural research. For example, Lee and associates (as cited in Flaskerud & Kviz, 1983) examined help-seeking behavior of residents in a rural county of North Carolina, finding 50% of the participants reporting that they would not seek help for problems, such as tension, anxiety or nervousness. Campbell and McDaniel found similar results in their 1997 study. Even though mental health services were available, approximately 50-70% of rural patients with a psychiatric disorder were treated in a primary care setting (as cited in Thurston-Hicks, Paine, & Hollifield, 1998). These researchers, however, further indicate that respondents were willing to seek psychiatric services only when their problems were considered severe.

Due to this help-seeking preference, primary care physicians are frequently involved in a primary or secondary diagnosis of a mental disorder. Approximately one half of all office visits to physicians, resulting in a mental disorder diagnosis, were provided by physicians not formally trained in psychiatry (Schurman et al., 1985). Although a similar scenario may be found in urban areas, this percentage may be even higher in rural communities due to a shortage of psychiatrists. The north central region of the U.S., in particular, has been reported to have about half as many psychiatrists per

resident as the rest of the nation. Furthermore, north central rural residents were significantly less likely to seek help from a psychiatrist compared to other regions in the nation (Schurman et al., 1985).

Researchers studying the farm population, specifically, have found similar results. It is important to note, however, that the majority of these studies were conducted over ten years ago, in response to the 1980s farm crisis. The results, therefore, may not reflect the current help-seeking behavior of the farm population. Researchers found that farm residents tend to be reluctant to seek help and may be unaware of mental health services that are available. In their survey, Fehr and Tyler (1987), found that the majority (73%) of residents in a North Dakota farm community were unaware of a nearby mental health clinic located only 30 miles away. In another study, Cook and Tyler (1989) found a general reluctance among North Dakota farm couples to seek outside resources of any kind. The participants reported a reliance on their immediate social support network, including family members and friends. These farm men and women were more receptive to seeking help only when their farm operations were economically declining, compared with those who reported stable operations.

Similarly, Linn and Husaini (1987) examined the coping behaviors of Tennessee farm residents, finding that few respondents from either the farm or rural non-farm samples sought services at a mental health center or clinic. Only 5.3% of the farmers and 5.7% of the non-farm residents reported that they had ever utilized such a service. Consistent with these findings, Shapiro et al. (1984) reported a 6-7% figure for urban samples in New Haven, Baltimore, and St. Louis. This suggests that the difference

between rural and urban rates for seeking mental health services may not be as consistent as previously thought.

Researchers have found that rural residents believe that emotional, behavior, or personal problems should be faced privately. Rural residents typically rely on their own personal resources, such as working it out by oneself or praying for help. If they do seek help, rural residents prefer to utilize informal nonprofessional resources, such as talking to a spouse, clergy member, a friend, or other family member (Cook & Tyler, 1989; Linn & Husaini, 1987). In a recent farm poll, Stofferahn (1999) found similar preferences, with the respondents indicating that they were more likely to seek help from clergy (20.4%) than a mental health professional (6.6%). They also expressed a general reluctance to seek help from either source, indicating an unlikelihood to seek out mental health professionals (51.2%) or clergy (30.7%). However, if outside assistance is necessary, rural residents have been found to prefer to seek help from a physician rather than a mental health professional (Flaskerud & Kviz, 1982; Schurman et al., 1985; & Van Schaik, 1988). In other words, the use of formal resources, such as mental health professionals, is relatively low compared to alternative resources.

Although negative attitudes toward seeking mental health services in rural populations have been widely reported, there is also evidence of more accepting attitudes. In a study of 3,057 rural residents in six Midwestern states (Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin), Flaskerud and Kviz (1983) found positive attitudes toward treatment of psychological problems. Data were collected by means of standardized mailed questionnaires and personal interviews. The majority of the respondents were Caucasian, middle-aged and from lower-middle income households. A

significant majority of these participants considered mental disorders to be illnesses just like physical disorders. They did not believe there was shame attached to treatment in a mental hospital, and they believed that mental disorders were curable. In addition, a sizable minority (41.3%) reported that a mental disorder or its treatment negatively changes people in some way. They believed that mentally ill persons discharged from a mental hospital were different than other people. (Flaskerud & Kviz, 1983).

There is some evidence that farm operators may be interested in learning how to manage stress. Based on the results of the Prairie Grains Magazine's readership survey (2001), 81% of the farmer operators surveyed reported being at least somewhat interested in reading articles on stress management. Similar results were also obtained in the readership survey conducted in 1999, as 79% expressed at least some interest in this topic.

Researchers who investigate attitudes toward mental health help-seeking behavior have identified a number of demographic variables associated with these attitudes and behaviors. Variables such as gender, socioeconomic factors, educational level, and age have been found to be related to help-seeking behavior. Regarding gender, women have been found to be more likely to seek mental health services than men with the same symptoms (Fischer & Turner, 1970; Wolff, Pathare, Craig, & Leff, 1996). Similarly, researchers examining treatment of psychiatric disorders reported that the majority (58%) of psychiatric patients were female (Schurman et al., 1985). Socialization factors may play a role in this gender difference. The traditional male gender role may cause males to feel "weak" if they ask for help. Females, on the other hand, are socialized to be "taken care of" or dependent on others, so they are more willing to seek mental health services.

In rural communities, this socialization may have a greater impact since more conservative attitudes and traditional gender roles tend to be prevalent in these communities. Therefore, females may be more apt to seek mental health services than males in rural communities especially.

Older age groups may have a greater reluctance to seek mental health services compared to younger individuals. It is estimated that less than 4% of visits to psychiatrists are by patients who are over 65 years of age. Furthermore, four out of five persons age 65 or older were diagnosed with a psychiatric disorder by a nonpsychiatrist physician (Schurman et al., 1985)

It has been well established in the research that socioeconomic status is positively correlated with attitudes toward seeking psychiatric help. In other words, families of high socioeconomic status hold more favorable attitudes toward seeking help compared to those of low socioeconomic status. However, it has been demonstrated that there is a significant interaction between educational level and socioeconomic status (Angermeyer & Mutschinger, 1997; Fischer & Cohen, 1972). When controlling for age and socioeconomic status, researchers have found that educational level alone is positively associated with attitudes toward the use of mental health services (Fischer & Cohen, 1972; Trute, 1989).

There may be a number of possible reasons for the underutilization of mental health services by rural residents. Some of these reasons include the following: (a) rural values and attitude, (b) geographic isolation and large travel distances, (c) lack of available mental health resources, (d) lack of financial/insurance resources, and (e) low awareness of mental health issues. These factors will be discussed below.

First of all, rural values and attitudes may have an impact on service utilization. The rural population tends to highly value independence and self-sufficiency. Farmers, in particular, have been found to possess unique attitudes and beliefs, characterized by more prejudice, less acceptance of deviance, more isolation and ethnocentrism, and a stronger work ethic (Linn & Husaini, 1987). All of these factors are consistent with their tendency to deal with their problems on their own or to rely on informal resources. Because rural residents place such a high value on independence and self-sufficiency, they may feel like a “failure” or “weak” for having to seek help from outside sources. In addition, they may resist any psychological explanations for their distress and therefore reject the need for mental health services.

Religious values may also contribute to low mental health service utilization in rural areas. Those rural residents with strong religious values may be more likely to seek help from non-mental health sources, such as religious leaders. This is consistent with the research results found by Stofferahn (1999) in his survey of North Dakota rural residents. He found that approximately 20.4% of the 680 farm operators surveyed were very likely to seek out clergy for help, compared to 6.6% who were very likely to seek out mental health professionals. Conversely, over half (51.2%) of the farm operators reported they were very unlikely to seek out mental health professionals, while only 30.7% were very unlikely to seek clergy for help.

Another obstacle for seeking mental health services involves the possible stigma associated with such services. In rural communities, it is believed that people avoid mental health services largely due to fear of being stigmatized (Linn & Husaini, 1987). Residents in rural communities often have to contend with a lack of anonymity, which

may prevent them from seeking services. Rural communities tend to be small, with the rural mental health centers often located in prominent, visible locations. They may fear the stigma associated with mental health issues and therefore, refrain from seeking help to prevent being ostracized by others in the community (Chapman, 2001). Jeffrey and Reeve (1978) found that people in rural areas are slow to accept mental health services because they fear being labeled as "crazy."

Other possible reasons for the underutilization may be related to geographic location and a lack of available mental health resources. Many rural areas remain underserved by medical and mental health professionals. The services that are available, however, are often located miles away. For example, a single community mental health center's catchment area is physically much larger than for urban communities (Chapman, 2001). In other words, many small rural communities are geographically isolated from mental health services. Therefore, they may not be aware that such services exist and are available. Furthermore, since rural areas are often diffusely distributed, residents are typically required to travel some distance to a mental health facility. It would take even more effort to seek services since the client would have to drive or seek transportation. If the client was reluctant to begin with, he/she may not be willing to make this extra effort and may ultimately decide not to seek such services.

Closely related to geographic isolation, a lack of financial/insurance resources may impact utilization of mental health resources. Rural residents may have less financial resources to seek mental health services, as they tend to have lower income and fewer opportunities for well-paying jobs than urban residents. In addition, farm operators are typically self-employed and therefore, have to pay for their own health insurance policies.

Some farmers, as a result, may be unable to afford health insurance or may hold only minimal policies with high deductibles. Therefore, farm operators may not have the financial resources or the insurance to pay for mental health services. In addition, rural residents also have to consider the transportation costs of commuting to a mental health facility, often located miles away. As a result, seeking mental health services is often expensive and time-intensive for rural residents. They may have to travel great distances and would need the financial resources to pay for the costs of transportation, as well as the costs of such services.

Finally, a lack of awareness of mental health issues may also be a factor contributing to under-utilization of mental health resources. In their research, Keller and Murray (1982) noted that a lack of information about mental health issues might contribute to the reluctance of rural residents to seek services. This lack of information likely perpetuates and maintains the stigma associated with mental illness. There is some discussion in the literature that the use of communication technology may be promising for removing barriers related to transportation and information access in rural areas (Chapman, 2001). For example, the use of computers, via the Internet, to obtain information is likely an important information-gathering source for rural residents. Those with Internet access are able to obtain a wide variety of information about mental health issues, without having to leave their homes. In addition, there is growing literature on the use of telemedicine for delivering clinical care to rural residents. Telemedicine is defined as "...the use of electronic communications and information technology to provide or support clinical care at a distance" (Stamm, 1998, p. 536). The most common mode of telemedicine tends to be the use of telephone contact and conference calling when face-

to-face contact is not an option. It is believed that telemedicine could also be applied to mental health services as well. Furthermore, video teleconferencing (VTC) offers another tool for circumventing geographical barriers. Although this option is more expensive and sophisticated, VTC would allow the client and the service provider to have simultaneous audio and visual contact (Stamm, 1998). Despite the possibilities available through technological advances, these approaches are expensive and in the initial stage of outcome research with the rural population. Perhaps as these modes of service delivery gain empirical support, they may be eventually considered integral components of rural health care (Chapman, 2001).

Heyman (1986) advocated for the importance of understanding the rural social context in order to enhance mental health programs in these areas. Inherent in rural communities are community networks. Rural communities are comprised of several interacting systems of individuals. These systems include (a) formal networks; (b) informal networks, and (c) "doers" or natural helpers. Formal networks involve community officials who have power over the community resources and create public policy. Informal networks, on the other hand, consist of family, friends, and colleagues. "Doers" are typically the volunteers, who volunteer their time and/or talents to help others in the community. Persons in small communities know who is suffering more often than do those in urban areas. There is an explicit value on helping neighbors. Because of these networks, many rural residents may not seek mental health services as they may be receiving emotional support from informal networks and/or other networks within the community.

Summary

The current farm crisis poses a serious threat to the economic future and the mental health of many farmers. Chronic, high stress levels are associated with mounting debt and substantially diminishing incomes. North Dakota farmers, in particular, appear to be faced with serious economic hardship. Based on findings of research conducted on the effects of the 1980 farm crisis, there is a strong link between farm economic stress and the incidence of depression. Farmers have been found to experience significant depressive symptoms as a result of the farm crisis. In addition, the suicide rates tend to be increasing in the rural population, especially among farmers, at a faster rate than that of the general population. Contributing to the seriousness of the situation, many farmers may be reluctant to seek help from a mental health professional, resulting in untreated or unrecognized depression.

Given the current economic situation, further research is needed on the psychological effects of this existing farm crisis. Very few researchers have addressed the impact of the current crisis. Much of the research on the farm population was conducted over ten years ago, in response to the 1980s farm crisis. Because the results are dated, they may not apply to the current economic situation. There have likely been many changes in the past ten years. Therefore, it is imperative that research be conducted on the current state of the mental health of today's farmers and their help-seeking behavior.

Purpose of Study

The overall purpose of this study was to examine the level of depression and the degree of help-seeking behavior among North Dakota farmers. A secondary purpose was to determine the relationship of economic stress with depression and the help-seeking

behavior, as well as determine which demographic variables were associated with the levels of depression and the help-seeking behavior in this population. Furthermore, exploratory analyses were conducted to examine the relationship between the spouse/partner ratings and the farm operators' depression scores and help-seeking behavior.

Specifically, I attempted to answer several research questions. The first research questions were descriptive in nature and include the following: (a) How depressed are North Dakota farm operators? and (b) Where are they willing to seek help? This study also examined the following relationship questions: (a) Is there a positive relationship between economic stress and depression? (b) Does economic stress predict the level of depression more than various demographic variables, including age, marital status, and education level? (c) Is there a relationship between these demographic variables and the level of depression? (d) Is there a relationship between these demographic variables and help-seeking behavior? and (e) What is the relationship between economic stress and help-seeking behavior?

CHAPTER II

METHOD

Participants

Farm Operators

A total of 199 farm operators participated in this survey. Of the total number of participants who responded to the survey, 158 were active farm operators. Thirty farm operator respondents, comprising approximately 15%, reported that they were retired from farming at the present time. These retired farm operators were still included in the overall number of farm operators, despite many having missing data, as several of these participants did complete the questionnaires in part or in their entirety. Similarly, eleven farm operator participants, comprising 5.5% of the total number of participants, reported that they no longer farm for various reasons. This category was reserved for those who did not specify that they were retired but reported that they were no longer farming. Data from those participants who reported that they no longer farm were also included in the overall number of farm operators since several did complete a portion or the entire survey regardless. I believed it was important to get an accurate description of the percentage of farm operators who are retired or no longer farm, as a similar percentage is likely to be found in the general population of North Dakota farm operators.

Those who specified retirement as a reason for no longer farming were included in the retired group rather than the "no longer farming" category, in an attempt to separate

those who retired from those who quit farming for other reasons. I believed that these two categories of farm operators represent qualitatively different groups of former farm operators. Those who quit farming for unspecified reasons may have either chose to quit or been forced to quit for various reasons, one of which may involve financial difficulties. These participants were not of retirement age. The mean age was 59.33 years ($SD = 3.21$). On the other hand, those who retired from farming likely chose to quit farming due to being of retirement age and had likely farmed for the duration of their careers. The mean age for this group of participants was 68.73 years ($SD = 9.23$). They may have had a very different experience that led them to quit farming, compared to the experiences of the "no longer farm" group.

As a group, the farm operators who participated in this study have been farming for many years. The average number of years farming reported by the 172 farm operators who responded to this question was 31.34 years ($SD = 12.1997$).

The farm operators who participated in this study were mostly male, of middle age, and married. Approximately 98% of those who responded to the gender question ($n = 175$) reported being male. Only 3 farm operator participants were female (1.7%). The farm operators participating in this study had a mean age of 55.02 years ($SD = 12.27$). The majority were married. Approximately 87% of the 175 participants who responded to the question reported their marital status as "married". Nearly seven percent of these participants were single, comprised of 5.7% living alone and 1.1% living with a significant other. Three percent ($n = 6$) of the participants were divorced and 2.5% ($n = 5$) were widowed.

Most (94.1%) of the farm operator participants, who responded to the question about their educational level ($n = 171$), reported having at least a high school education. Forty-six (26.9%) of the farm operators reported having no education beyond high school. However, a majority of the farm operators (67.2%) had at least some education beyond high school. Fifty respondents (25.1%) had some college, and forty-eight (28.1%) reported having attained a college degree. In addition, twelve (6%) participants reported having some graduate school, four (2%) having obtained a master's degree, and one (.5%) having a completed higher professional degree.

The farm operator participants in this study reported growing a wide variety of diverse crops. Since wheat growers were selected for this sample, it was important to determine whether these farm operators produced other crops as well or if the results were specific to wheat growers. All of the farm operators reported more than one type of crop when they were asked to list their primary crops raised. Wheat was the most commonly reported crop, with 152 (76.4%), participants listing this crop as one of their primary crops. Barley and sunflowers were the second and third most frequently grown crops, with 56.3% and 35.7% of the participants reporting growing these crops, respectively. Other primary crops listed included: corn (26.1%), soybeans (25.6%), canola (24.6%), durum (24.6%), oats (16.6%), dry beans (15.1%), flax (14.6%), alfalfa (11.1%), cattle (9.5%), sugar beats (7%), hay (4.5%), peas (2.5%), lentils (2%), potatoes (1.5%), hogs (1%), rye (1%), grass (1%), mustard (.5%), sweet clover (.5%), and pheasants (.5%). Four percent of the participants listed "small grains" as a primary crop, which would likely include wheat, barley, and oats. These were not included in the percentages above, since it was unclear what specific type of crop(s) they were referring

to when listing "small grains." In addition, three of the participants (1.5%) reported having some of their farm land enrolled in the Conservation Reserve Program (CRP), a federal program that pays farm operators to grow native grasses and wildlife habitat on marginal land.

Spouse/Partner Participants

Regarding the spouse/partners of the farm operators, a total of 120 spouse/partners of the farm operators participated in this study. Since 152 of the farm operator participants reported being married, the response rate for the spouse/partners of these farm operators was nearly 79%. Of the 120 spouse/partners who participated in this study, seven (5.8%) reported that the farm operator had retired from farming, while one spouse/partner reported that the farm operator no longer farms for reasons other than retirement. For the spouse/partner ratings, 96 spouse/partners completed all of the spousal rating items. Their ratings were used to determine the spousal ratings.

All of the spouse/partner participants were female, with an average age of 52.81 years ($SD = 10.5184$). Nearly all of the spouse/partner participants ($n = 119$) reported being married to the farm operator, with only one respondent not providing a response to the marital status question. None reported that they were unmarried and living with the farm operator as the significant other. A large majority (74.3%) of the spouse/partners had some education beyond high school, with 35% ($n = 41$) reporting some college, 30.8% ($n = 36$) a college degree, 6.8% ($n = 8$) some graduate school education, and 1.7% ($n = 2$) having completed a master's degree. Twenty-one percent of the spouse/partner participants reported having a high school education as their highest level of education attained, with 2.5% ($n = 5$) having completed some high school only. The spouse/partner

participants in this study have been involved in farming for an average of 28.37 years ($SD = 11.4027$).

Procedure

Prior to conducting this study, permission was obtained from the Institutional Review Board at the University of North Dakota. In determining the sample for this study, it became apparent that no complete listing of North Dakota farm operators would be feasibly available. Therefore, participants for this study were selected through a mailing list for *Prairie Grains Magazine*, a farm publication that reaches over half of the farm operators in North Dakota. This farm publication is free of charge, distributed via postal mail to farm operators who are members of the North Dakota Grain Growers Association or who are non-members but produce a minimum of 250 acres of wheat and/or barley. Stratified sampling was utilized, organizing the entire mailing list (12,675) in ascending order by zipcode, beginning with the lowest zipcode. A random sample was determined by selecting every 25th case, beginning with the very lowest zipcode value as the #1 case. A total random sample of 500 North Dakota farm operators was selected for the mailing. Both the farm operator and the spouse/partner were asked to complete the questionnaire packet.

Of the 500 farm operator households selected for the mailing, 8 questionnaire packets were undeliverable due to expired forwarding addresses or incorrect addresses. As the *Prairie Grains Magazine* mailing list is updated only eight times per year, it was expected that several of those selected for the mailing list would have incorrect addresses. One of the farm operators selected was now deceased and the questionnaire packet was returned unanswered by his widow. Therefore, of the 500 farm operator households

selected for this sample, only 491 farm operators actually received the questionnaire packets. A total of 199 farm operators participated in this survey, giving a response rate of approximately 40.53%.

Packets, containing a consent letter and the questionnaires, were mailed to the 500 farm operator households selected for the mailing. Each household selected received a packet, containing the letter, two copies of all questionnaires, and two self-addressed, stamped envelopes. All participants selected received the same letter, explaining the study purpose, voluntary participation, and confidentiality. The letter explained that completing and returning the questionnaires would serve as consent to participate in this study. The letter also requested that both the farm operator and the spouse/partner complete the questionnaires. It was explained that the questionnaires were number coded, in order to assure anonymity and to allow for the pairing of the two household questionnaires. Each participant was asked to complete and return the questionnaires in a separate, self-addressed stamped envelope provided.

To address concerns about possible underreporting of depressive symptoms, as suggested by research on men's depression, both the farm operator and the spouse/partner were asked to complete the questionnaire packet. Each completed the questionnaires based on their own experience. Part 2 of the Personal Data Questionnaire involved questions pertinent to the other spouse/partner. They were asked to rate their partner on various observed behavioral and/or mood changes that indicate possible depressive symptoms. These spousal/partner ratings were deemed necessary for this study, as it was expected that the farm operator may underreport depressive symptoms. The spousal/partner ratings, therefore, served to provide a "check" on the level of depressive

symptoms reported by the farm operator. Both the farm operator and the spouse/partner were asked to return the questionnaires in separate self-addressed stamped envelopes provided. The spouse/partner data was not utilized in this study, except for their ratings of the farm operators. Only the data from the farm operators was analyzed for purposes of this study.

A follow-up postcard was sent to all of the 500 farm operator households selected for this study, one week after the mailing of the questionnaire packets. This postcard served as a reminder, requesting that participants complete and return the questionnaire. It also included a phone number and an email address for the researcher in the event they had not received a questionnaire packet and would like to participate. In addition, this postcard served as a thank-you to those farm operators and spouse/partners who had already responded to the survey.

Measures

Personal Data Questionnaire

This brief questionnaire, consisting of two sections, was designed for the purposes of this study. For the first section, labeled Part I, participants were asked to provide limited demographic information regarding their gender, age, educational level, and marital status. In order to obtain basic information about their farm operation, the farm operator participants were asked how long they had been farming, as well as having them list the primary crops raised on their farms. This crop list was included to determine whether the participant sample selected for this study was specific to wheat growers in the state or encompassed farmers with diverse crops, given the sample selection method utilized in this study.

Section two of this questionnaire, labeled Part 2, consisted of twelve questions pertaining to the other partner. Those participants who were currently living with their spouse or significant other were asked to complete this section of the questionnaire. Five of these questions addressed the following areas, which may reflect depressive symptoms in men: alcohol use, social contacts, attention to daily matters, marital or family conflict, and health problems. The remaining seven questions were specific to the depressive symptoms outlined in the DSM IV (APA, 1994): (a) sleep and weight changes, (b) mood change, (c) loss of interest, (d) feelings of hopelessness, (e) lack of concentration, and (f) suicide ideation. The affirmative responses were summed to compute the spouse/partner rating. The total possible score on this section of the questionnaire is a value of 13. The Personal Data questionnaire is included in Appendix A.

The spouse/partner ratings pertaining to the farm operator were compared with scores on other measures to determine the relationship between mood and/or behavioral changes observed by the spouse/partner and the farm operator's level of depression, financial stress, and willingness to seek help from various resources.

Financial Stress Survey (Hoyt et al., 1995)

To measure financial stress, the procedure utilized by Hoyt et al. was modified for use in this study. Similar to the procedure utilized by Hoyt et al., respondents were asked to complete a questionnaire, asking if they were experiencing any of the following economic problems for their household: (a) having a decrease in income; (b) suffering from a financial loss; (c) difficulty making credit payments; (d) having to drop insurance coverage; (e) loan foreclosure; (f) going deeply into debt; and (g) having to use savings to meet expenses. In their study, Hoyt et al. had participants respond to yes/no questions and

the affirmative responses were summed to create a financial stress scale total. However, in this study, participants were asked to rate the severity of each of the seven economic problems. These questions were assigned a 7-point Likert scale, ranging from not a problem (value of 1) to very severe (value of 7), rather than a yes/no choice. This modification was conducted in order to provide interval data instead of categorical data, as interval data is more amenable to a wider variety of statistical analysis procedures. Respondents were asked to rate the severity of each of the seven economic problems for their household by circling the number that best applies to their situation. The values from these seven questions were then summed to provide the Financial Stress Survey total score, with the higher values suggestive of more severe economic problems. The highest possible total score on the Financial Stress Survey is a value of 49. For this sample, the scores ranged from 7 to 47. For the farm operators in this study, internal consistency reliability was .92 (alpha coefficient).

In order to obtain further information about their economic situation, participants were asked to respond to additional questions on this questionnaire. Participants were asked to rate the severity of their debt/asset ratio compared to other farmers on a 7-point Likert scale, ranging from "very good" (value of 1) to "very severe" (value of 7). Participants were also asked if they had other household income by checking either yes or no. If yes, they were then asked to provide the percentage of overall household income that is derived from other household income. Similarly, the respondents were asked if they were farming during the 1980s farm crisis. Those with affirmative responses were asked to rate the extent they have recovered from it, ranging from "fully recovered" (value of 1) to "did not recover" (value of 7) on a 7-point Likert scale. Similarly, those

respondents who were farming during the 1980s crisis were also asked to rate their perception of how the current farm crisis compares to that of the 1980s, on a 7-point Likert scale, ranging from "less severe" (value of 1) to "more severe" (value of 7). Furthermore, participants were asked to rate their thoughts about the economic future of their farm operation, ranging from "very optimistic" (value of 1) to "very hopeless" (value of 7) on a 7-point Likert scale.

To control for factors impacting their financial stress level, participants were asked to complete two additional questions on this questionnaire that addressed the following: (a) whether they had trouble with overland flooding or other environmental disasters in past four years and (b) asking them to list any other significant life stressors that occurred in past four years (i.e. serious illness, death in family, divorce, victim of violent crime, etc.). If they had experienced any environmental disasters or other significant life stressors, respondents were asked to indicate the type of disaster or stressor and rate the severity on a 7-point Likert scale, ranging from "not severe" (value of 1) to "very severe" (value of 7). A copy of the Financial Stress Survey is included in Appendix A.

Center for Epidemiologic Studies Depression Scale (CES-D)

The Center for Epidemiologic Studies Depression Scale (1971) is 20-item self-report scale designed to measure current levels of depression in the general population. The scale consists of items from previously developed scales. Originally developed for use in epidemiological studies of depressive symptomatology, this scale primarily addresses the somatic and affective aspects of depression (Center for Epidemiologic Studies, 1971). Respondents were asked to rate how often they have felt or behaved a

certain way during the past week. Each response on this questionnaire is scored from 0 to 3 on a scale, rating how frequently the symptoms have occurred during the past week, ranging from "rarely" (value of 0) to "most of the time" (value of 3) The ratings are summed to provide an overall total CES-D score. Reverse scoring is required on four items, #4, #8, #12, and #16. The possible total scores ranges from 0 to 60, with higher scores indicating more symptoms and more frequency of symptoms. A score of 16 or greater is considered clinically significant (Center for Epidemiologic Studies, 1971). For this sample of farm operators, the scores ranged from 0 to 40.

Internal consistency reliability is .85 (coefficient alpha) in community samples (Center for Epidemiologic Studies, 1971). It has been found to be a useful tool in assessing depressive symptoms in a rural context (Husaini, B., Neff, J., Harrington, J., Hughes, M., & Stone, R., 1980). For the farm operators in this study, internal consistency reliability was .898 (alpha coefficient).

The CES-D mean in the general population has been found to vary from 7.8 to 9.92, with a standard deviation between 7.5 and 9.31 (Center for Epidemiologic Studies, 1971; National Center for Health Statistics, 1980; Radloff & Tyler, 1986). Most researchers have used the mean score of 9 as the average CES-D total score in the general population when making comparisons with sample means (Radloff & Tyler, 1986). A copy of the CES-D is included in Appendix A.

Help-Seeking Questionnaire (Cook & Tyler, 1989)

A slightly modified version of the Help-Seeking Questionnaire (Cook & Tyler, 1989) was utilized in this study with the author's permission. This instrument consists of 23 items, measuring openness or resistance to receiving help from various resources.

Specifically, four categories of resources are presented in the questionnaire, which include 1) professionals; 2) people in general; 3) education/training; and 4) expression of negative emotions. The participants in this study were asked to respond whether they “agree” or “disagree” with each statement. To score the scale, one point was assigned to each response made in the direction of greater openness, or willingness, to receiving help. Reverse scoring was required for the following items: #1, #5, #8, #12, #14, #15, #17, #18, #19, #20, #23, and #28. Scores were summed for an overall total score. Means and percentages were computed for each of the category scores. Since there were an unequal number of questions in each of the four categories on this questionnaire, means and percentages were utilized rather than sums to compare category scores.

The original version of this scale, developed by Cook and Tyler (1989), was constructed from a pool of items that were administered to 117 North Dakota farm men and women. Regarding internal consistency, a Kuder-Richardson reliability coefficient of .85 was obtained (Cook & Tyler, 1989). For the farm operators in this study, internal consistency reliability was .84 (alpha coefficient). The Help-Seeking Questionnaire is included in Appendix A.

Hypotheses

The following hypotheses were developed based on information obtained in the review of the literature:

Hypothesis 1. The total mean score on the CES-D for the sample will be significantly higher than that found on the CES-D scores for the general population.

Hypothesis 2a. The scores on the Financial Stress Survey will be significantly positively correlated with the scores on the CES-D.

Hypothesis 2b. Age will be significantly negatively correlated with the total CES-D scores.

Hypothesis 2c. If there is a significant relationship between scores on the Financial Stress Survey and the CES-D, the Financial Stress Survey scores will account for more of the variance in the prediction of the CES-D scores than the demographic variables and number of years farming.

Hypothesis 3. Farm operators will be more willing to seek help from sources other than mental health professionals, with the highest score found on the People in General and lowest score on the Expression of Negative Emotions category of the Help-Seeking Questionnaire.

Hypothesis 4. Age will be significantly negatively correlated with the overall scores on the Help-Seeking Questionnaire.

Hypothesis 5. Years of education will be significantly positively correlated with the overall scores on the Help-Seeking Questionnaire.

Hypothesis 6. The total score on the Financial Stress Survey will be significantly positively correlated with the overall scores on the Help-Seeking Questionnaire.

Data Analyses

All data analyses were computed by utilizing the SPSS software package for Windows version 10.0. The analyses consisted of descriptive, hypothesis-testing, and exploratory statistical procedures. An alpha level of .05 was utilized for all statistical analyses in determining the level of significance.

Since I was interested in the farm operator population, only the farm operator data was analyzed. The spouse/partner data was not analyzed at this time, except for their

observational ratings on the Personal Data Questionnaire that pertain to the farm operator's mood and behavioral changes. These ratings were referred to as the spousal/partner ratings and were compared with the farm operator's scores on other measures.

Descriptive statistical analyses were computed in order to describe the sample characteristics. Frequencies, percentages, mean scores, and standard deviations were computed when appropriate for the demographic data, such as age, years of education, and marital status. Gender was not included as a demographic variable in the analyses of the farm operator data since the large majority of farm operators were male.

Further descriptive statistical analyses were computed. Means, frequencies, and percentages were obtained for the spousal/partner ratings portion of the Personal Data Questionnaire. Descriptive statistics were also computed regarding the farm operation, such as number of years farming and the primary crops grown. Similarly, descriptive analyses of the data were also conducted to determine the frequencies, percentages, standard deviations, and means of the total scores on the CES-D, Financial Stress Survey, and of both the category and total scores on the Help-Seeking Questionnaire.

Correlations were calculated between the demographic data and scores on the measures of depressive symptoms and financial stress. A Pearson product moment correlation matrix was computed for the total Financial Stress Survey scores, total scores on the CES-D, age, marital status, and years of education. Partial correlations were also computed between these same variables, controlling for the possible confounding variables of other significant life stressors and/or experiencing an environmental disaster.

To test Hypothesis 1, the CES-D data was first analyzed utilizing descriptive statistical procedures discussed above to determine the mean of the total scores for the participants in this study. The data for the total CES-D scores were then analyzed by calculating a one-sample sample t-test, in order to determine whether the sample mean was significantly higher than the CES-D mean of approximately 9 found in the general population through previous research (Radloff & Locke, 1986).

Hypotheses 2a and 2b were tested by computing Pearson product moment correlations between the Financial Stress Survey total scores and age with the CES-D scores. Partial correlations were also computed to control for stress related to environmental disasters and other life stressors. Regarding hypothesis 2c, a multiple regression analysis was computed for the Financial Stress Survey scores, age, marital status, number of years farming, and years of education with the CES-D scores. This regression analysis determined the amount of variance accounted for by the Financial Stress Survey scores, age, marital status, number of years farming, and years of education in the prediction of the CES-D scores.

Regarding Hypothesis 3, frequencies, percentages, and means, computed in the descriptive analyses, were compared for each category of the Help-Seeking Questionnaire, in order to determine whether the People in General and the Negative Emotional Expression categories had higher willingness scores than the Professional and Education/Training categories.

For Hypotheses 4 through 6, Pearson product moment correlations were used to test the remaining hypotheses. Age and years of education were correlated with the total scores on the Help-Seeking Questionnaire. In addition, total scores on the Financial

Stress Survey were correlated with the overall scores on the Help-Seeking Questionnaire. Partial correlations were also computed to control for stress related to environmental disasters and other life stressors.

Further exploratory analyses were conducted to examine the relationship between the demographic variables, such as age, education level, and marital status, and help-seeking behavior. A multiple regression analysis was computed to determine the relative contribution of each variable in the prediction of Help-Seeking Questionnaire scores.

Exploratory analyses were also conducted to determine the relationship between the spousal/partner ratings on the Personal Data Questionnaire and the farm operator's scores on the CES-D, Financial Stress Survey, and the Help-Seeking Questionnaire. Based on the spousal/partner ratings, the farm operators were classified into two groups using a cutoff score of six: (1) those with high spousal/partner ratings; and (2) those with low spousal/partner ratings. It was believed that these groups differed as to the degree of possible depressive symptoms, evidenced by behavioral and/or mood changes. A series of independent sample t-tests were then computed to test for significant differences between the two farm-operator groups on their CES-D scores. In addition, independent sample t-tests were also conducted for the scores on the Financial Stress Survey and the Help-Seeking Questionnaire, in order to determine whether there was also a significant difference between these groups on these measures.

CHAPTER III

RESULTS

The results are presented in four sections. In the first section, I present the results addressing the level of depressive symptoms found in this sample of farm operators. In the second section, I present the data on financial stress and the relationship between financial stress and depressive symptoms. In section three, I focus on the results regarding the willingness to seek help from various resources. Finally, in the fourth section, I present the results from the spousal/partner ratings of the farm operators' mood and behavioral changes observed, as well as the relationship between these ratings and the level of depressive symptoms, financial stress, and willingness to seek help reported by the farm operators in this sample.

Level of Depression

I hypothesized (Hypothesis 1) that the CES-D total score mean for this sample of farm operators would be higher than for the CES-D mean in the general population. For the 153 farm operator participants who completed the CES-D questionnaire in its entirety, an overall mean score of 14.47 ($SD = 9.82$) was obtained for the CES-D total scores. This overall mean score was compared to the CES-D mean score of 9 found in the general population (Radloff & Locke, 1986). The CES-D mean for the participants in this study was greater than that obtained in the general population, $t(152) = 6.89, p = .00$, with significance obtained at the .05 alpha level. This finding lends support to the idea that

farm operators are experiencing a high level of depressive symptoms, much higher than typically found in the general population.

Percentages for the total scores on the CES-D were obtained through descriptive statistical analyses to determine the depression rates found in this sample of farm operators. Approximately 42.3% of the farm operator participants who completed the CES-D questionnaire ($n = 153$) had CES-D total scores of 16 or above. A score of 16 is considered the clinical cut off score for this instrument and the level of depressive symptoms suggesting a possible need for mental health services (Center for Epidemiologic Studies, 1971.)

The rate of depressive symptoms (42.3%) found in this study was compared to the rate of depressive symptoms reported by Linn and Husaini (1987). In their research, they found that approximately 19% of the agricultural respondents and about 17% of non-farmers had CES-D scores of 16 or above. This comparison indicates that the depression rate reported in this sample of farm operators was found to be much greater than the rates found in a similar population (19%). The rate of depressive symptoms in this sample was more than double the rate of depression found in these other groups.

Although it was thought that the farm operators might tend to under-report depressive symptoms, this expectation was not supported by the data for this sample. The high level of depressive symptoms reported by the farm operator participants on the CES-D suggests that they were reporting depressive symptoms if present, rather than under-reporting or minimizing their problems. It is important to consider, however, that the true level of depressive symptoms is unknown. One could argue that the participants may have under-reported symptoms to a degree, as indicated by the large standard deviation

($SD = 9.82$), which would increase the true rate of depression to an even higher level. The results of the partner/spousal ratings, however, suggest that these farm operators were likely not under-reporting symptoms. These ratings were consistent with the level of depression reported by this sample of farm operators and will be discussed in more detail later in the results section.

Financial Stress

Descriptive analyses were computed for the Financial Stress Survey scores. The Financial Stress Survey scores were computed by summing the ratings to the seven questions regarding the respondent's current economic situation. According to the results of the descriptive statistical analyses, a total of 162 farm operators completed the Financial Stress Survey in its entirety. The overall mean obtained was 20.85 with a standard deviation of 9.71. Scores ranged from a value of 7 to 47. Since the possible total score for the Financial Stress Survey is a value of 49, the mean obtained for this sample suggests that they are reporting severity of financial problems about in the middle range. Regarding percentages, 43.2% of the participants who completed the Financial Stress Survey ($n = 162$) had total scores above the mean score of 20.85. This finding indicates that slightly less than half of the farm operators reported more severity of financial problems, relative to others in the current sample.

Descriptive statistical analyses were also computed for the additional questions pertaining to the farm operator's financial situation. A total of 161 farm operator participants rated the severity of their debt/asset ratio compared to that of other farmers, producing a mean score of 3.17 ($SD = 1.51$). As this question required them to rate the severity of their debt/asset ratio on a 7-point Likert scale, with a value of 7 indicating the

highest severity, these farm operators reported an average severity rating in the middle range. Approximately 37% of the participants in this study reported a severity rating of 4 or higher, suggesting that these farm operators perceive their debt asset ratio to be more severe compared to that of other farm operators. It is important to note that this rating was based solely on the farm operator's perception of the debt asset ratio relative to other farm operators. The participants were not asked to provide a specific figure for their debt-asset ratios. Rather, they were asked to rate how severe they perceived their debt asset ratio in comparison to others.

A majority of farm operators (115) reported having other household income, comprising 68.5% of those participants who responded to this particular question ($n = 168$). The mean percentage of household income derived from other sources was 39.75% ($SD = 29.86$). Approximately 41% of these farm operators reported 50% or more of their overall household income derived from other household income.

Regarding questions pertaining to the previous farm crisis in the 1980s, the majority of the farm operator participants was farming during that time and believes the current farm crisis is more severe. Of those farm operator participants ($n = 166$) who responded to the question, 95.2% had been farming during the 1980s farm crisis. Most of the farm operators believe they have somewhat recovered financially from the 1980s farm crisis. When asked about the extent they had recovered financially from the previous crisis, the farm operators responding ($n = 156$) reported a mean score of 3.16 ($SD = 1.69$), on a 7-point Likert scale (with a value of 7 indicating they did not recover). Nearly 35% reported a rating of 4 or higher on this scale, suggesting that these farmers

had some difficulty recovering financially from the previous crisis. Only 23 participants (14.7%) reported being fully recovered financially.

The majority of the farm operators in this sample believe the current farm crisis is more severe than the 1980s farm crisis. The mean score of 5.41 was obtained ($SD = 1.32$) for the severity rating of the current farm crisis compared to that of the 1980s. Since the ratings were on a 7-point Likert scale, with a value of 7 indicating highest severity, the mean value of 5.41 falls near the upper end of this scale. 90.1% of the respondents reported a severity rating of 4 or greater. Based on these findings, the farm operators in this sample believe the current farm crisis is much more severe than the 1980s farm crisis.

The majority of the farm operators reported some hopelessness regarding the economic future of their farms. Nearly 66% of the farm operator participants who completed this question ($n = 163$) reported a hopeless rating of 4 or higher, on a Likert scale rating from 1 to 7 (with 7 indicating feeling "very hopeless" about the economic future of the farm). The mean obtained for this rating scale was 4.21 ($SD = 1.33$) for this sample of farm operators. Only two farm operator participants (1.2%) reported feeling "very optimistic" about the economic future of their farm operation.

Descriptive analyses were also computed for the additional questions regarding factors contributing to financial stress, pertaining to environmental disasters and other significant life stressors. Of the 166 participants who responded to the question about whether they had experienced flooding and/or other environmental disasters within the last four years, 121 or 72.9% reported that they had experienced overland flooding or an environmental disaster. The type of disaster listed by these farm operators included too

much moisture (29.8%), scab (6.6%), flooding (35.5%), hail (11.6%), not able to plant (2.5%), drought (7.4%), crop diseases (14%), bad winter (.8%), insects (2.5%), unspecified weather conditions (1.6%), ditching (.8%), unspecified crop damage (.8%), tornado (.8%), lost production (.8%), low prices (2.5%), wind (1.6%), and potholes (.8%). An average severity rating for the environmental disaster was 5.07 ($SD = 1.44$). 83.2% reported a severity rating of 4 or higher.

Of the 168 participants who responded to this question, 79 reported experiencing a significant life stressor within the past four years. The type of significant life stressors varied, although several categories appeared to emerge. These main categories of stressors included the following: Health problems pertaining to self or a family member, death in the family, divorce, family member moving away, and stress related to farming (i.e. cattle prices, farm credit loan denied, losing farm, low grain market prices, and shortage of farm labor.) As participants could list up to three stressors, three separate means were computed for the severity of each stressor listed. For the first stressor, 79 farm operator respondents listed a significant life stressor. A mean of 5.07 ($SD = 2.76$) was obtained for the total Likert ratings, ranging from 1 to 7 (value of 7 indicating a "very severe" rating). Regarding the other life stressors, 37 farm operators listed a second life stressor and 18 farm operators reported a third stressor. A mean of 1.08 ($SD = 2.27$) was obtained for the second stressor, while a mean of .49 ($SD = 1.58$) was obtained for the third stressor listed. It is not surprising that the means for the three listed stressors decreased accordingly, as it is likely that the farm operators listed the most severe life stressor first and so forth.

Financial Stress and Depressive Symptoms

Several of the expected relationships between financial stress and depressive symptoms were found in the data from this sample of farm operators.

Hypotheses 2a and 2b were tested by examining the correlations between Financial Stress Survey scores and age with the CES-D scores. Hypothesis 2a predicted that the scores on the Financial Stress Survey would be positively correlated with the scores on the CES-D. Pearson product moment correlations were computed for the total Financial Stress Survey scores and the CES-D total scores (see Table 1). A positive correlation, $r = .522, p = .000$, was found between the Financial Stress Survey total score and the CES-D total score. Based on this result, there is a significant relationship between the level of financial stress reported and the level of depressive symptoms reported, with a higher level of overall financial stress associated with a higher level of depressive symptoms. In other words, participants who reported more financial problems also reported more depressive symptoms.

In order to control for the impact of extraneous stressors, such as environmental disasters and other significant life stressors, on the relationship between the Financial Stress Survey scores and the CES-D scores, partial correlations were computed (see Table 2). A positive partial correlation was obtained, $pr = .521, p = .000$. Based on this result, the Financial Stress Survey and the CES-D scores are significantly related in a positive direction, even when controlling for these extraneous sources of stress in the participant's life.

I predicted in Hypothesis 2b that age would be significantly negatively correlated with the total CES-D scores. Although a negative correlation was obtained as expected, r

= -.048, there was not a relationship between age and total CES-D scores as had been expected. This indicates that age was not associated with depressive symptoms reported on the CES-D.

Table 1

Pearson Correlations Between CES-D Scores, Financial Stress Survey Scores, and Demographic Variables

	1	2	3	4	5	6
1. Age	--	-.20*	.194*	.808**	-.227**	-.048
2. Education		--	.087	-.263**	-.016	-.007
3. Marital			--	-.002	-.030	.015
4. Years				--	-.176*	-.016
5. Stress					--	.522**
6. CES-D						--

n = 143

* $p < .05$ (two-tailed), ** $p < .01$ (two-tailed)

Neither education nor marital status was correlated with the CES-D total scores. Interestingly, however, age was found to be negatively correlated with Financial Stress Survey scores, $r = -.227$, $p = .003$. As would be expected, age and education level were found to be negatively correlated, $r = -.200$, $p = .008$, suggesting that the older participants reported less education than those who were younger. In addition, a positive relationship was also found between age and marital status, $r = .194$, $p = .010$. Since the

marital status variable was coded with the lowest value indicating "single" marital status, this positive correlation between age and marital status is as would be expected. Younger participants were more apt to be single, compared to older participants who were more likely to be married.

Table 2

Partial Correlations between CES-D Scores, Financial Stress Survey Scores, and Demographic Variables

	1	2	3	4	5
1. Age	--				
2. Education	-.1118	--			
3. Farming	.8216*	-.2227*	--		
4. Stress	-.2151*	.0695	-.1507	--	
5. CES-D	-.1175	.0909	-.0666	.5210*	--

n = 99

Note: Controlling for Other Life Stressors 1, 2, and 3, and Severity of Environmental Disaster

* $p < .05$ (Two-tailed)

The number of years farming was also included in the correlational matrix, although it was not stated in the original hypotheses. Interestingly, the number of years farming was found to be negatively correlated with the Financial Stress Survey total scores, $r = -.176$, $p = .018$. Those participants who had been farming longer reported less financial stress. Consistent with the literature, farmers who have been farming longer may have acquired more assets and financial resources over the years. Therefore, they

may be less financially impacted by the current farm crisis compared to those farmers who have been farming fewer years. As would be expected, the number of years farming was also correlated with age, $r = .808, p = .000$, and educational level $r = -.263, p = .001$. The relationship between the number of years farming and age is not surprising, since it is expected that those who have been farming longer are also older. Similarly, those participants who have been farming longer tended to be less educated than those who have been farming fewer years.

Regarding Hypothesis 2c, the relative contribution of financial stress and demographic variables in predicting the CES-D scores was explored. Financial stress was found to account for more of the variance in CES-D scores than the demographic variables and was a significant predictor of CES-D total scores, $t(142) = 7.221, p = .000$. A multiple regression analysis, utilizing the enter method, was computed to determine the amount of variance in CES-D total scores accounted for by the following variables; Financial Stress Survey scores, age, marital status and education level (see Table 3). Number of years farming was also included in the regression analyses to improve the strength of the analysis, as it was significantly related to the other variables, such as age and education level, but not to the criterion variable, CES-D scores. In other words, number of years farming functioned as a suppressor variable in this multiple regression analysis. Financial Stress Survey scores were found to be a significant predictor of CES-D total scores, $t = 7.221, p = .000$. None of the other variables were found to be significant predictors.

Table 3

Summary of Simultaneous Regression Analysis for Variables Predicting CES-D Scores

Variable	<u>B</u>	<u>SE B</u>	β	τ
(Constant)	-1.384	5.362		-.258
Age	1.188E-02	.109	.014	.109
Education	.187	.649	.022	.289
Marital	.366	1.049	.027	.349
Years Farming	6.264E-02	.110	.073	.568
Financial Stress	.553	.077	.539	7.221*

* $p < .05$

Help-Seeking Behavior

Participants in this study reported greater willingness to seek help from People in General and Professional resources, compared to the willingness to express negative emotions or talk about problems. This is consistent with what was expected. Hypothesis 3 predicted that farm operators would be less willing to seek help from mental health professionals and more willing to seek help from people in general or deal with the issues themselves. To examine this hypothesis, descriptive analyses were computed for the scores on the four Help-Seeking Questionnaire categories: Professionals, People in General, Education/Training, and Negative Emotional Expression. Means for each of the categories were computed and compared (See Table 4). The Professional category had the highest mean ($M = 7.86$, $SD = 3.60$), while the Negative Emotional Expression category had the lowest mean ($M = 1.40$, $SD = 1.32$).

Table 4

Mean Category Scores for Help-Seeking Questionnaire

Category	n	<u>M</u>	<u>SD</u>
Professionals	134	7.8582	3.60
People in General	144	4.0139	1.32
Education	145	1.6069	1.25
Expression of Negative Emotion	149	1.3960	1.31
Mental Health Professionals	135	3.6370	2.32
Clergy	155	1.2968	.87

The results for the Help-Seeking Questionnaire categories are somewhat as expected. The People in General category had a higher mean ($M = 4.01$, $SD = 1.25$) than the Negative Emotional Expression category, which was consistent with what was hypothesized. The farm operators were more willing to seek help from people in general, or informal resources, such as another farmer or a spouse. They were least willing to help themselves through expressing negative emotions. However, what was not expected was that the Professional category would have the highest mean. For this sample of farm operators, the Professional category produced the highest mean, while the People in General category had the next highest category mean. The farm operators expressed more willingness to seek help from various professional resources, rather than people in general.

Since the Professional category includes a variety of professions other than mental health, I also computed the mean for those questions that pertained strictly to mental health professionals. A mean of 3.64 ($SD = 2.33$) was obtained for the mental health professionals, which suggests that the participants were less willing to seek help from a mental health professional compared to professionals in general. In addition, participants were less willing to seek help from mental health professionals than people in general, as the People in General category had an obtained mean of 4.01 ($SD = 1.25$). This finding is consistent with what was expected.

Although clergy questions were also included within the Professional category on the Help-Seeking Questionnaire, I also computed the mean score for the questions that pertained specifically to clergy members, in order to determine the level of willingness to seek help from these professionals. The mean obtained for the clergy specific questions was 1.30 ($SD = .87$), lower than the mean for the mental health professionals. This finding was contrary to what has been shown in the literature, as the participants in this study were more willing to seek help from mental health resources rather than clergy members.

The other professional groups within the Professional category were also compared. Questions pertaining to an accountant, farm credit officer, or financial counseling were combined to determine a mean score for this group of professionals. A mean of 1.47 ($SD = .7771$) was obtained. Reading self-help books had the next highest mean of .7190 ($SD = .4510$). Listening to radio call-in shows and talking to a hairdresser or bartender received the lowest means within this Professional category, with means of $9.032E-02$ ($SD = .2876$) and .5641 ($SD = .4975$), respectively. It appears that the

respondents were most willing to seek help from a professional in the financial field, such as financial counselor, accountant, or farm credit officer.

The total scores on the Help-Seeking Questionnaire produced an overall mean of 15.03 ($SD = 5.54$). When compared with a possible total score of 23 for this questionnaire, the overall mean suggests that the farm operators who participated in this study were moderately willing to seek help from various resources. Their mean score was located at approximately 65% of the total possible score. In other words, the obtained average score for the Help-Seeking Questionnaire total scores was over the half-way point, suggesting that the farm operators endorsed more than half of the items on the questionnaire in a favorable direction for willingness to seek help.

Demographics and Help-Seeking Behavior

Only some of the expected relationships between the demographic variables and help-seeking behavior were found in the data from this sample of farm operators.

A Pearson product moment correlation matrix was computed between the following variables to determine if various demographic variables were related to help-seeking behavior: age, marital status, education level, and the Help-Seeking Questionnaire total scores. Help-Seeking Questionnaire total scores were correlated with age ($r = -.094, p = .151$), marital status ($r = .077, p = .201$), and education level ($r = .216, p = .008$) (See Table 5). Of note, age was not found to be correlated with the Help-Seeking Questionnaire scores, although the relationship was in the negative direction as predicted in Hypothesis 4. In addition, marital status was not significantly correlated with Help-Seeking Questionnaire scores.

Education level was found to be positively correlated with the Help-Seeking Questionnaire scores as expected. (Hypothesis 5). The farm operator participants who reported more education were more willing to seek help from various resources, compared to those with less education.

Table 5

Pearson Correlations Between Help-Seeking Questionnaire Scores and Demographic Variables

	1	2	3	4	5
1. HSQ Total	--	.094	.216*	.077	-.143
2. Age		--	-.235**	.042	.819**
3. Education			--	.028	.358**
4. Marital				--	-.094
5. Farming					--

n=122

* $p < .05$

In Hypothesis 6, I predicted that the total score on the Financial Stress Survey would be significantly positively correlated with the overall scores on the Help-Seeking Questionnaire. A Pearson product moment correlation was computed for these variables. A correlation was obtained between Financial Stress Survey total scores and the Help-Seeking Questionnaire total scores, $r = -.231$, $p = .010$, which was significant at the .05 alpha level utilized in this study. However, the relationship was found to be in the opposite direction than expected, as a negative correlation was obtained. This negative

correlation suggests that higher levels of financial stress were associated with less willingness to seek help, contrary to what was expected.

The relative contribution of age, education, marital status, and number of years farming in the prediction of help-seeking behavior was also explored in this study. A multiple regression was computed to determine the relative contribution of each variable in the prediction of Help-Seeking Questionnaire total scores. None of these variables were found to be predictors of help-seeking behavior. Education level was the only variable to approach significance ($t = 1.95, p = .054$), although not significant at the .05 alpha level.

The relationship between the level of depression and willingness to seek help was also explored, although it was not one of the study hypotheses established prior to the study. The level of depression was found to be negatively associated with overall willingness to seek help. A Pearson product moment correlation was obtained for the CES-D total scores and the Help-Seeking Questionnaire total scores, $r = -.210, p = .021$. This finding suggests that those respondents who reported higher levels of depression were less willing to seek help.

Spousal/Partner Ratings

The relationships between the spousal/partner ratings on the Personal Data questionnaire and the farm operators' scores on the CES-D, Financial Stress Survey, and the Help-Seeking Questionnaire were explored in this study. Pearson product moment correlations were computed for these variables. A series of t-tests were computed to test for significant differences between two farm-operator groups, determined by the spousal/partner ratings as exhibiting behavioral/mood changes or not.

The spousal/partner ratings were found to have a positive correlation with the farm operators' CES-D total scores, $r = .272, p = .012$. The level of depressive symptoms reported by the farm operators on the CES-D is associated with the mood and/or behavioral changes observed by the spouse/partner. Those with more depressive symptoms on the CES-D also tended to have higher spouse/partner ratings of their depressive symptoms, consistent with what would be expected. Although no formal hypotheses were established prior to this study, it was expected that those participants with more depressive symptoms would also display more mood and behavioral changes that would be observed by their spouse/partner. This was found to be the case, based on the data from this sample of farm operators.

Spousal/partner ratings were also related to the Financial Stress Survey total scores, $r = .319, p = .003$. This suggests that the spousal rating of observed mood and behavioral changes in the farm operator was related to the level of financial stress reported by the farm operator, with higher spousal rating scores associated with higher reported financial stress. The farm operator participants who exhibited more mood and/or behavioral changes, observed by their spouse/partners, reported higher levels of financial stress. On the other hand, the spousal/partner ratings were found to have a negative correlation with the Help-Seeking Behavior Questionnaire total scores ($r = -.328, p = .004$). This suggests that the farm operators who exhibited more behavioral and mood changes reported less willingness to seek help from various resources overall.

High and low categories for the spouse/partner ratings were compared with the farm operators' CES-D scores, Financial Stress scores, and Help-Seeking Questionnaire total scores. An independent samples t-test was computed for each of these variables,

using a cut off score of 6 for the spousal/partner rating categories (see Table 6). A significant difference was found between the means of the Help-Seeking Questionnaire total scores for the high versus low spousal/partner rating categories ($t = -3.845, p = .001$). The average Help-Seeking Questionnaire score for those with high spousal/partner ratings was 10.70 ($SD = 3.50$), while the average score for the low spousal/partner ratings was 15.68 ($SD = 5.24$). This finding suggests that the farm operators whose

Table 6

CES-D Scores, Financial Stress Scores, and Help-Seeking Questionnaire Scores by Spousal/Partner Rating Categories

	N	μ	<u>SD</u>	τ	df
CES-D				1.538	12.348
High Spouse Ratings	10	16.40	9.26		
Low Spouse Ratings	60	11.52	9.47		
HSQ Total				-3.845*	16.622
High Spouse Ratings	10	10.70	3.49		
Low Spouse Ratings	60	15.68	5.24		
Financial Stress				1.769	11.550
High Spouse Ratings	10	25.45	9.85		
Low Spouse Ratings	60	19.58	8.84		

Note. Spouse ratings represents spouse/partner ratings total score
* $p < .05$ (two-tailed)

spouse/partner observed more mood and/or behavioral changes reported less willingness to seek help from various resources. On the contrary, those participants whose spouse/partner observed less changes were more willing to seek help. There were no differences obtained for the CES-D or Financial Stress Survey means for the high versus low spousal/partner rating categories.

Generalizability of Sample

To determine the representativeness of this farm operator sample to the general population of farm operators in North Dakota, exploratory analyses were computed. Demographic variables, such as gender, age, number of years farming, size of farm operation, and educational level, were compared for this sample and the general population of farm operators in North Dakota. In this sample, 98% of the respondents were males, compared with 95.62% of farm operators in North Dakota. This was not found to be significantly different (*Chi-Square* = 2.381, $p = .123$). The average age of the respondents in this sample was 55.02, while the average age of a farmer in North Dakota is 51.4 (USDA, 1997). A significant difference was found between these age means, $t = 3.890$, $p = .000$. Similarly, the average number of years farming reported by this sample was 31.34 ($SD = 12.20$), which was also found to differ significantly from the state's average ($X = 23.4$), $t = 8.53$, $p = .000$). As a result, this sample of farm operators was significantly older and had been farming more years, on the average, than the general population of farm operators in the state.

Since I did not ask questions in this study regarding socioeconomic status, *Prairie Grains Magazine* readership data (1999) was used to compare with state statistics. Since my sample was obtained from this magazine's subscriber list, the use of this readership

data was thought to reflect similar demographic characteristics to my sample. Fifty-nine percent of those who completed the 1999 *Prairie Grains Magazine's* readership survey ($n = 246$) reported gross annual sales of \$100,000 or higher. In comparison, farm operators in North Dakota reported an average of \$94,064 in annual gross sales (USDA, 1997). Similarly, the average number of acres planted by *Prairie Grains Magazine's* respondents was 1,777.45 ($SD = 1584.22$), compared with the average planted acres in North Dakota of 1,290.00. This was found to be significantly different, $t = 3.242$, $p = .002$, which suggests the *Prairie Grains Magazine* readers have significantly larger farms compared to the average size of farms in the state. It is important to note, however, that the North Dakota statistics included those farmers ($n = 7,581$) who have less than 10,000 gross annual sales and are not likely full-time farm operators (USDA, 1997).

The education level of *Prairie Grains Magazine's* subscribers and North Dakota farm operators was also compared. Although my survey included questions pertaining to education level, the categories I used were not consistent with the categories used for the state data. Therefore, I utilized the *Prairie Grains Magazine* data from the 1999 readership survey in this comparison. The data from this survey showed the following percentages: 10% had less than high school education; 27% had high school education; 29% had some college, 10% had associate or technical school degree; 16% had a bachelor's degree; and 7% had a graduate study or degree (MAWG, 1999). In comparison, the following percentages were reported for full-time farm operators in North Dakota ($N = 13,325$): 8.48% had less than high school education; 35% had a high school education; 30.42% had some college, no degree or associate degree; 9.6% had a bachelor's degree; and .81% had a graduate or professional degree (United States Census

Bureau, 1990). Of note, the Census data used were from 1990, as the cross-tabulations between occupation and education level were not yet available from the 2000 Census. A Chi-Square analysis was computed to determine whether a significant difference exists between these education levels. A significant difference was found, *Chi-Square* = 51.35, $p = .000$.

Since significant differences were obtained for age, years farming, and education level, partial correlation coefficients were computed to control for these variables. Financial stress and the level of depressive symptoms reported in this sample were significantly correlated, $r = .53$, $p = .000$. Similarly, financial stress and willingness to seek help were negatively correlated, $r = -.21$, $p = .022$. However, the level of depressive symptoms and willingness to seek help were not significantly correlated, $r = -.17$, $p = .067$. In other words, when controlling for age, number of years farming, and education level, the level of depressive symptoms was no longer correlated with willingness to seek help as had been previously found when not controlling for these variables.

CHAPTER IV

DISCUSSION

The purpose of the present study was to explore the level of depression in North Dakota farm operators, as well as to determine the level of economic stress and willingness to seek help from various resources. Given the seriousness of the current farm economic crisis, it seemed essential that research be conducted on the farm population and the psychological impact of this crisis. Yet, few researchers had addressed this issue. In fact, only limited research has been conducted on the rural population in general, especially those employed as farm operators. The research that does exist is somewhat outdated, conducted in response to the 1980s farm crisis. No current researchers have examined the level of depression, economic stress, and help-seeking behaviors of farm operators. Therefore, I undertook this study to examine these very important issues impacting farm operators today.

I expected that a high rate of depression would be found among North Dakota farm operators. I also predicted that a high level of financial stress would be reported, with this financial stress an important factor in the level of depression. Furthermore, I also expected that farm operators would be less willing to seek help from professional resources, preferring informal resources or to deal with their problems on their own.

To summarize the major findings of this study:

1. Farm operators reported a high rate of depression nearly twice that found in previous research on the rural population. The average level of depression found in this study was significantly greater than the average level found in the general population.
2. Age, education, marital status, and number of years farming were not found to be related to the level of depression. None of these variables were significantly correlated with CES-D scores.
3. The level of financial stress reported was not as high as expected, with the average stress rating being in the middle range. However, the level of financial stress was found to be related to the level of depression, being a significant predictor in the level of depression. Financial stress was found to be associated with the level of depression, even when controlling for extraneous sources of stress.
4. Younger participants and those farming a fewer number of years reported higher levels of financial stress.
5. The majority of farm operators in this study believe the current farm crisis is more severe than the 1980s crisis and report some hopelessness for the financial future of their farming operation.
6. Participants reported a moderate level of willingness to seek help. As expected, participants in this study reported greater willingness to seek help from People in General and Professional resources in general, compared to willingness to seek help from mental health professionals or clergy specifically. They were most willing to seek help from various professional resources and least willing to express negative emotions to others.

7. Participants who were younger, reported less financial stress, and had more education expressed more willingness to seek help from various resources overall.
8. Those respondents who were more depressed expressed less willingness to seek help in general. However, when controlling for age, number of years farming, and education level, the level of depressive symptoms was no longer correlated with willingness to seek help.
9. Participants who exhibited more mood/behavioral changes (spousal/partner ratings) also reported higher levels of depression and financial stress, but they reported less willingness to seek help. Help-seeking behavior was the only variable to show a significant difference between high versus low categories of spouse/partner ratings, with high ratings associated with low willingness to seek help.

Interpretations

Farm operators in this study reported a high rate of depression, nearly twice that found in previous research on the rural population. This high rate of depression indicates that the farm operators, as a group, were experiencing significant depressive symptoms, with over 40% reporting a level of symptoms in the clinical range. When comparing to previous research findings, this rate was double that found in other studies of farm operators. Linn and Husaini (1987), for example, reported a depression rate of 19% in their sample of Tennessee farm operators. The high rate found in my study suggests that a serious problem of depression may exist in the farm operator population in North Dakota.

The average level of depression found in this study was significantly greater than found in the general population. As a group, the average level of depressive symptoms endorsed ($M = 14$) was higher than the average level of symptoms in the general

population ($M = 9$). Although I hypothesized that the level of depression would be high, I was concerned that the farmers may tend to underreport their symptoms, consistent with the literature on male depression (Pollack, 1998). In general, the farmers in this sample appeared to be admitting their experiences of depressive symptoms when present, although some variability was found ($SD = 9.82$).

When comparing various demographic variables, none of the variables were found to be associated with the level of depression. Age, education, marital status, and number of years farming were not found to be significantly associated with the level of depression reported in this sample. Age, in particular, was hypothesized to be negatively correlated with the level of depression. This was not supported by the results of this study. Given the findings of previous researchers, who found that younger farm operators were more depressed than older counterparts, it was surprising that a significant relationship was not found in this study (Hoyt et al., 1995; Schulman & Armstrong, 1989). However, the literature indicates that the relationship between age and depression in the farm population has not been consistently supported, as researchers have obtained mixed results (Keating, 1987; Linn & Husaini, 1987).

The spousal/partner ratings were associated with the level of depression, suggesting that farm operators who reported more depressive symptoms were also displaying more mood and/or behavioral changes. This finding is not surprising, as one would expect those experiencing more depressive symptoms to also be exhibiting associated mood and/or behavioral changes. The relationship found between these variables further supports the interpretation that the farm operators were not underreporting symptoms to a significant degree, but rather admitting such symptoms.

Respondents in this study, on the average, reported a moderate level of overall financial stress. This was not as high as expected, given the seriousness of the current farm economic crisis. Perhaps this moderate level of financial stress could be partially explained by examining the demographic characteristics of this sample. As a group, farm operators in this sample were older, had been farming more years, had larger farms, and were more educated than the general population of farm operators in North Dakota. In other words, this sample appears to be of higher socioeconomic status than the general population. Therefore, respondents in this study, as a group, may be less financially impacted by the farm crisis than expected.

Despite the moderate level of overall financial stress reported, the farm operators in this study appeared to be concerned about their financial situation. The majority (66%) of the respondents expressed some hopelessness for the financial future of their farming operation. In addition, they also believed that the current farm crisis is more severe than the 1980s crisis, with 90.1% reporting the current crisis as more severe. This finding is consistent with the results obtained in the research conducted by Stofferahn (1999) with this same population. The majority (approximately 60%) of farm operators in his survey reported high levels of concern/stress regarding the current farm crisis.

When examining the relationships between various demographic variables and financial stress, age and number of years farming were found to be associated with the level of financial stress. Younger participants and those farming a fewer number of years reported higher levels of financial stress. This finding is consistent with the literature. Researchers have reported higher levels of financial stress among younger farm operators compared to older farm operators (Armstrong, 1990; Linn & Husaini, 1987).

The overall level of financial stress was found to be related to the level of depression, regardless of various demographic variables. When controlling for age, number of years farming, and education level, financial stress was positively correlated with depression. In addition, financial stress was found to be associated with the level of depression, even when controlling for extraneous sources of stress. This finding is consistent with previous research, which has demonstrated strong support for the relationship between financial stress and depression in the farm population (Heffernan, 1985; Hoyt et al., 1995; Linn & Husaini, 1987; Lorenz et al., 1994; Ortega et al., 1994).

Further supporting the relationship between financial stress and depression, the level of financial stress was found to be a significant predictor in the level of depression in this study. Financial stress was the only variable to be a significant predictor. None of the demographic variables, such as age, marital status, number of years farming, and years of education, were found to be significant predictors of depression.

Of importance, the farm operators in this sample were found to differ from the general population of farm operators, in terms of age, number of years farming, size of farm, and educational level. Farmers in this sample were older, farming more years, had larger farms, and were more educated than the general population of farm operators in the state. As a group, therefore, this sample appeared to be of higher socioeconomic status compared to the general population. This brings into question the generalizability of the results of this study, which will be discussed later in the limitations section of this chapter.

Regarding help-seeking behavior, participants reported a moderate level of willingness to seek help, overall. This was somewhat surprising, given previous research

in this area. The literature suggests that the rural population tends to underutilize mental health services. It was expected, therefore, that the farm operators in this study would report a low level of willingness to seek help. Perhaps this moderate level of willingness to seek help could also be partially explained by considering the demographics of this sample. As discussed earlier, farm operators in this sample were older, had been farming more years, had larger farms, and were more educated than the general population of farmers in North Dakota. As a result, this sample may be more open to seeking help compared to farmers in the general population. They may be more educated regarding mental health issues and may be more apt to seek help from various resources when needed. The results in this study support previous findings, as higher socioeconomic status, especially education level, has consistently been associated with help-seeking behavior.

The discrepancy between the demographics of this sample and the general population may be due to two factors: (1) those who subscribe to *Prairie Grains Magazine* are of higher socioeconomic status, as they tend to have more assets and education; and (2) the state population statistics includes farm operators who were only farming part-time, not likely deriving a large source of income from their farming operations. What is difficult to discern is whether this sample had higher socioeconomic status in general, or whether this sample simply reflects full-time farm operators. The state statistics includes farm operations with less than \$1,000 in sales, likely considered "hobby farms", that may have lowered the state statistics regarding the size of farm operation. This would not be expected, however, to have an impact on age, number of years farming, or education level. In fact, it would be logical that part-time farmers would

be more educated, as they have employment outside the farm. However, the state statistics suggest otherwise, with those farmers in the general population having less education than those farmers in this sample. Therefore, it appears likely that the sample selected was of higher socioeconomic status in general.

As expected, participants in this study reported greater willingness to seek help from informal resources or various professional resources, compared to mental health professionals specifically. They were most open to receiving help from People in General and Professionals in general. On the other hand, they were least willing to help themselves by expressing negative emotions to others. These findings were consistent with the literature in this area, as people in rural communities tend to utilize informal resources for help rather than professional mental health resources. Rural residents are also reluctant to express negative emotions, as they tend to hold more traditional beliefs and highly value autonomy, independence, and individualism.

Farm operators in this study were more willing to seek help from mental health resources than from educational resources or clergy. This finding is contrary to previous research in this area. In the literature, farmers have been found to be more willing to seek help from clergy rather than mental health professionals. For example, in a farm life poll, farm operators in North Dakota reported more likelihood of seeking help from clergy (20.4%) than a mental health professional (6.6%) (Stofferahn, 1999). It is unclear why this discrepancy exists. More research is needed in the area of help-seeking attitudes and behaviors for this population, in order to better understand their help-seeking preferences and subsequently understand how to best treat this population.

According to the results of this study, farm operators who were younger, had more education, and had lower levels of financial stress, were more open to seeking help from various resources overall. These findings are consistent with previous research in this area. In the literature, age and education have consistently been found to be associated with favorable help-seeking attitudes. Those who were younger and more educated were more willing to seek help from various resources. What is of concern, however, is that farm operators who reported higher levels of financial stress also reported less willingness to seek help from various resources. This finding suggests that farm operators who may be most at risk for depression, and consequently in need of mental health services, may be least willing to seek help and the necessary treatment.

Another interesting finding involved the level of depression and the degree of openness to seeking help. Those respondents who were more depressed expressed less willingness to seek help in general. However, when controlling for age, number of years farming, and education level, the level of depressive symptoms was no longer correlated with openness to seeking help. It appears, therefore, that these demographic variables were influencing the relationship between depression and help-seeking attitudes. In other words, an interaction was occurring between the demographic variables and the relationship between the level of depression and openness to seeking help. When the effects of these demographic variables were removed, the relationship between depression and openness to seeking help was no longer significant.

Farm operators who exhibited more mood/behavioral changes, according to the spousal/partner ratings, also reported higher levels of depression and financial stress, but they reported less willingness to seek help. Help-seeking behavior was the only variable

to show a significant difference between high versus low categories of spouse/partner ratings, with high ratings associated with less willingness to seek help. It appears that those farm operators who exhibited more mood and/or behavioral changes were more unlikely to seek help from various resources, although they are experiencing higher levels of depression and financial stress. These findings are of concern, since those participants who were exhibiting more symptoms of depression were less willing to seek help. In other words, those in most need were least open to seeking help. Perhaps those who were exhibiting more symptoms of depression were consequently feeling hopeless and lacking motivation. Therefore, they may have expressed less openness to seeking help. It could also be that they were exhibiting more depressive symptoms because they did not have a support system of helping resources in their lives. More research is needed regarding mood and/or behavioral changes and help-seeking attitudes, in order to fully explain these results.

Limitations of the Study

As with all survey research, there were several limitations of this study due to the nature of the study design. The first limitation pertains to the sample selection. This sample was selected from a farm publication mailing list, since no complete listing of farm operators was feasibly available. This mailing list excluded farm operators who did not receive this magazine, which was nearly half of all the farm operators in the state. As a result, the sample of farm operators chosen for this study may not reflect a truly random sample of this population.

The sample selected may be a biased sample. Those farm operators who were included on the *Prairie Grains Magazine's* mailing list may be qualitatively different than

those who were not. As stated previously, this sample was found to differ from the general population of farm operators in the state on several demographic variables, such as age, number of years farming, size of farming operation, and education level. Those who responded to the survey were older, had been farming more years, had larger farm operations, and had more education. The results of this study, therefore, are likely not generalizable to the population of farm operators in the state.

Another limitation involved the study design. Because this study involved survey research, I was not able to control for extraneous factors that may have impacted the results. Data was collected in early spring (March 2001) and may have been impacted by the weather. At that time, it was colder than average and was the second driest spring on record (National Oceanic and Atmosphere Administration, 2001). That may have impacted the results, as farmers may have been concerned about the upcoming growing season. Timing may also have had an impact on the level of financial stress reported, as the farm operators were preparing for another growing season when the data was collected. They were likely in the process of obtaining operating loans, buying seed, and budgeting operating expenses for the upcoming growing season. It would be interesting to compare the results with a replication of this study, timing delivery of the questionnaires in the fall, shortly after harvest has been completed.

Operationalizing the definition of a "farm" was also a limitation of this study. The USDA (2001) defines a farm as any operation that grosses \$1,000.00 per year from the sale of agricultural products. This broad definition includes part-time, hobby farms and individuals seeking to augment their income. My study was aimed at those farmers who derive their principal income from their farming operation. Although the mailing list

utilized for sample selection was more specifically geared toward these farmers, there was likely much variance in the size of farms. Since I did not include a question about farm size in my survey, I was not able to compare the results across categories of farm size. Perhaps the experiences are somewhat different for a farm operator of a small family farm versus a large farming operation.

Another limitation of this study pertains to the measures utilized. The Help-Seeking Questionnaire was a poor measure of help-seeking behavior. I chose this questionnaire because it was designed for use with this population. However, this questionnaire tends to be a measure of help-seeking attitudes rather than help-seeking behavior, as its authors indicated (Cook & Tyler, 1989). It is a self-report measure of hypothetical "openness" to seeking help but does not provide factual accounts about what the respondents actually did or would do. Therefore, the results of this questionnaire should be considered tentatively when examining actual help-seeking behavior.

Openness or willingness to seek help does not necessarily mean that the person would actually seek help from that resource. Based on the results of this study, farm operators may be somewhat open to seeking help but, for various reasons, are unable to seek such services. Research utilizing a measure of help-seeking behavior is needed, in order to determine which resources the farm operators actually utilize to seek help.

There were several problems with the Help-Seeking Questionnaire itself. There were an unequal number of questions in each of the four categories, which resulted in using the mean score when comparing the categories. The authors of this questionnaire summed across each of the four categories of resources in their study (Cook & Tyler, 1989). Because of the unequal number of items in each category, the summation of items

could not be used. Therefore, I chose to utilize the mean score instead. This may have presented some problems, as I was not able to directly compare how many items were endorsed within each category.

Another problem with the Help-Seeking Questionnaire pertained to the content of items within the four categories. The content of the People in General and Negative Emotional Expression categories were significantly correlated with each other, $r = .480, p = .000$. For example, items such as "I like to talk to other people when I am troubled or down." (People in General) and "When I am upset, I let people know about it." (Negative Emotional Expression) appear to be asking very similar questions. In addition, the Negative Emotional Expression category was also somewhat confusing to interpret, as it was defined as "the respondent's ability to help themselves by expressing emotion" (Cook & Tyler, 1989, p.22). Furthermore, in my revision of this questionnaire, I inadvertently neglected to include an item specifically pertaining to willingness to discuss problems with a spouse/partner. This would have been an important question to include in the People in General category of this questionnaire.

There were also some problems with the Financial Stress Survey. This survey was designed for purposes of this study, based on the measure of financial stress utilized by Hoyt et al. (1995). I modified the measure utilized by Hoyt et al. to allow for continuous data rather than categorical data. Because this was a questionnaire I created for this study, there were no validity and reliability estimates previously established for this measure. It is questionable, therefore, whether this measure was a valid instrument for quantifying financial stress. As discussed previously, internal consistency reliability for this sample of farm operators was .92 (alpha coefficient).

Implications

Depression in the farm population is a serious problem. Based on the results of this study, farmers in North Dakota are likely experiencing an alarmingly high level of depression. In addition, the results of this study, consistent with previous research on the psychological impact of the 1980s farm crisis, indicate a strong relationship between economic stress and the incidence of depression in this population. Despite the high level of depression found in this study, farm operators are often reluctant to seek mental health services. This likely results in untreated or unrecognized clinical depression. Given the seriousness of this situation and the relative lack of attention to this population, there are many opportunities for the field of counseling psychology. The implications for counseling psychologists will be discussed, focusing on implications for clinical application/practice and for further research.

Practical Implications

The extremely high level and rate of depression found in this study is of great concern. Based on the results, a high rate of farm operators in North Dakota may be experiencing depression. The rate of depression was twice the rate found in similar populations. In addition, the level of depression reported was much higher than that found in the general population.

The positive relationship among financial stress and depression found in this study is important to aid in understanding the high depression rate. The farm operators reported a moderate level of financial stress, although the majority expressed some hopelessness about the financial future of their farms and believe this current crisis is more severe than the 1980s farm crisis. Given the financial difficulties faced by many

farmers, the threat of poverty and unemployment is very real. This threat likely produces severe psychological consequences, which can lead to depressive symptoms. Farmers may feel tremendous stress due to their financial problems, as well as guilt about failing to utilize a resource that has likely been in the family for generations. The identity of many farmers may consequently be threatened, as they may be faced with the possibility of losing their identity along with their farms. It is not surprising, therefore, that farmers experience significant psychological difficulties, such as depression, as a result of economic stress.

Because my sample appears to be of higher socioeconomic status than the general population, the true rate of depression in the population of farm operators is questionable and worrisome. If farm operators in this sample were of higher socioeconomic status than those in the population, which may explain why a moderate level of financial stress was reported, would the true level of depression in the population be even higher? Research has consistently found a relationship between financial stress and depression. Those farmers of lower socioeconomic status, therefore, would likely be experiencing more financial stress than the farmers in this sample. As a result, they may likely be experiencing more depressive symptoms. In other words, the true rate of depression in the population may be even higher than found in this study, which is of serious concern. More research is needed on the general population of North Dakota farm operators, in order to determine the true rate of depression in this population.

In this study, farm operators expressed a moderate level of openness to seeking help from various resources. Of concern, farm operators in this study were less open to receiving help from mental health professionals than from other informal resources, such

as people in general and other professionals (i.e. credit counselors, accountant, farm credit officer). Since farm operators in this study appear to be of higher socioeconomic status than those in the general population, they may express more openness to seeking help from various resources than the general population. This may be especially true for mental health resources, as they may be more educated about mental health issues and therefore, more willing to seek such services. It is likely, therefore, that farm operators in the general population would be less open to seeking help from mental health resources than found in this sample.

Since farm operators are likely somewhat reluctant to seek help from mental health professionals, depression may be left untreated and/or unrecognized. This could increase the risk of suicide in this population. This is especially worrisome given the high suicide rates found in the farm population through previous research. With the farm economy still struggling and likely to continue declining, it is likely that farmers will continue to experience depression and that the suicide rate will continue to rise.

The underutilization of mental health services by the farm population in general, presents a serious implication for counseling psychology. Because many farm operators may fail to seek services for various psychological problems, these problems often remain untreated or undiagnosed. Counseling psychologists are forced to think of new ways to reach this population. It is apparent that many farm operators will likely not seek traditional outpatient therapy services, as our profession is accustomed to providing. This presents an exciting challenge for our field and causes us to consider: How do we best reach this population who seems to be in need of our services?

One possible solution is to provide outreach programs to these rural areas. Since rural residents are unlikely to *seek out* psychological services, it is important that the psychologist be willing to provide services *to* these rural communities. This may involve the psychologist making house visits and implementing community-wide intervention or prevention programs. An interesting outreach project has been developed through the Wisconsin Office of Rural Health, entitled "Sowing the Seeds of Hope." This intervention program serves farm families in Iowa, Kansas, Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin. Mental health professionals provide outreach depression screening, 24-hour crisis intervention, and support to these farm families. In addition, this program also provides information and referral services. Similarly, the Lutheran Rural Disaster Response program also provides various outreach services to the farm population.

In my opinion, these outreach programs are much needed and provide a way for mental health workers to reach this population. I especially like the idea of community-wide depression screenings. This would enable many rural residents to be screened for depression in a less stigmatized setting than a mental health center. Screenings would also allow for the proper diagnosis and treatment referrals for depressed residents who may not have sought services otherwise, as well as the opportunity to provide education to farmers about mental health issues. In addition, these outreach programs provide needed support and crisis intervention to this population. Perhaps the availability of 24-hour crisis lines would prevent suicide in a number of cases. Emotionally distraught and suicidal residents would have somewhere to turn in a crisis situation. Yet, the crisis line

service would allow for anonymity since clients could speak to a mental health professional via telephone from the privacy of their own homes.

Outreach prevention or intervention programs with an educational focus, such as stress management, assertiveness training, and financial management, may also be beneficial. If they perceive that these programs are educational in nature and not "mental health" services per se, rural residents may be more accepting and more willing to participate in these programs. It would be less like "seeking help" for their problems, but would provide a way for this population to learn some skills to help themselves. Since they value self-sufficiency, it seems important to empower this population. Furthermore, there appears to be the need for educational programs that expand public awareness of existing services and address the fear of stigmatization that may interfere with service utilization.

Another possible intervention strategy is for psychologists to work in primary care settings rather than mental health agencies. This apparently is already the case in many rural settings, as I learned through a recent rural health conference that I attended. Since rural residents are more likely to seek help from a physician than a mental health worker, it seems important to develop a collaborative program with physicians in rural communities. Perhaps the psychologist could have an office in the primary care setting and be called upon when a mental health issue arises. It would be essential, however, that the physician be willing to cooperate and to enlist the help of the psychologist when needed.

Prevention activities also appear to be an important alternative to therapy as usual. Rural practitioners have developed prevention activities as a major component of their

mental health services, as they are able to reach rural areas in an efficacious and cost-effective manner (Kenkel, 1986). Consequently, prevention has become popular in rural communities. Rural residents tend to be optimistic about the efficacy of preventive measures and willing to support such activities. They also are less likely to fear stigmatization, since prevention programs tend to emphasize “health” rather than “sickness” or pathology (Kenkel, 1986).

Prevention activities in the rural farm population could target stress management, health issues, and depression/suicide prevention. Prevention programs addressing depression/suicide seem especially important for this high risk population. An interesting prevention strategy involves the stress-coping-support model. This model focuses on reducing or removing stressors, increasing coping skills, and building social supports. Any level of intervention could be applied, such as individual, small group, community or organizational. A community-wide prevention effort would likely be beneficial, using this model to address the economic stress experienced by rural residents. However, since rural communities differ from each other, it would be important to first assess the needs, the unique stressors, and the most beneficial intervention options for each community. In other words, prevention activities need to be tailored to best fit the needs of each individual rural community (Kenkel, 1986).

It is often essential to enlist the help of professionals in the community, other than those in the mental health field, for these prevention activities. Since rural residents are more receptive to seeking help from informal resources, it seems important to obtain the involvement of teachers, school administrators, pastors, physicians, and community leaders. Teachers, for example, could be asked to implement communication skills

training or peer counseling training in their curriculum (Kenkel, 1986). Furthermore, churches could be asked to offer marital skills training or depression/suicide prevention programs. With the help of many other professionals and community leaders, the prevention effort has a much greater chance of accomplishing its goals and of being positively received by this population.

As indicated in this study, farm operators may be open to seeking help from their accountant or financial/credit officer. Professionals in such positions could be educated regarding depression and its symptoms, as well as the signs of psychological stress. Since farm operators may trust professionals involved with managing their finances, these professionals may be able to encourage reluctant farm operators to seek mental health services. Similarly, agricultural extension workers could also be encouraged to conduct or sponsor seminars for farmers who are attempting to cope with economic hardship.

The need for marital or family therapy may also have implications for counseling psychologists. Since many farm wives are forced to seek outside jobs due to strained family finances, the family system often becomes altered. This is especially true given the tendency for many rural residents to hold traditional gender beliefs. The husband may feel as if he is an inadequate provider if his wife has to seek employment outside the farm. Consequently, the wife may feel uncomfortable with her new role. These changing gender roles, therefore, may cause an increase in conflict within the family. Furthermore, this increased conflict may partially result from the economic stress alone. Because of the potential for more family conflict, there may be a greater need for marital and family counseling services.

Similarly, career counseling may also be in demand for both rural farm and non-farm residents. Given that many farmers, in particular, have been forced to exit farming or to seek outside employment, career transition counseling may be beneficial. They may need assistance identifying other employment options, as well as their skills and interests. These farmers may not have considered other possibilities, as they anticipated that farming would be their career for a lifetime. Likely these farms were in the family for generations and farming was the only considered option. It may be the only life they knew and be strongly tied to their personal identities. By being able to assist these farmers through the often difficult career transition process, counseling psychologists could play a vital role.

In general, it is very important that farmer operators be educated about mental illness and its treatment. Because of a lack of anonymity in rural communities, farm operators may not seek treatment because of a fear of stigmatization. Education about mental illness through various programs may help farm operators become more willing to seek mental health services. Perhaps by learning more about depression, they may feel less stigmatized by others in the community if they seek such services. This education, in other words, could save lives. We need to reach this population before it is too late.

Research

The implications for research are considerable. In general, research on rural issues and the rural population is sorely lacking. When I was conducting this literature review, I was disappointed that so few studies focused on this population. The research that is available tends to be very dated. Much of the rural research was conducted nearly twenty years ago, in response to the farm crisis of the 1980s. Therefore, little is known about the

current plight of the farm population. Given the economic struggles faced by rural communities and the seriousness of the continued farm crisis, it is essential that more research be conducted on this population. I foresee that the levels of depression and the suicide risk will only continue to increase unless the farm economy recovers in the near future. The current farm economic crisis negatively impacts both the farm and non-farm rural communities. I think it is important that research continue to be conducted on both the farm population and the rural population in general.

The majority of the research on the farm crisis has employed quantitative methods. In fact, most of the studies have involved survey or epidemiological research, a type of quantitative descriptive research (Heppner, Kivlighan, & Wampold, 1992). Data were typically collected through mailed self-report questionnaires or telephone interviews. Several studies also included brief personal interviews with the participants. Since the goal of descriptive research is to document the nature or frequency of a particular variable(s), I think this type of research was able to provide an increased understanding of the incidence and nature of depression, in addition to help-seeking behavior, in the rural population. In my opinion, it is important that this type of research continue, especially since there has been so little research in this area.

There are several important areas for research that need to be further explored. First of all, the need remains to further understand the incidence of depression and suicide, as well as the help-seeking tendency, in this population. Based on the results of this study, it appears that depression is a serious problem in the farm population. However, very few researchers have addressed this area. More survey research is needed to better understand the depression rate in this population and perhaps learn ways to reach

this population more effectively. It would be interesting to see whether the rate of depression would be even higher than found in this study. In addition, it would be interesting to compare geographic regions within the state, as well as between states. I wonder whether the same high rate of depression would be found in similar populations residing in other rural geographical areas. In the future, researchers could address the following questions: Is the depression rate higher for those farmer operators residing in a more rural state, such as North Dakota, compared to those in other states? What variables contribute to the high depression rate? Are the farm wives/partners also experiencing high rates of depression?

Secondly, the other psychological effects of economic hardship on the farm operator would be an important area to study. Few researchers have addressed these other potential effects, such as divorce, family conflict, alcoholism, and violence toward others. It would be interesting to continue to research these topics, in order to describe, explain, or explore these phenomena. Furthermore, I think more research is needed on the coping behaviors of farmers and rural residents in general. Although some investigators have addressed this issue, much more research is needed in order to more fully understand the methods of coping employed. Many researchers investigating this area have focused on support systems, with little attention paid to other methods of coping. Perhaps by continuing to conduct survey research on a variety of issues, we will have an even greater understanding of the plight of rural residents in response to economic hardship.

The results of this study strongly support the relationship between economic stress and depression found in other research. The exact pathway of this relationship and moderating factors has yet to be fully understood. More research is needed regarding this

relationship and the moderating factors. It is important for researchers to test various models or conduct path analyses in order to understand the contribution of various factors in the rate of depression. Such analyses could improve our understanding of this relationship and subsequently aid in the prevention of depression in this population. If we are able to understand the factors that impact this relationship, we would likely be able to better understand the etiology of depression, as well as ways to prevent this disorder in a situation with high economic stress.

Although further quantitative research is needed, I also think qualitative research would be useful to employ with this population. It would be interesting to conduct phenomenological research, which would focus on the meaning and experience of economic pressure for the participants. In such studies, in-depth interviews would be conducted in a collaborative manner with each participant. This type of research would provide an understanding as to the essential meaning of the experience. In other words, a description of “what it feels like to be experiencing economic hardship” would be obtained from each participant, providing a clearer picture of their various personal experiences associated with this hardship.

As with all research, researchers have to overcome the obstacle of obtaining participation and cooperation. This may be an even more important consideration with the rural population. Since rural residents are often considered “stoic”, they may be reluctant to participate in any type of research. With qualitative research, in particular, this population may be more skeptical since it would require a greater time-commitment, as well as more personal self-disclosure. They may feel uneasy or be unwilling to discuss their experiences in-depth with a researcher. Nevertheless, with the participant's

cooperation, qualitative research would provide useful information about their experiences as a result of the farm crisis.

In summary, farm operators and the rural population in general appears to be in need of mental health services. The question remains, however, as to the best method of reaching this population. If counseling psychologists are willing to consider innovative ways to educate and treat rural residents, they will be providing a much needed service to this population.

APPENDICES

APPENDIX A
Personal Data Questionnaire

PART 1:

Please complete the following items. All information will be anonymous and confidential.

1. Please check one: I am the _____ farm operator
_____ spouse/partner of the farm operator

2. Gender _____ Female
_____ Male

3. Age _____

4. Educational Level: (check the highest level obtained)
_____ Some high school
_____ High School graduate
_____ Some college
_____ College graduate
_____ Some graduate school
_____ Completed Masters Degree
_____ Higher Professional Degree (e.g. Ph.D., M.D., J.D., etc.)

5. Marital Status:
_____ Single, living alone
_____ Single, living with significant other
_____ Married
_____ Divorced
_____ Separated
_____ Widowed

6. How long have you been farming (# of years): _____

7. What are the primary crops raised on your farm:

If you are living with your spouse/significant other, please continue on to PART 2. If not, you may skip PART 2.

Part 2:

Have you observed any of these changes in your spouse/significant other in the last six months:

1. Increased alcohol use? yes
 no
2. Decreased social contact? yes
 no
3. Decreased attention to daily matters? yes
(Examples: paying bills, housecleaning, hygiene, bookkeeping, etc.) no
4. Has there been increased conflict in the household?
Marital: yes no
Family: yes no
5. An increase in health problems? yes
 no
6. Changes in sleep patterns ? yes
 no
7. Weight gain or loss? yes
 no
8. Changes in mood? yes
 no
9. Lack of interest in pleasurable activities? yes
 no
10. Expresses hopelessness for the future? yes
 no
11. Lack of concentration? yes
 no
12. Increased talk of death or suicide? yes
 no

APPENDIX B
CES-D SCALE

Circle the number for each statement which best describes how often you felt or behaved this way DURING THE PAST WEEK.

	Rarely or None of Time (Less than 1 Day)	Some or a Little of the Time (1-2 Days)	Occasionally or a Moderate Amount of Time (3-4 Days)	Most or All of the the Time (5-7 Days)
1. I was bothered by things that usually don't bother me.....	0	1	2	3
2. I did not feel like eating, my appetite was poor.....	0	1	2	3
3. I felt that I could not shake off the blues even with help from my family or friends....	0	1	2	3
4. I felt that I was just as good as other people....	0	1	2	3
5. I had trouble keeping my mind on what I was doing.....	0	1	2	3
6. I felt depressed.....	0	1	2	3
7. I felt that everything I did was an effort.....	0	1	2	3
8. I felt hopeful about the future.....	0	1	2	3
9. I thought my life had been a failure.....	0	1	2	3
10. I felt fearful.....	0	1	2	3
11. My sleep was restless.....	0	1	2	3
12. I was happy.....	0	1	2	3
13. I talked less than usual.....	0	1	2	3

	Rarely or None of Time (Less than 1 Day)	Some or a Little of the Time (1-2 Days)	Occasionally or a Moderate Amount of Time (3-4 Days)	Most or All of the Time (5-7 Days)
DURING THE PAST WEEK:				
14. I felt lonely.....	0	1	2	3
15. People were unfriendly.....	0	1	2	3
16. I enjoyed life.....	0	1	2	3
17. I had crying spells.....	0	1	2	3
18. I felt sad.....	0	1	2	3
19. I felt that people disliked me.....	0	1	2	3
20. I could not get "going".....	0	1	2	3

APPENDIX C
Financial Stress Survey

1. Please rate how severe you believe the following economic problems are for your household: (Circle the number that best applies.)

Decrease in income: 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____
Not a problem Very severe

Suffering from a financial loss:
1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____
Not a problem Very severe

Difficulty making credit payments:
1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____
Not a problem Very severe

Having to drop insurance coverage:
1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____
Not a problem Very severe

Loan foreclosure:
1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____
Not a problem Very severe

Going deeply into debt:
1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____
Not a problem Very severe

Having to use savings to meet expenses:
1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____
Not a problem Very severe

2. Please rate the severity of your debt/asset ratio, compared to other farmers:
1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____
very good very severe

3. Do you have other household income that is not farm related? _____ yes or _____ no
If yes, what percent of overall household income is derived from other household income: _____

4. Were you farming during the 1980s farm crisis? _____ yes or _____ no
 If yes, please answer the following questions:

To what extent do you think you recovered from it?
 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7
 fully recovered did not recover

4. (continued)

How do you perceive the current farm crisis compared to that of the 1980s?
 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7
 less severe more severe

5. Have you had trouble with overland flooding or other environmental disasters in past four years?

_____ no
 _____ yes; If so, type of disaster? _____
 Please rate the severity of the disaster: (circle the appropriate number)
 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7
 not severe very severe

6. Please list any other significant life stressors that occurred in the past four years (Examples: Serious illness, death in family, divorce, victim of violent crime, etc.) and rate the severity of each by circling the appropriate number:

List:

_____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7
 not severe very severe

_____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7
 not severe very severe

_____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7
 not severe very severe

7. Please rate what you think about the economic future of your farm operation:

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7
 very optimistic very hopeless

APPENDIX D
Help-Seeking Questionnaire

Please read each statement and indicate your best response. Circle either "agree" or "disagree" following each statement.

- | | |
|--|-------------------|
| 1. I would not be willing to take vocational training. | AGREE or DISAGREE |
| 2. I like to talk to other people when I am troubled or down. | AGREE or DISAGREE |
| 3. I would be willing to talk over my problems with a pastor, priest, or rabbi. | AGREE or DISAGREE |
| 4. When I am upset, I let people know about it. | AGREE or DISAGREE |
| 5. If I have a problem, I will solve it by myself. | AGREE or DISAGREE |
| 6. I would be willing to discuss my problems with an accountant or farm credit officer. | AGREE or DISAGREE |
| 7. A counselor or psychotherapist would be a good person for me to share a problem with. | AGREE or DISAGREE |
| 8. I would just as soon get away from people when I am troubled or down. | AGREE or DISAGREE |
| 9. I believe I would like to learn some new job skills. | AGREE or DISAGREE |
| 10. It doesn't bother me to show my feelings in public. | AGREE or DISAGREE |
| 11. I would try family therapy as a way of getting help for my family. | AGREE or DISAGREE |
| 12. I would not share my problems with a clergy person. | AGREE or DISAGREE |
| 13. I would like my husband/wife and I to see a marriage counselor for problems we might have in our marriage. | AGREE or DISAGREE |
| 14. I don't see myself taking any more formal education. | AGREE or DISAGREE |

15. I would not go to see someone for financial counseling. AGREE or DISAGREE
16. I would talk to another person who is in farming about a personal problem that was bothering me. AGREE or DISAGREE
17. If something is troubling me, I would rather keep it to myself. AGREE or DISAGREE
18. I try not to let my feelings show when I'm in public. AGREE or DISAGREE
19. I would not go to see a psychiatrist, psychologist, or social worker with my problems. AGREE or DISAGREE
20. I would not go to see someone trained to help families with their problems. AGREE or DISAGREE
21. I would like to go back to school and continue my education. AGREE or DISAGREE
22. I can't do it all myself. Sometimes I need help. AGREE or DISAGREE
23. My husband/wife and I can solve any problems we have in our marriage without seeking professional help. AGREE or DISAGREE
24. I would call a mental health crisis line, if needed. AGREE or DISAGREE
25. I would read self-help books. AGREE or DISAGREE
26. I would listen to radio call-in shows (i.e. Dr. Laura). AGREE or DISAGREE
27. I would talk to a hairdresser or a bartender about my problems. AGREE or DISAGREE
28. I would not share my problems with family members other than my spouse. AGREE or DISAGREE

(A modified version of the Help-Seeking Behavior Questionnaire developed by Cook & Tyler, 1989. Modified and used with author's permission.)

APPENDIX E
INFORMATION LETTER

March 1, 2001

Dear Farm Operator and Spouse/Significant Other:

As you are aware, many farm operators are personally facing economic difficulty. It is likely that this difficulty is impacting the farmer's life in a variety of ways. In order to fully understand the effects of the farm economy on individual farmers and their spouses/significant others (if applicable), it is important to ask farmers themselves how they are impacted by the current farm crisis.

I am a doctoral student in the Counseling Psychology program at the University of North Dakota. You are invited to participate in my dissertation research regarding the psychological effects of the current farm crisis. Since I was raised on a small family farm in northeastern North Dakota, I have a strong interest in rural issues and desire to understand how the economic situation is impacting individual farmers and their spouse/partners.

Your household is one of approximately 500 farm operators asked to participate in this study. You were selected from a random sample of North Dakota farm operators on the *Prairie Grains Magazine* mailing list. In order that the results truly represent the impact of the farm economy, it is important that each questionnaire be completed and returned. It is also important that both you and your spouse/significant other (if applicable) each complete the enclosed questionnaire packets. The packet will take approximately 20 minutes to complete. It includes questions related to general demographic information, your household economic situation, your feelings/behavior during the past week, and your help seeking preferences.

Your participation is voluntary. Your responses will be confidential and reported as part of group data. The questionnaire has an identification number for mailing purposes only. This is so that we may check your name off of the mailing list when your questionnaire is returned. It also will be used to pair the two household packets when they are returned. Your name will never be placed on the questionnaire itself. The completed questionnaires will be stored in a locked file cabinet and destroyed after three years.

The results of this research will be used in my dissertation paper and may possibly be published in *Prairie Grains Magazine*. Your participation will provide useful information about the psychological impact of the current farm economy. This information may help farmers who are in great distress, as the results of this study may lead to further research and/or the development of intervention or prevention programs. Although the risks are minimal, there may be a minor risk of experiencing some emotional discomfort at

acknowledging personal or work-related problems. You can be assured that all of your responses on the survey will be confidential and anonymous. You may also withdraw from the study at any time by contacting me and using the code number to refer to the survey. In addition, you may contact me for a list of mental health providers in your area, if needed.

To participate, please fill out the enclosed questionnaire packet. Completing the survey and returning it in enclosed stamped, self-addressed envelope will convey your consent to participate in this study. You and your spouse/significant other are asked to return your surveys separately in the enclosed envelopes. We would be most happy to answer any questions you may have. Feel free to contact the researcher, Wanda McSparron, at (701) 775-8442 or email: wanda_mensparron@und.nodak.edu. You may also contact the faculty advisor, Sue C. Jacobs, Ph.D., at (701) 777-3744 or email: sue_jacobs@und.nodak.edu. Thank you for your participation and best wishes for the upcoming farm season.

Sincerely,

Wanda J. McSparron, MA
Counseling Psychology Ph.D. Candidate
University of North Dakota

REFERENCES

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders*. (4th Ed.). Washington, DC: Author.
- Angermeyer, M. C., & Matschinger, H. (1997). Social distance towards the mentally ill: Results of representative surveys in the Federal Republic of Germany. *Psychological Medicine, 27*, 131-141.
- Center for Epidemiologic Studies, National Institute of Mental Health. (1971). *Center for Epidemiological Studies Depression Scale (CES-D)*. Rockville, MD: National Institute of Mental Health.
- Chapman, A. L. (2001). Mental health service provision in rural communities: A challenging opportunity for growth in our profession. *The Clinical Psychologist, 54*, 3-8.
- Cook, J. R., & Tyler, J. D. (1989). Help-seeking attitudes of North Dakota farm couples. *Journal of Rural Community Psychology, 10*, 17-28.
- Dohrenwend, B. P. (1975). Sociocultural and social psychological factors in the genesis of mental disorders. *Journal of Health and Social Behavior, 16*, 365-392.
- Fehr, A., & Tyler, J. D. (1987). Public awareness of mental health services in rural communities. *Journal of Rural Community Psychology, 8*, 36-40.

- Fischer, E. H., & Cohen, S. L. (1972). Demographic correlates of attitude toward seeking professional psychological help. *Journal of Consulting and Clinical Psychology*, 39(1), 70-74.
- Fischer, E. H., & Turner, J. L. (1970). Orientations to seeking professional help: Development and research utility of an attitude scale. *Journal of Consulting and Clinical Psychology*, 35(1), 79-90.
- Flaskerud, J. H., & Kviz, F. J. (1982). Resources rural consumers indicate they would use for mental health problems. *Community Mental Health Journal*, 18(2), 107-119.
- Flaskerud, J. H., & Kviz, F. J. (1983). Rural attitudes toward and knowledge of mental illness and treatment resources. *Hospital and Community Psychiatry*, 34, 229-233.
- Gallagher, A. G., & Sheehy, N. P. (1994). Suicide in rural communities. *Journal of Community and Applied Social Psychology*, 4, 145-155.
- Greenberg, P. E., Stiglin, L. E., Finkelstein, S. N., & Berndt, E. R. (1993). Depression: a neglected major illness. *Journal of Clinical Psychiatry*, 54, 419-423.
- Gunderson, P., Donner, D., Nashold, R., Salkowicz, L., Sperry, S., & Wittman, B. (1993). The epidemiology of suicide among farm residents or workers in five north-central states. *American Journal of Preventive Medicine*, 9, 26-32.
- Hargrove, D.S. (1986). Ethical issues in rural mental health practice. *Professional Psychology: Research and Practice*, 17, 20-23.
- Harl, N. E. (1986). The people and the institutions: An economic assessment. In Farm Foundation (Ed.), *Increasing understanding of public problems and policies - 1986* (pp. 71-89). Oak Brook, IL: Farm Foundation.

- Heffernan, W. D. & Heffernan, J. B. (1986). The impact of the farm crisis on families and communities. *The Rural Sociologist*, 6, 160-170.
- Holmes, D. (1997). *Abnormal Psychology*. (3rd. Ed.). Harper-Collins Press .
- Hoyt, D. R., O'Donnell, D., & Mack, K. Y. (1995). Psychological distress and size of place: The epidemiology of rural economic stress. *Rural Sociology*, 60(4), 707-720.
- Husaini, B. J., Neff, J., Harrington, M., & Stone, R. (1980). Depression in rural communities: validating the CES-D Scale. *Journal of Community Psychology*, 8, 20-27.
- Inskip, H. M., Harris, C., & Barraclough, B. (1998). Lifetime risk of suicide for affective disorder, alcoholism and schizophrenia. *British Journal of Psychiatry*, 172, 35-37.
- Jeffrey, M. J., & Reeve, R. E. (1978). Community mental health services in rural areas: Some practical issues. *Community Mental Health Journal*, 14, 54-62.
- Keating, N. C. (1987). Reducing stress of farm men and women. *Family Relations*, 36, 358-363.
- Kelleher, K. J., Taylor, J. L., & Rickert, V. I. (1992). Mental health services for rural children and adolescents. *Clinical Psychology Review*, 12, 841-852.
- Leon, A. C., Klerman, G. L., & Wickramaratne, P. (1993). Continuing female predominance in depressive illness. *American Journal of Public Health*, 83(5), 754-756.

- Linn, J. G., & Husaini, B. A. (1987). Determinants of psychological depression and coping behaviors of Tennessee farm residents. *Journal of Community Psychology, 15*, 503-512.
- Lorenz, F. O., Conger, R. D., & Montague, R. (1994). Doing worse and feeling worse: Psychological consequences of economic hardship. In R. D. Conger & G. H. Elder (Eds.), *Families in troubled times: Adapting to change in rural America* (pp.167-186). Hawthorne, NY: Aldine De Gruyter.
- Miller, M. K., & Luloff, A. E. (1981). Who is rural? A typological approach to the examination of rurality. *Rural Sociology, 46*, 608-625.
- Nashold, R. D. (1986). *Changing farm and nonfarm suicide rates: Wisconsin, 1961-1985*. Paper presented at the American Public Health Association, Las Vegas, Nevada, 1986.
- National Mental Health Association. (1996). *Stigma: Awareness and understanding of mental illness*. Alexandria, VA: Author.
- National Oceanic and Atmospheric Administration (2001). *National Climatic Data Center: Climate at a Glance* (On-line). Available: Internet: www.ncdc.noaa.gov/
- Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: Evidence and theory. *The Psychological Bulletin, 101*, 259-282.
- North Dakota Wheat Commission (1999). *Wheat information: Markets and Statistics*.
- 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*, 598-619.

- Pollack, W. S. (1998). Mourning, melancholia, and masculinity: Recognizing and treating depression in men. In Pollack, W. S. & Levant, R. F. (Eds.) *New Psychotherapy for Men*, John Wiley and Sons.
- Prairie Grains Magazine. (1999) The Prairie Grains Magazine Readership Study. Minnesota Wheat Growers Association.
- Prairie Grains Magazine. (2001) The Prairie Grains Magazine Readership Study. Minnesota Wheat Growers Association.
- Ragland, J. D., & Berman, A. (1990-91). Farm crisis and suicide: Dying on the vine? *Omega*, 22(3), 173-185.
- Real, T. (1997). *I Don't Want to Talk About It: Overcoming The Secret Legacy of Male Depression*, New York, NY: Fireside.
- Rehm, L. P., & Tyndall, C. I. (1993). Mood disorders. In Sutker, P. B. & Adams. H. E. (Eds.) *Comprehensive Handbook of Psychopathology (2nd Ed.)*, New York, NY: Plenum Press.
- Rokke, P. D., & Klenow, D. J. (1998). Prevalence of depressive symptoms among rural elderly: Examining the need for mental health services. *Psychotherapy*, 35(4), 545-558.
- Rosenblatt, P. C., & Anderson, R. M. (1981). Interaction in farm families: Tension and stress. In R. T. Coward & M. W. Smith (Eds.), *The family in rural society* (pp. 147-166). Boulder, CO: Westview.
- Rosenblatt, P. C., & Keller, L. O. (1983). Economic vulnerability and economic stress in farm couples. *Family Relations*, 32, 567-573.

- Schulman, M. D., & Armstrong, P. S. (1989). The farm crisis: An analysis of social psychological distress among North Carolina farm operators. *American Journal of Community Psychology, 17*, 423-441.
- Schulman, M. D., & Armstrong, P. S. (1990). Perceived stress, social support and survival: North Carolina farm operators and the farm crisis. *Journal of Sociology and Social Welfare, 17*, 3-22.
- Schurman, R. A., Kramer, P. D., & Mitchell, J. B. (1985). The hidden mental health network. *Archives of General Psychiatry, 42*, 89-94.
- Shapiro, S., Skinner, E. A., Kessler, L. G., Von Korff, M., German, P. S., Tishler, G. L., Leaf, P. J., Benhan, L., Cottlier, L., & Regier, D. A. (1984). Utilization of health and mental health services. *Archives of General Psychiatry, 41*, 971-982.
- Stallones, L. (1990). Suicide mortality among Kentucky farmers. *Suicide and Life-Threatening Behavior, 20*(2), 156-163.
- Stofferahn, C. (1999). *North Dakota rural life poll*. Unpublished manuscript, North Dakota State University at Fargo.
- Thurston-Hicks, A., Paine, S., & Hollifield, M. (1998). Functional impairment associated with psychological distress and medical severity in rural primary care patients. *Psychiatric Services, 49*(7), 951-955.
- Trute, B. (1989). Social rejection of the mentally ill: A replication study of public attitude. *Social Psychiatry and Psychiatric Epidemiology, 24*, 69-76.
- U.S. Department of Agriculture (1997). *1997 Census of Agriculture, Volume 1 Geographic Area Series*. Washington, DC: U.S. Government Printing Office.

- U.S. Department of Agriculture (1999). *Farm Business Economic Report*. Washington, DC: U.S. Government Printing Office.
- U.S. Department of Agriculture (2001). *North Dakota Agricultural Statistic Service Annual Bulletin*. Washington, DC: U.S. Government Printing Office.
- Van Schaik, E. (1988). The social context of "nerves" in eastern Kentucky. In S.E. Keefe (Ed.), *Appalachian Mental Health*, 81-100. Lexington: University of Kentucky Press.
- Wagenfield, M. O. (2001). A snapshot of rural and frontier America. In B. H. Stamm (Ed.), *Behavioral healthcare in rural and frontier areas: An interdisciplinary handbook*. Washington, D.C.: APA Books.
- Walker, J. L. & Walker, L. J. S. (1988). Self-reported stress symptoms in farmers. *Journal of Clinical Psychology*, 44, 10-16.
- Wallace, J., O'Hara, M. W. (1992). Increases in depressive symptomatology in the rural elderly: Results from a cross-sectional and longitudinal study. *Journal of Abnormal Psychology*, 101, 398-404.
- Wolff, G., Pathare, S., Craig, T., & Leff, J. (1996). Community attitudes to mental illness. *British Journal of Psychiatry*, 168, 183-190.