

## Exploring Depression in Frontier Communities

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### ABSTRACT

***Purpose:*** Frontier communities are exposed to unique communal norms which influence depression. The objectives of this study were to explore the experience of depression from the perspective of people living in Midwestern frontier counties. ***Methods:*** To elucidate how factors in frontier communities influence depression a mixed model of research methods was used: three focus groups (n=45) in two communities, a cross sectional community survey (n=59) and a cross sectional questionnaire from which we conducted a retrospective chart review and tabulated depression screening information and correlates of depressive symptoms from PHQ-9 data (n=67) in a primary care clinic. ***Qualitative analysis of transcribed audiotapes identified four pertinent themes: the double-edge sword of independence, minimal provider response, the reality of rural resources, and gender differences in depression.***

***Results:*** Correlation analysis and analysis of variance (ANOVA) of the PHQ-9 questionnaires revealed three factors impacted depression: the number of medications taken, number of co-morbid illnesses and marital status. The community survey indicated: help for depression was sought from primary care providers, hospitalization was not needed however depression could not be overcome without help, there are few community resources, the majority of respondents have suffered from depression or have a friend or family member who has. ***Conclusions:*** Depressed persons in frontier communities face significant challenges that must be addressed. A model of improving access to resources in the health-care system and addressing community/social factors might be helpful for developing effective depression interventions in frontier communities.

### INTRODUCTION

Some studies have concluded that urban and rural areas have similar rates of mental health problems (Probst, 2006), however mental illness is less likely to be treated in rural America (Olsson, 2000) and when it is, outcomes are poorer (Mohr, 2006). The poor outcomes for depression are especially noted when patients are treated with “usual care” versus “enhanced care” (VanVoorhees,2003; Dickinson,2005; Asarnow,2005; Rost,2004; Keeley,2004;

Dietrich,2004; Bechman,2005). A major difference between urban and rural mental health care is the lack of availability of specialty providers. Fewer than 10% of U.S. counties with populations of less than 2,500 have a psychiatrist and fewer than 20% have a licensed social worker (Ruralfacts, 2002). The primary care provider (PCP) is in the role of treating most of the depression in rural areas. Challenges in the treatment of depression by the PCP can be attributed to many factors such as time-limited visits, knowledge and skills on the part of the provider, patients' unwillingness or inability to address issues of depression and limitations of insurance coverage. This study explores the experience of depression from the perspective of people living in Midwestern frontier counties. Through this, we attempt to validate the literature regarding the role of the primary care provider and the treatment of mental illness in the patient population in Frontier Counties.

### **Review of the Literature**

Living in rural America today equates with risk. Vulnerability to weather, such as draught, blizzards, the variability of market prices for agricultural and livestock commodities, distant medical services and the high rate of medically uninsured are examples of hazards faced by individuals living in rural communities (Frontier Education Center, 2003). Frontier communities are a special subset of rural America. Using a matrix developed by the Frontier Education Center (2003) frontier communities are typically identified as those communities in which the population density is substantially less than 20 persons per square mile, situated more than 60 miles from the closest "market" for services where travel time to those services is greater than 60 minutes. Today, frontier people live in poverty in greater numbers than those in rural and urban parts of the country. In fact, the poorest counties in the United States are all frontier.

More than two-thirds of the 556 counties identified by the U.S. Department of Agriculture as agriculture-dependent are located in the frontier. Jobs in agriculture are traditionally low paying jobs (Frontier Education Center, 2003). Poverty and lack of access to health care place burdens on rural communities and are associated with an increased risk for emotional, behavioral, and substance abuse disorders (Conger, 1997). Social stress, another variable contributing to poor health is chronic for those in the agricultural business and has a long-term toll (Bachman, 2005; National Rural Health Association). People who live in frontier areas travel longer distances for health care, and have access to fewer health-care providers, particularly fewer specialists and mental health-care providers (Eberhardt, et al., 2001; WHO, 2001). Chronic diseases such as alcohol use, concurrent use of smokeless tobacco, physical inactivity, obesity, and diseases of the lung and heart are also a growing concern (CDC, 1993; Eberhardt, et al, 2001; Frontier Education Center, 2003).

Road conditions, lack of transportation and distance to services isolates those with mental health needs. Additionally, social stigma associated with mental health problems further isolates people. Anonymity is not a luxury in rural life and being labeled as "depressed" or "mentally ill" causes people to refrain from seeking help. This isolation has both physical and social consequences. Left untreated or inappropriately treated, mental health problems such as depression are potentially fatal. It is estimated that one in six persons with severe, untreated depression will die by suicide (National Institute of Mental Health). Consequently, those who have behavioral

health problems and need to be treated regularly may need to move closer to services in order to access mental health care.

Although many adults are susceptible to depression, frontier women are at particular risk for depression because in general they are the primary care takers of the family, young and old. They also serve as community caretakers, assisting with a death, visiting the sick, assisting at the schools. Frontier communities have proportionately larger populations of the elderly and children than urban areas (Frontier Education Center, 2003) and with fewer resources for assistance such as day care, respite care or elder care. Frontier women who work outside the home often face a second shift when they arrive home to family and farm chores. The available paid employment in rural areas is often labor intensive, favoring male over female workers. These women also have higher rates of alcohol abuse and report heavier drinking (Foxhall, 2000).

Women are more likely to have depressive episodes than men, and girls more than boys of the same age (Frontier Education Center, 2003; National Institute of Mental Health). The incidence of depression in women and girls is higher in urban as well as rural areas; however those in frontier rural communities have higher rate of depression than their urban or rural counterparts (Frontier Education Center, 2003A). Major depression is reported to be as high 40% in rural women in contrast to 13-20% in non-rural women. Rural women also receive less care than non-rural women and are less likely to be diagnosed by rural practitioners (American Psychological Association, 1999; Frontier Education Center, 2003).

The higher proportion of elderly women in the rural and frontier areas presents added challenges for communities. Elders are less likely to report depressive symptoms when visiting the physician. They present with complex issues that often disguise depression or is a secondary condition associated with chronic illness and disability. As their disabilities become more pronounced they become more isolated and their community connections and support decline. This all leads to the elders in these communities being at higher risk (Ruralfacts, 2002).

We were particularly interested in answering three broad research questions. First, what types of depressive symptoms were being reported by patients in this community and what is the relationship between depressive symptoms and other personal factors (i.e. age, number of other illnesses, number of medications, co-morbidity, gender, and marital status)? Second, what was the knowledge level about depression in general? And third, what were community members' attitudes and beliefs about depression?

Using a variety of research methodologies, a patient questionnaire for depression and retrospective chart review, a cross sectional community survey, and focus groups, we provide a picture of depression found in frontier counties.

## **METHODS**

Permission to conduct the study was obtained from the Institutional Review Board of the University of Kansas Medical Center. All participants in this study were English speaking and 18 years or older. Data collection for this study began in the fall of 2005 and ended in the summer

of 2006. All participants were recruited during working hours by a trained social worker or the receptionist at the health center, both of whom had completed training in the Ethical Conduct of Research.

To address our first research question, a retrospective chart review was conducted with patients receiving care in a primary care clinic in a frontier community in the Midwest. All patients of the clinic complete the PHQ-9 depression measure as part of the intake procedure, so in addition to examining other factors (i.e. chronic illnesses, medications, and demographics) revealed each patient's chart, we also assess each patient's score on the PHQ-9. All data were placed in a secure location and no identifying information was linked to the data when analysis began. Additionally, results of the PHQ-9 were reported to the primary care physician as outlined in the study's consent form.

To address our second research question, community citizens were solicited at senior centers, grocery stores, a drug store, and on the street and asked to complete a 16-item survey assessing knowledge about depression. Fifty-nine community residents (13% of population) completed the survey.

To address research question number three, community members were recruited for focus groups by referral and advertisements at three locations: the local school, an assisted care facility, and the health care facility. Participants signed a consent form and were informed of the research protocol before each focus group began. All the groups were facilitated by the principal investigator.

### **Instrumentation and Analysis**

The Patient Health Questionnaire-9 (PHQ-9) was used to assess depressive symptoms. The PHQ-9 is a brief self-report diagnostic and severity measurement instrument for depression. Many studies support its validity and reliability to detect changes of depression through time. (Lowe, 2004; Kroenke, 2001) Using SPSS 15.0, correlation analyses were conducted to analyze the PHQ-9 data. Analysis of variance (ANOVA) further explored the relationship between a patient's PHQ-9 scores and five other factors retrieved from the retrospective chart review: age, number of other illnesses, number of medications, co-morbidity, gender, and marital status. A 16-item survey was used to assess knowledge and attitudes about depression. The survey was adapted from a measure developed by the Mid-America Coalition on Health Care. The Coalition developed the measure as part of their Community Initiative on Depression, which began collecting data in 2000. Over the course of five years, the Coalition collected and analyzed data from 15 metropolitan communities, representing 140,000 community members. SPSS 15.0 was used to report general levels of knowledge on the 16 scale items.

Three focus groups were conducted to assess community members' attitudes and beliefs about depression. Each focus group included 15 participants, the majority of whom were women. Each focus group was audio taped and transcribed. Using an interpretive process that includes identifying meaningful units in the data, coding those units into categories and creating working hypotheses about the relationships among the categories (Coffey, 1996) the focus group data were analyzed.

## RESULTS

### Depressive Symptoms

Of the 55 patients who agreed to complete the PHQ-9 and participate in the retrospective chart review, 17 were male and 38 were female; their ages ranged from 18 to 82 ( $M = 46.33$ ;  $SD = 17.59$ ). Twenty-nine participants (53%) reported that they were married, 20 participants (36%) reported that they were single (never married), 5 participants (9%) reported that they were divorced or separated, and one individual (2%) reported that he/she was widowed. Individual scores on the PHQ-9 measure ranged from zero (indicating no depressive symptoms) to 25 (severe depression) ( $M = 9.01$ ;  $SD = 6.08$ ). In this sample, 15 individuals (29%) reported no depressive symptoms. Fifteen individuals (29%) reported mild depressive symptoms, 11 (20%) reported moderate depressive symptoms, 7 (13%) reported moderately severe depressive symptoms, and 4 (7%) reported severe depressive symptoms. The retrospective chart review revealed that the number of medications being taken by a patient ranged from zero to 14 ( $M = 3.58$ ;  $SD = 3.87$ ); the number of co-morbid disease reported ranged from zero to 4 ( $M = 1.40$ ;  $SD = 1.24$ ); the number of symptoms an individual reported ranged from zero to 9 ( $M = 4.97$ ;  $SD = 2.45$ ), and the number of illnesses an individual had been previously treated for ranged from zero to 4 ( $M = .87$ ;  $SD = 1.02$ ). Correlation analysis revealed a number of statistically significant relationships between six variables (see Table 1).

**Table 1. Correlations and Descriptive Statistics for PHQ-9 and Other Factors**

	1	2	3	4	5	6
PHQ-9 Score	--					
Age	.03	--				
Previous illnesses	.04	.16	--			
Number of medications	.23	.29*	.20	--		
Number of symptoms	.78**	.14	.00	.32*	--	
Co-morbidity	.28*	.50**	.23	.36**	.24	--
Mean	9.01	46.33	.87	3.58	4.97	1.40
SD	6.08	17.59	1.02	3.87	2.45	1.24

Note: \* $p < .05$ ; \*\* $p < .01$ .

PHQ-9 scores had a strong positive relationship with the number of symptoms reported and small positive relationship with the number of co-morbid illness reported. The age of an individual had a small positive relationship with the number of medications reported and a strong positive relationship with co-morbid illness. The number of medications an individual reported taking had moderate positive relationships with both the number of symptoms they reported as well as the number of co-morbid illnesses reported.

Analysis of variance (ANOVA) was used to explore whether marital status and gender influenced these same patient health outcomes. There were no statistically significant differences between groups on PHQ scores, the number of illnesses reported, the number of medications being taken, the number of symptoms reported, or the number of co-morbid illnesses reported.

### **Knowledge About Depression**

Of the 57 individuals who completed the questionnaire about depression, the majority had either suffered from depression themselves (67%) and/or had close friends or immediate family members who had suffered from depression (88%). The majority (70%) also reported that they could explain the difference between sadness and depression to another person. Ninety-one percent of the respondents believed that people with depression did not need to be hospitalized, however if one has depression the majority of respondents (93%) believe that they cannot simply “get over it” but can be helped successfully (86%).

Eighty-eight percent of the respondents indicated that a depressed mood is normal from time to time. In fact, the majority of respondents (61%) believe that at least 50% of the population would suffer from depression at some time in their life. Overall, the respondents indicated that it would not bother them to work along side someone being treated for depression (88%) and they did not believe that an individual with depression is more likely to become violent (93%). They were split, however, on the notion that “more than half of people with depression think about committing suicide.” Fifty-eight percent indicated this statement was false, while 42% indicated this statement was true.

When it came to how they would respond to their own depression, the majority reported that they would seek help from their primary care provider and that counseling was their preferred method of treatment (see Figure 1). When it came to understanding what community resources were available to them, however, 61% of the respondents reported that when it comes to mental health, their community offers too few resources and 37% reported that they did not know how to use the mental health resources that are available.

### **Attitudes and Beliefs About Depression**

Four major themes emerged from the focus groups: 1) The double- edge sword of independence; 2) minimal provider response; 3) the reality of limited rural resources; and 4) gender differences in depression. The focus groups revealed the language people use to speak about depression varies with generations, but there is a common agreement that no one uses the word “depression or depressed.” Euphemisms for depression include; down, sad, bummed out, stressed, blue. Themes are outlined below, with representative quotes provided to show contextual salience.

#### **The Double-Edge Sword of Independence**

The stigma associated with being depressed reinforces the idea of managing depression on one’s own. Participants described the stigma of seeking help extending not just to the community (neighbors) but the primary care provider (PCP) as well. There were statements in the focus groups that indicated that the PCP would need to go to great effort to discover the “sad” feelings. Several participants felt like “If I were depressed, I’d try to keep it to myself and not talk to anybody.” In general, participants felt that depression was something that they needed to manage themselves. Many saw treatment options as “being happy with yourself” or “talking to God”. Others expressed statements like, “When you say you need help that’s a sign of

weakness and this is a rural community. People don't want that. They want to be strong." Other participants expressed the stigma toward depression as recognition that something dire was wrong and they needed to hide the condition. One woman stated that "When you hear 'depressed' you think, oh gosh something's wrong with me, why can't I just deal with this by myself." Finally, some expressed the recognition that the embarrassment or denial of feeling depressed was so strong they did not even name it until they felt better; "I feel like I didn't know how bad I felt about things until I felt better, then I was like WOW, I was not happy at all."

### **Minimal Provider Response**

Most participants believed if they sought help for depression they would go to their PCP; however many of these individuals felt the provider did not spend the time it would take to adequately treat the problem. Many individuals expressed dissatisfaction with treatment. One participant stated: "I think if people actually feel like someone's [i.e., the provider] asking how they really are, they might open up and say, 'well now that you mention it, doc, I'm not feeling so great.'" Participant for the most part believed that the PCP treat depression with medications only. One woman stated, "I've been on antidepressants several times and they've (PCP) never asked me any questions about why I'm depressed.....they never referred me, they never even asked me about why I'm depressed." A participant from another group stated, "I just think the doctors have a stigma about that.....it's very easy [for them] to write down that people need an antidepressant but they don't talk to them about it." Another woman stated, "I have been to several appointments, they'll write up Zoloft 10 mg or whatever, but didn't say anything about why I was depressed."

### **The Reality of Rural Resources**

There were varied opinions about the use and prevalence of resources. Some participants did not seem to know about any resources outside of the immediate family or friends, others recognized that there were specialty resources some distance away. In regards to limitations to "outside" resources, participants believed distance, impersonalization and lack of "right fit" were all barriers. One participant expressed, "there's just no personality about it, no....personalization or whatever". From another group, a person stated, "A community mental health center person used to come to the school once a week. It was very helpful." Also in this focus group it was stated, "There's only one person at the MH center for teens; if that teen doesn't like the counselor, there's no other option." In answer to questions regard immediate resources in town, some participants knew there had been supports groups such as AA but were not aware if any group still in existence. One participant stated, "...you could probably see your minister or counselor in the church, but I don't know of any support groups". In another group a women questions the abilities of untrained helpers. She stated, "You need to get connected with somebody who specializes in counseling, someone who would listen to you as long as necessary, but it's important to get someone who is trained."

### **Gender Differences in Depression**

The perception of who is depressed in the community supports the literature regarding gender differences. Women were perceived as more depressed then men and girls more then boys.

Most participants believed women were more apt to seek help, talk about their feelings and recognize depression if they had it. One woman stated, "We see it more in women...we are more open about our feelings." It was acknowledged in the groups that often women have more stress in their lives because of expectations for home/community/child care in addition to working outside the home. They made comments such as "Women have to work full time and still take care of the home and the family and there's a lot of stress with that." Teen girls were a concern in all the groups as being of special risk for depression. One participant expressed, "I think I see a lot of girls who are depressed and they just don't want to admit it."

## **DISCUSSION**

Our study confirmed that people who have depression in frontier communities have many of the same obstacles for identification and treatment as reported in previous studies; the underutilization of and limited resources in frontier areas, the stigma associated with depression, an attitude of strong self reliance, the inadequacy of the "usual care" model of treating depression and women and girls at higher risk. (Dietrich, 2003; Cooper; Bachman, 2005; National Institute of Mental Health) This study also confirmed the high prevalence of depression reported in other studies with self reports of 67% experiencing depression and 87% reporting a close friend or relative suffering or have suffered from depression (Frontier Education Center, 2003).

The role of the primary care practitioners as the mental health provider is common in frontier areas. (Unutzer, 2002) Primary care is the place people go for their health care needs. This was confirmed in both the survey and the focus groups. The experience regarding treatment for depression by the PCP, as expressed in the focus groups, was mainly limited to medications, with little exploration of the condition or referral to other mental health resources. The quantitative outcomes support the qualitative data that more medications are not the answer to the problem of depression in this community. With the limited time constraints, the intense stigma against depression and the disguise of depression as a physical complaint means that; the role of the PCP looms larger in these communities. Under-diagnosis and under-treatment of depression is understandable. The "usual care" model, as experienced by many in rural areas, can be supplemented by an "enhanced care" model that has shown, by many, to be successful at increasing daily emotional and physical functioning, increasing remission rates and productivity at work for those suffering from depression. (Rost, 2002; Keeley, 2004; Van Voorhees, 2003). Enhanced care, as described by the literature, is the integration of primary care and mental health services. Sources of this mental health care are as diverse as the areas from which they originate. Services such as; telephone follow up by trained clinic staff, referrals to 'in house' mental health professionals, referrals to distant mental health clinics, services in nontraditional settings like churches by trained mental health advisers, have served to successfully enhance the care in primary care offices. (Bachman, 2005; Horowitz, 2006; Boydell, 2006).

The lack of resources and the associated stigma of seeking help was an issue expressed in the focus groups. In addition it was noted that if one was able to seek help from a mental health professional and the counselor was not compatible with the client there were no other options, therefore the importance of choosing a provider based on the concept of a therapeutic team was not available much of the time. There was a contradiction in the data in regards to seeking help.

In the survey respondents believed they would seek help for depression however in the focus groups people expressed reluctance to seek help. This represents some cognitive dissonance in terms of how one thinks about depression when asked in an objective manner versus the more subjective response in the focus groups.

The “at risk” populations that were identified in the focus groups were women and girls. These populations are also identified in previous studies as being at higher risk for depression. (NIMH; Substance Abuse and Mental Health Services Administration, 2006) The stress of maintaining 2 jobs and caring for the family and community were identified as the primary stressors for women in this study. These stressors are compounded with the unstable economic conditions and isolation that is always present in frontier life. Girls, like wise, are more apt to have depression than boys. Girls in this study were said to experience more depression because they “feel the stress more in the family”. They are also more effected by expectations of achievement for grades, appearance, conduct etc. (Horowitz, 2006).

Other vulnerable populations revealed by the PHQ-9 data are those individuals taking multiple medications, those with several co-morbid diseases and divorced or separated individuals. The role of multiple medications in relationship to depression has been studied in the literature regarding the connection between neurochemistry and mood disorders (NIMH). Also the effect of multiple diseases on mood is recognized as a compounding factor to recovery and health. Research in cell biology and neuroscience is uncovering multiple interactions that may lead to more understanding of depression (NIMH). Like wise other triggering events such as separation and divorce are thought to be factors involved in depression. (NIMH) For the purpose of this study it is important to recognize these at risk populations when designing treatment models, such as social support systems, that can counter negative events and assist in making a person more resilient and hopeful.

The small sample size in all three of the studies of this pilot project and the recruitment from one region are limitations of this study. Nevertheless, with the limited number of studies from frontier areas this pilot will assist in directing future research.

### **Implications**

Prevention programs, factoring in the cultural differences between urban, rural and frontier areas need to be created. Factors such as stressful economic conditions, extreme distances to resources, limited choice in resources and lack of anonymity need to be considered when designing programming. Such programs can build on the unique strengths of the frontier areas such as the strong community support systems, self reliance, sharing resources and the strength of the networks. In frontier communities where professional resources are limited, training school staff, senior center volunteers and community workers is a viable option for support system enhancement. School professionals especially need to understand the nature of stress, ways to recognize it, and how it can be anticipated.

Primary care practices bear the burden of mental health services. These problems overwhelm the expertise and resources of these practices. Creative programs such as telemental health, integration of primary care and mental health professionals in one practice, behavioral health

aides or self management models in the primary care offices have been successful in some settings and could relieve some of the burden (Dietrich,2004; Rost,2002).

### **Conclusions**

This article contributes to the knowledge base about the challenges of treating depression in frontier counties. It further supports the need for resource and treatment enhancements for women and girls as special populations at risk in frontier communities. Primary Care Providers need support and encouragement to enhance the care delivered to their depressed patients. Community support groups and community education needs to be developed to improve the over all mental health in frontier communities. Specialty services need to be recruited to more remote areas to provide needed alternatives for treatment. Public service announcements on local radio and television would inform people of symptoms and treatment options and move toward less stigma associated with depression. Depression in frontier communities is a hidden illness, called by many names and inflicting disability on individuals, families and whole communities. Continuing investment in this depressed population is needed to reduce the substantial toll taken on these remote communities.

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