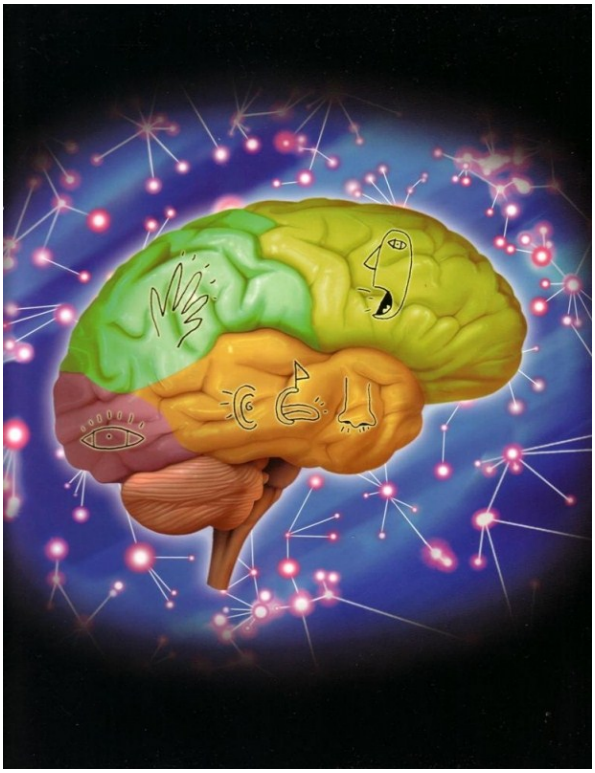


University of North Dakota

Jacqueline S. Gray, Ph.D.
Assistant Professor

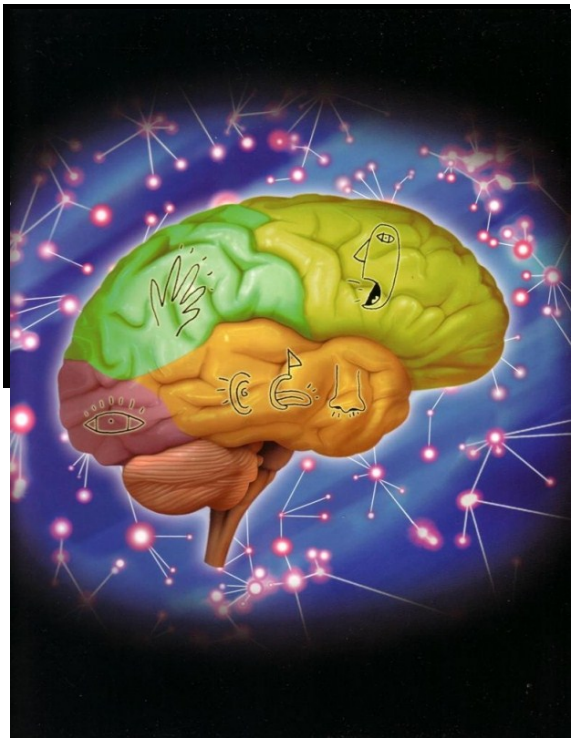
Rural Mental Health Research White Paper for National Institute of Mental Health

September 2011

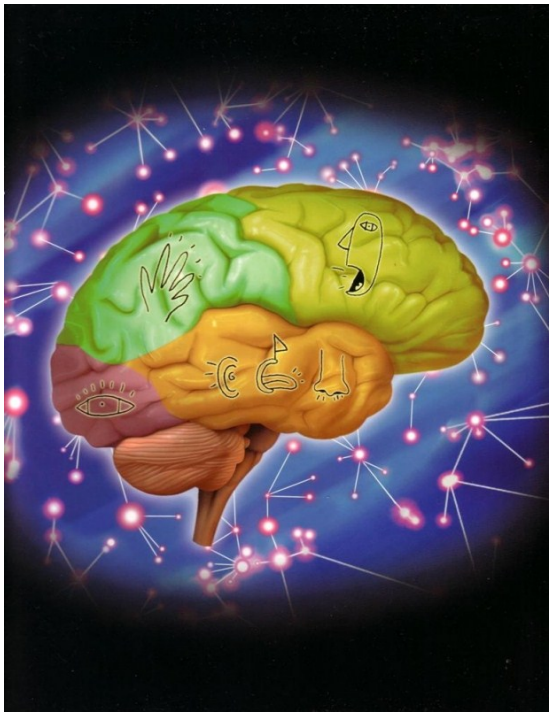
School of Medicine & Health Sciences
Center for Rural Health
501 N. Columbia, Stop 9037 - (701)777-0582/(701)777-6779
Jacqueline.gray@med.und.edu
http://ruralhealth.und.edu/

Suggested Citation:

Gray, J.S. (2011). *Rural mental health research white paper*. Grand Forks, ND: University of North Dakota.



Preface



Preface

The study was conducted under a contract with the Office of Rural Mental Health Research in the National Institute of Mental Health, National Institutes of Health, Department of Health and Human Services. The project and report focus on the nature of rural mental health research, issues in rural mental health, and future areas for research addressing the needs and disparities in rural mental health. These topics are focused on four general areas—Access, Quality, Healthcare Reform, and Disparities.

The project reviewed over 800 articles, reports, books, and dozens of websites. Many are reflected in the references. Additionally, professionals and researchers in the field were contacted regarding their expertise and insight into current issues and research directions.

Dr. Jacqueline S. Gray conducted the major portion of the research and writing of the white paper. Ms. Sierra A. Davis provided valuable assistance with the project. The author wishes to acknowledge with gratitude the guidance of the numerous rural mental health professionals and researchers who provided information, guidance, and advice on this project. The author, alone, is responsible for any error of omission or commission in the paper.

Finally, thank you to Robert Mays, Ph.D., Chief, Office of Rural Mental Health Research, and Pamela Y. Collins, M.D., MPH, Associate Director, Office for Research on Disparities and Global Mental Health Research, National Institute of Mental Health (NIMH) and their colleagues who provided guidance and direction on this project.

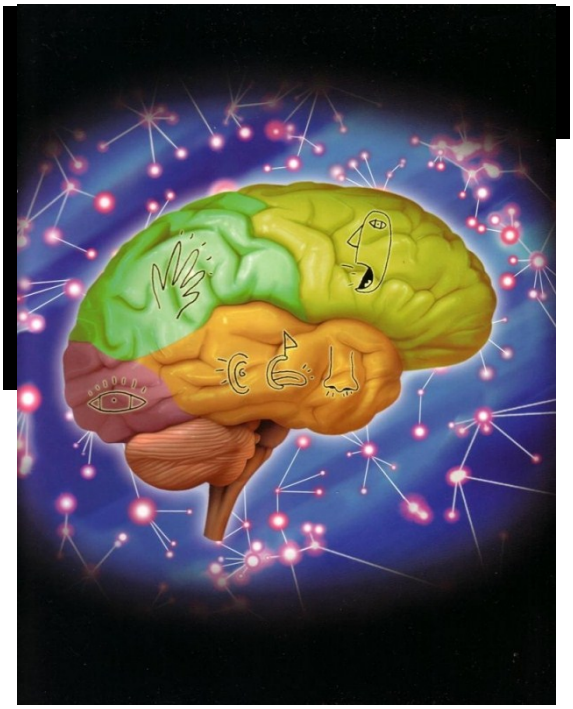


TABLE OF CONTENTS

School of Medicine & Health Sciences
Center for Rural Health
501 N. Columbia, Stop 9037 - (701)777-0582/(701)777-6779
Jacqueline.gray@med.und.edu

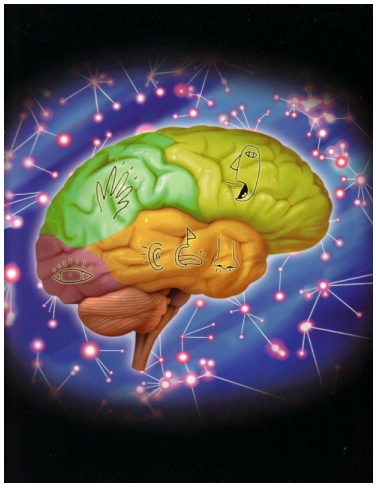
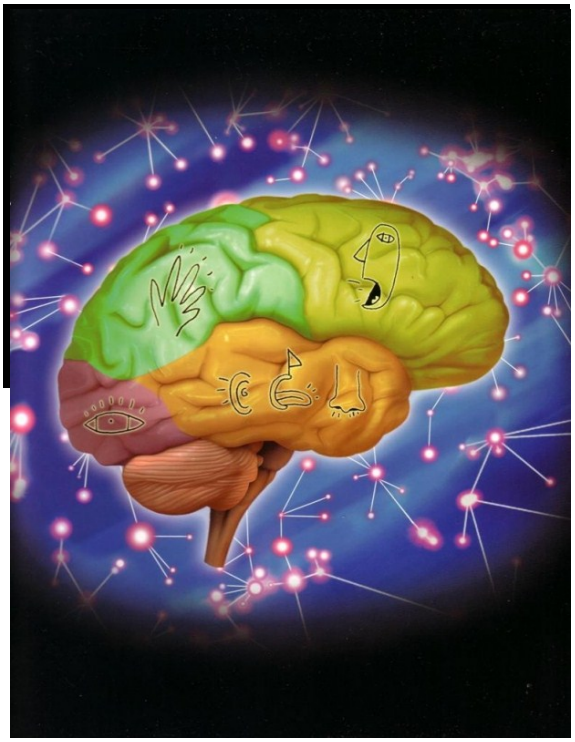
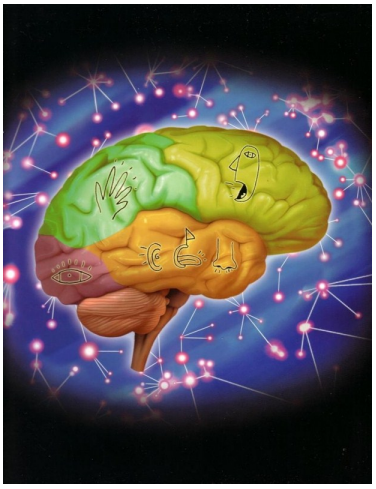


Table of Contents



Introduction



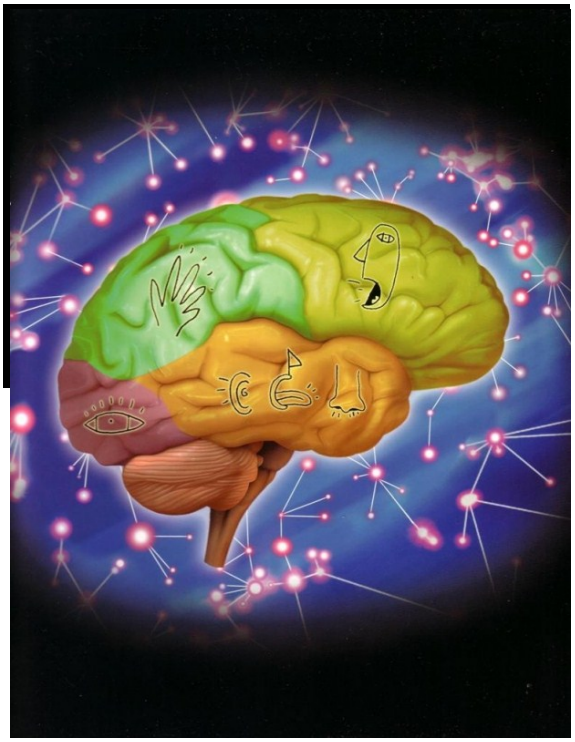
Introduction

The Office of Rural Mental Health Research (ORMHR) of the National Institute of Mental Health (NIMH) established by Public Law 102-321, is charged with addressing the rural mental health research needs in the United States. In conjunction with the NIMH mission of a world in which mental illnesses are prevented and cured, the ORMH carries that mission to rural and remote areas. The United States Department of Agriculture's (USDA) Economic Research Service (ERS) reports that 80 percent of the United States (US) land area is rural with a population of over 50 million people (Kusmin, 2009). According to the National Center for Frontier Communities (NCFC; 2007), 56 percent of the land area of the United States is frontier and more than 9 million people, or less than 4 percent of the population of the country lives in these isolated areas (Appendix B: Figure 1). There are three basic definitions of rural that are used by government agencies: 1) the U.S. Census definition, 2) the Office of Management and Budget (OMB) definition, and 3) the Economic Research Service (ERS) of the United States Department of Agriculture (USDA). (See definitions of "rural" in Appendix A.) For this report we will use the ERS definition developed in conjunction with the Department of Health and Human Services (DHHS), Health Resources and Services Administration (HRSA), Office of Rural Health Policy (ORHP) and the WWAMI Rural Research Center at the University of Washington. The definition is based upon Rural-Urban Commuting Area (RUCA) codes that are based upon the travel distance and time to the nearest edge of an Urbanized Area (UA) or Urban Cluster (UC). "Rural" is defined as any area outside these urban areas (Hart, 2006).

Frontier and remote areas are likewise defined in several ways. A common definition of "frontier" is an area with less than six people per square mile (Wagenfeld, 2003). The Office for the Advancement of Telehealth (OAT) defines frontier as "ZIP code areas whose calculated population centers are more than 60 minutes or 60 miles along the fastest paved road trip to a short-term nonfederal general hospital of 75 beds or more, and are not part of a large rural town with a concentration of population over 20,000." This definition is based upon distance and time to services rather than population density. The Office of Rural Health Policy has undertaken a two year project to create a standardized national rural frontier/remote definition. For this paper we will use the RUCA definition for frontier and remote by a combination of ZIP code area and travel distance (Appendix B: Figure 2). Those areas not connected to others by road (e.g., islands and remote Alaskan villages; Hart, 2006) are in the travel time RUCA designations.

Another definition important to this paper are Mental Health Professional Shortage Areas (MHPSA; Appendix B: Figure 3) which tend to be concentrated in the upper Midwest, plains, and mountain regions where rural and frontier areas are concentrated. There are large geographic areas where the number of mental health professionals is insufficient to meet the population demand. It should be noted that definitions of rural and frontier are under revision and to be reported in late 2011. The new definitions will utilize one kilometer tracts that can be integrated into zip codes, census tracts, or other systems (Hart, 2011).

This paper will examine the current literature related to mental health research in rural, frontier and remote areas of the United States. The issues for mental health in rural areas will be discussed followed by recommendations for future research addressing rural and remote mental health.



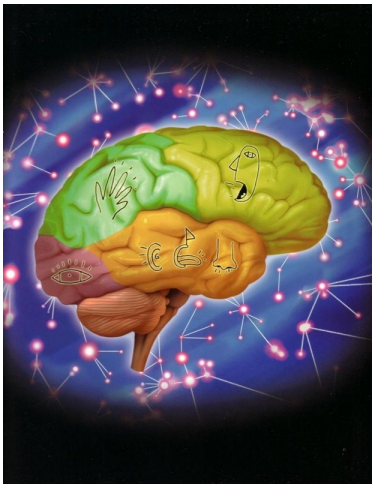
Review of Literature

Access and Quality

Mental Health Disparities

Special Populations

Special Topics



Literature Review

The examination of rural mental health literature is complex. Many studies are conducted globally in locations such as Africa, Australia, China, Europe, India and other areas outside the United States (U.S.). This review was limited to U.S. and immigrants or other special populations within the U.S. PsychINFO (2,251 articles), PubMed (3,607 articles), and SCOPUS (4,785 articles) databases were searched for articles related to rural mental health. Search terms, limits to searches, and databases with the number of articles retrieved are located in Appendix C. Although many articles were found, the majority were international studies and/or medical studies that mentioned mental health issues, but did not focus on mental health. Many articles reflected the lack of sufficient services in rural and frontier areas (Anderson & Gittler, 2005; Borders & Booth, 2007; Borgenicht, 2008; Chatterjee, Chaterjee, & Jain, 2003; Cook, 2004; Coward, Bull, Kukulka, & Galliher, 1994; Cully, Jameson, Phillips, Kunik, & Fortney, 2010; Cutrona, Halvorson, & Russell, 1996; Farr, Bitsko, Hayes, & Dietz, 2010; Fenell & Hovestadt, 2005; Fortney, 2010; Ziller, Anderson, & Coburn, 2010). Only one study indicated lifetime prevalence rates for rural young adults for psychiatric disorders (Rueter, Holm, Burzette, Kim, & Conger, 2007a). The selected databases yield no apparent studies examining the prevalence of mental health/psychiatric disorders among the rural and frontier populations across age spans. One study contained a comparison of mild and severe psychological distress from data collected through the 2007 U.S. Behavioral Risk Factor Surveillance System (BRFSS) indicating those from urban areas had an adjusted 17% greater incidence of psychological distress than those in rural areas (Dhingra, Strine, Holt, Berry, & Mokdad, 2009). Those studies utilize special groups, such as American Indian, Alaska Native, HIV/AIDS, gay and lesbian to name a few, participating in projects in a defined region including areas of one to three states (Rueter, Holm, Burzette, Kim, & Conger, 2007a). There are two major studies that examine the mental healthcare workforce by county in the U.S. (Ellis, Konrad, Thomas, & Morrissey, 2009; Robiner & Crew, 2000; Thomas, Ellis, Konrad, Holzer, & Morrissey, 2009). Quality of care provided in rural areas are addressed in two articles, one on specific treatment of depression (Fortney, Harman, Xu, & Dong, 2010) and the other on quality and access to rural health in general, but no specific information on mental health (Reschovsky & Staiti, 2005). Much more research is available on telemedicine with 110 articles in the search, most addressing medical conditions and may mention mental health, but not really a focus on telemental health. Issues such as transportation, mental health services in primary care, and use of emergency departments for mental health issues were addressed. Special populations in the research included African Americans, American Indian/Alaska Native (AI/AN), farmers, pregnant women, men, Native Hawaiian and Pacific Islanders, rural veterans, immigrants, prisoners and the recently released from prison, and refugees (Archambeau et al., 2010; Baker & Oswalt, 2008; Connor, Layne, & Thomisee, 2010; Garcia et al., 2008; Gone, 2009; Kogan & Brody, 2010; Levant & Habben, 2003; Mathew, 2010; Pavkov, Travis, Fox, King, & Cross, 2010; Smith, Easton, Saylor, & Elders from the Alaska Villages of Buckland and Deering, 2009; Turner & Pope, 2009). Special topic areas include such areas as suicide, substance abuse, postpartum depression, and co-morbid conditions. Suicide rates are significantly higher among rural than urban residents (Beeson, 2000; NCHS, 2001; Wagenfeld et al., 1994). Van Gundy (2006, p.17) reported the highest rates of rural substance use among American Indian/Alaska Natives and the lowest among African Americans.

In a review of studies on Simmons and Havens (2007) found that rural residents were more likely to meet the criteria for substance abuse disorders if they also met the criteria for any mental disorder; however, they were less likely to receive treatment.

Wagenfeld (2003) described rural populations as differing from urban populations in that they have a larger proportion of elderly persons, but a smaller proportion of minorities than urban areas. Rural areas have lower incomes and slightly higher unemployment rates. Rural residents have lower levels of insurance coverage, lower likelihood of receiving prescription drug coverage, and a higher likelihood of receiving Medicare, and lesser benefits. Rural residents self-reported health status tends to be fair or poor and the prevalence of physician-diagnosed chronic conditions were higher. Also, rural areas had fewer and less well-trained health care providers and greater numbers of suboptimal healthcare facilities. Wagenfeld (2003) also pointed out that economic declines tend to start in rural and frontier areas and they tend to be the last to recover. This also relates to the petroleum industry. With a single economic base whether agriculture or petroleum, when it collapses, a chain reaction occurs impacting the economy of the entire region. Poverty is another aspect that hits rural populations disproportionately (Campbell, Richie, & Hargrove, 2003). Figure 4 illustrates most of the high poverty rates occur in rural and frontier areas including reservations, border towns in the southwest, Appalachian coal mining regions of Kentucky and West Virginia, the Mississippi delta region and the rural areas of the Deep South. Campbell and associates quote a rural public health nurse to illustrate the difficulty of providing adequate mental health care to people who are worried about fulfilling their most basic and necessary needs, "It's mighty hard to do psychotherapy with a woman who is worried whether she is going to be able to feed her kids." They go on to explain it is just as hard to get an unemployed man who is hungry to talk about his feelings. It seems when there are so many other pressing problems discussing feelings is seen as a luxury. On reservations, American Indian unemployment goes as high as 90% in some regions and the average age is 29 years (U.S. Bureau of Census, 2011).

An area that has increased demand in rural and frontier areas is non-physician prescription privileges for advanced practice nurses, pharmacists, psychologists and providers in other specialties (Sammons, 2003). Telehealth is another mechanism that has helped to bridge the gap between rural and urban resources. Telehealth systems are varied and there are no standard definitions since the technology is developing so rapidly the changes are constant (Stamm, 2003). The challenges related to telehealth include establishing the effectiveness of the treatment, reimbursement for services, licensure of the provider and/or supervisor (sometimes across state lines), and inconsistent access to the technology in different locations (Stamm, 2003).

Access and Quality. The President's New Freedom Report (USDHHS, 2003) indicates that rural areas have unmet needs, barriers to care, and serious problems with access to care. The literature shows this to be true in substance abuse treatment (Anderson, 2003; Anderson & Gittler, 2005; Borders & Booth, 2007; Quintero et al., 2007; Quintero, Lilliott, & Willging, 2007) and others indicate the same types of needs for mental health services (Blank, Fox, Hargrove, & Turner, 1995; Boyd et al., 2008; Costello, Copeland, Cowell, & Keeler, 2007; Cutrona, Halvorson, & Russell, 1996; DeLeon, Wakefield, & Hagglund, 2003; Hanrahan & Sullivan-Marx, 2005; Heflinger & Hoffman, 2009; Reschovsky & Staiti, 2005; Smalley et al., 2010). Most researchers addressing services in rural and frontier areas examined the use of primary care as a delivery mechanism for mental health services (Adams, Xu, Dong, Fortney, & Rost, 2006; Anderson & Larke, 2009; Hartley et al., 2007; Richardson, Lewis, Casey-Goldstein, McCauley, & Katon, 2007). In addition to services for people in rural and frontier areas, poverty and payment for services is also an issue (Costello et al., 2007; Smalley et al., 2010). Smalley and associates (2010) reported an estimated 14% of adult rural residents live below the poverty line compared to 11% of urban residents and that the rates are even higher

for minority rural residents: 33% of African Americans, 27% of Latinos/as, and 51% of American Indian/ Alaska Natives live below the poverty line. Smalley and associates (2010) further reported a greater impact of the mental health problems in rural areas due to accessibility, availability, and acceptability of rural mental health services. Accessibility includes knowledge of when and where services are available, transportation to and from services, and affordability of the services. Availability is impacted by mental health professional shortages where 85% of Mental Health Professional Shortage Areas are located in rural and frontier areas (Smalley et al., 2010). Dhingra and associates (2008) examined the BRFSS data for psychological distress of urban versus rural areas in 24 states. Their findings indicated that urban areas have psychological distress at a 17% higher rate than rural areas. Although this is the only study that looks at a large volume of urban and rural areas, it must be pointed out that they did not consider any areas with less than 500 participants. This limitation rules out many of the rural and frontier areas that are more remote. Some counties in the frontier regions may have less than six people in the entire county, let alone per square mile. Conversely, others report higher rates of child abuse, depression, domestic violence, incest, and substance abuse including alcohol, tobacco, methamphetamines, inhalants, marijuana, and cocaine than their urban counterparts (Bushy, 1994; Cellucci & Vik, 2001; Gogek, 1992; SAMHSA, 2010).

Quality of mental health services as well as availability were lower among rural residents (Wang et al., 2005), treatment in primary care was more apt to include medication instead of psychotherapy due to the lack of mental health professional services in the area (Richardson et al., 2007). There were no articles addressing the level of training of those providing mental health services and treatment in rural areas. Although Smalley and associates (2010) indicated that half of the counties in the U.S. do not have a psychologist, they did not address the quality of services by the providers available that had less training. The challenges related to practitioner shortages include recruiting and retaining professionals because of lower salaries, limited social/cultural outlets, and increased risk of ethical dilemmas in rural practice (HRSA, 2005). The availability of rural mental health services and providers is seriously limited in rural communities. Over 85 percent of the 1,669 federally designated mental health professional shortage areas (MHPSAs) are rural (Bird, Dempsey & Hartley, 2001). The Health Resources and Services Administration reports there are 3,291 MHPSAs with 80 million people and it would take 5,338 practitioners to meet the need (HRSA, 2009). According to the National Advisory Committee on Rural Health (Wagenfeld, Murray, Mohatt, & DeBruyn, 1994), of the 3,075 rural counties in the United States, 55% had no practicing psychologists, psychiatrists, or social workers, and all of these counties identified were rural. According to NACRH (2008) in 1995, 1,120 counties (54.6%) were non-metropolitan areas and by 2004, 1,616 counties (78.8%) were non-metropolitan areas accounting for 30 million rural residents. NACRH (2008) further reports that assessing mental health professional workforce has been hampered by a lack of reliable data for the key mental health professions: psychiatry, social work, psychology, marriage and family counseling, and psychiatric nursing. Psychiatry is the only profession with a complete list of licensed providers and practice locations at the national level. Hanrahan and Sullivan (2005) reported that Advanced Practice Nurses (APN) and Primary Care Physicians (PCP) provide more services to those requiring mental health services in rural and remote areas than psychiatrists, psychologists, and social workers. Hartley and associates (Hartley et al., 2007) reported the use of critical access hospitals (CAHs) emergency departments (ED) for individuals in rural areas because of lack of mental health services. Those seeking services reported symptoms for affective disorders, substance abuse, anxiety, and psychotic disorders. It was further reported that 21% left the ED with no or unknown treatment as did 51% who had a mental health condition secondary to an emergent problem (Hartley et al., 2007). Only about one third of the CAHs have on-site detoxification services and 2% have inpatient psychiatric services leading to rural patients needing to travel over an hour to receive these services (Hartley et al., 2007).

Mental Health Disparities. Mental health disparities are defined differently by different agencies depending upon the purpose, focus, expertise, and context for the definition. This paper will use the CDC

definition as it bridges many of the agency definitions by describing mental health disparities as falling within one of three categories: 1) disparities between mental health and other public health issues, 2) disparities between those with mental illness and those without, and 3) disparities between populations with respect to mental health and quality, accessibility, and outcomes of treatment (Safran et al., 2009). The Mental Health Science Group of the Federal Collaboration on Health Disparities Research created a list of questions to guide the directions for mental health disparities research (Safran et al., 2009) (Table 1). Simmons and Havens (Simmons & Havens, 2007) concluded that substance use/abuse was higher among rural populations with fewer residents seeking treatment for mental health disorders. This was a two-fold issue. First the documented lack of treatment services in rural areas and second, rural residents are more apt to self-medicate mental disorders with alcohol than urban residents. It was speculated that to reduce the self-medicating behaviors the stigma involved in receiving mental health treatment must first be reduced (Simmons & Havens, 2007).

Ethnic and racial groups differ greatly in the prevalence of psychiatric disorders. The few studies that existed examined different groupings, ages, and factors in determining prevalence. It is unclear how generalizable the studies may be to other rural populations. When examining 12 month and lifetime major depression among multiple ethnic and racial groups, Gonzalez and associates (2010) found using the Collaborative Psychiatric Epidemiological Studies (CPES) data which combines three nationally representative studies: National Latino and Asian American Study, National Study of American Life (NSAL), and the National Comorbidity Study Replication (NCS-R). The CPES analysis revealed that in the past 12 months those that were born in the United States were more likely (10.2%) to be diagnosed with major depression than those that were foreign born (6.3%). Further, Puerto Ricans were more likely (11.9%) than any other group to be depressed. Asian groups had the lowest rates (Vietnamese =4.2%; Filipinos=4.2%; and Chinese=4.6%). Latinos (Cuban, 8%; Mexican American, 8%; Black Caribbeans, 7.8%) were fairly consistent except Puerto Ricans (11.9%). African Americans (6.8%) were lower than whites (8.3%). Lifetime diagnosis of major depression had U.S. born participants at nearly twice the rate of foreign born participants. Asians, including Filipino (7.2%), Vietnamese (8.4%), and Chinese (10.1%), had the lowest rates of major depression while Puerto Ricans (22.2%) and Whites (20.4%) had the highest rates. African Americans (12.3%) to Cubans (17.4%) encompassed the rates of the other groups. Age of onset of depression averaged about 25 years of age. Jimenez and associates (2010) used the CPES data to report the lifetime prevalence rates for psychiatric disorders in elderly ethnic minorities. For people over the age of 60 years the rates for psychiatric disorders are reported non-Latino White, Asian, African American, Afro-Caribbean (See Table 2.). The rates for any psychiatric disorder among older Americans included Latino (23.8%), non-Latino White (23.9%), African American (21.1%), Afro-Caribbean (17.3%), and Asian (14.6%). American Indian and Alaska Natives were not included in this study. Beals and associates (Beals et al., 2005; Beals, Novins et al., 2005)reported rates from two regionally different American Indian tribes and compared them with the 1990-1992 National Comorbidity Study males (Table 3; female diagnoses were not reported).

Hasin and associates (2005) with results from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) found rates between ethnic groups of 12 month and lifetime prevalence of Major Depressive Episodes to be from highest to lowest: American Indian/Alaska Native 150% of whites (AI/AN; 8.9%; 19.2%); white (5.5%; 14.6%); Black 70% of whites (4.5%; 8.9%); Hispanic (4.3%; 9.6%) and Asian or Pacific Islander (4.2%; 8.8%) both at 60% of whites. Costello and associates (1997) examined the three month prevalence rates for children of one American Indian tribe (n=323) and rural white children (n=933) in the Great Smokey Mountains. The ratios between American Indian and White children the prevalence of poverty (2.45:1), parental history of alcohol or other drug (AOD) abuse (1.98:1), parental history of violence to spouse or children (1.62:1), parental history of mental illness (1:1.42), current maternal depression (1:1), parental mental illness present (1:1.36), and family adversity present (2.44:1) were reported.

Screening information for women in rural primary care settings resulted in an estimate of 44.3% of women using the Community Health Center (CHC) in the rural south (Hauenstein & Peddada, 2007). Rueter and

associates (2007) reported a lifetime prevalence of any psychiatric disorder with young rural adults (19-23) at 61.4% and a 12 month prevalence of any psychiatric disorder at 24.3% (Table 4). McSparron (2002) found that over 40% of farm owners were depressed during the farm crisis in 2000. This was over 200% the rate reported by Linn & Husaini (1987).

Issues of continuity of care regarding psychiatric disorders are mostly addressed by research with substance abuse treatment facilities transitioning to outpatient. Very little research exists on continuity of care regarding psychiatric disorders other than to note the lack of services in rural areas.

Special Populations. Special populations among rural areas include ethnic and racial groups (American Indian and Alaska Native, African American, Asian, Latino/a), age groups (children, older adults), military (Active Component, National Guard, Reserve Component, and veterans), special groups (sexual minorities, impoverished, rural homeless, unemployed, refugees, migrant workers, incarcerated, disabled) and other subgroupings. Within each group there are multiple subgroupings such as race and ethnicity where American Indians and Alaska Natives include over 560 federally recognized tribes and villages and about 200 more that are state or locally recognized with diverse cultural practices and Latino/as who may come from Puerto Rico, Cuba, Mexico, South America, or any of a number of other subcultures who are combined because they speak a common language. Most racial and ethnic group studies either lump all from that group into one subgroup such as American Indian or Latino with no clear indication of the make-up or work with one sub-group with question as to whether it generalizes to other subgroups(Safran et al., 2009). Although AI/AN populations make up only about 1-2% of the total U.S. population (Humes, Jones and Ramirez, 2011) they make up about 50% of the nation's diversity (Hodgkenson, 1990). Standard measures for depression in the general population are used with other groups, however, the psychometrics to assess the validity and reliability within the special populations have not been conducted. They may not be appropriate to the culture or the translation may be inaccurate. There is no word for "depression" in any AI/AN language (Lafromboise, 1996). Measures for other disorders are also lacking in validation with many cultural groups. The psychometrics need to be established before the research to examine efficacy of treatment modalities can be addressed (Safran et al., 2009).

Rural populations themselves are special populations when socioeconomic status, access to services, quality of services, continuity of care, and rural versus urban comparisons (Brems, Johnson, Warner, & Roberts, 2007; Briddell, 2010; Choo et al., 2010; Dhingra et al., 2009; Forchuk et al., 2010; Gorman et al., 2007; M. J. Hall, Marsteller, & Owings, 2010; Hauenstein et al., 2007; Hayslip Jr., Maiden, Thomison, & Temple, 2010; Holt, Schulz, & Wynn, 2009; Howell & McFeeters, 2008; Jameson, 2010; Lu, Samuels, Kletke, & Whitler, 2010; Mulder, Jackson, & Jarvis, 2010; L. L. Myers, 2010; Peen, Schoevers, Beekman, & Dekker, 2010; Peterson & Litaker, 2010; Riva, Bambra, Curtis, & Gauvin, 2010; Robbins, Dollard, Armstrong, Kutash, & Vergon, 2008; Stansfeld, Weich, Clark, Boydell, & Freeman, 2008; A. E. Wallace, MacKenzie, Wright, & Weeks, 2010; Xu, Rost, Dong, & Dickinson, 2011).

Those who are incarcerated or formerly incarcerated that are in rural areas have more problems accessing services and receiving continuity of care than their urban counterparts (Kane & DiBartolo, 2002; Kulkarni, Baldwin, Lightstone, Gelberg, & Diamant, 2010; Mallett, 2010; Mateyoke-Scrivner, Webster, Staton, & Leukefeld, 2004; Primm, Osher, & Gomez, 2005; Pullmann & Craig, 2009; Schoeneberger, Leukefeld, Hiller, & Godlaski, 2006; Staton, Leukefeld, & Logan, 2001; Staton-Tindall, Duvall, Leukefeld, & Oser, 2007; Wodahl, 2006). There are five articles on incarcerated women (Hatton & Fisher, 2008; Hatton & Fisher, 2008; Kane & DiBartolo, 2002; Severson, Postmus, & Berry, 2009; Staton et al., 2001; Staton-Tindall et al., 2007), three on the use of telemental health services with the incarcerated (Manfredi, Shupe, & Batki, 2005; Norman, 2006; L. K. Richardson, Frueh, Grubaugh, Egede, & Elhai, 2009), four articles addressing substance use issues with juvenile offenders (Graham & Corcoran, 2003; M. T. Hall, Howard, & McCabe, 2010;

Mallett, 2010; Pullmann & Craig, 2009), one article on HIV disparities among the incarcerated (Hatcher, Toldson, Godette, & Richardson, 2009). Most research examines substance abuse related to incarceration.Homelessness is usually thought of as an urban problem; however, rural homeless have even more difficulty gaining employment, housing, and services (Forchuk et al., 2010). Homeless youth in rural areas present even more issues since they many times fall between the cracks with youth services including children's mental health, child welfare, education, and youth justice and the adult services that include social assistance, mental health, and justice systems. First and associates (First, Rife, & Toomey, 1994) found that rural homeless tend to be younger, are more apt to be single women or mothers with children, are more highly educated and less likely to be disabled than their urban counterparts. Five major groups of rural homeless were identified: 1) young families, 2) individuals currently employed but who have too little income to afford housing, 3) women who are unable to work because of child care responsibilities or have limited skills for the labor market, 4) men who are generally older, homeless longer, and more likely to be disabled, and 5) disabled people without social networks and social program support to live independently (First et al., 1994). There are some more recent studies in Canada (Brannen, Johnson Emberly, & McGrath, 2009; Forchuk et al., 2010; O'Reilly, Taylor, & Vostanis, 2009) and other countries.

The current wars in Iraq and Afghanistan and ongoing use of National Guard and Reserve troops for multiple deployments has presented a new problem for veterans' health and mental health services and for their families (Grady & Melcer, 2005; Lapp et al., 2010; Lyons, 2003; Morland, Greene, Rosen, Mauldin, & Frueh, 2009; A. E. Wallace, Weeks, Wang, Lee, & Kazis, 2006; A. E. Wallace et al., 2010; A. E. Wallace et al., 2010; West & Weeks, 2006; J. Westermeyer et al., 2009). In the past, military and their families were clustered around bases. The current situation leaves veterans scattered over large rural distances where there is a paucity of services and little connection with fellow veterans after their return from deployment (Wallace et al., 2006; Wallace et al., 2010; Wallace, MacKenzie, Wright, & Weeks, 2010).

Mental health research with immigrants has included stigma and beliefs about mental health, socioeconomic factors, language barriers for services, the isolation for victims of interpersonal violence, and adjustments within a new culture (Aguilera-Guzmán, De Snyder, Romero, & Medina-Mora, 2006; De Jesus Diaz-Perez, Farley, & Cabanis, 2004; Farley, Galves, Dickinson, & Perez Mde, 2005; Kim et al., 2011; Myers & Rodriguez, ; Nadeem, Lange, & Miranda, 2009; Ozer, Fernald, & Roberts, 2008; Sah, 2000; Salgado De Snyder, Diaz-Perez, & Ojeda, 2000; Silva-Martinez, 2010; J. Westermeyer, ; Wilkerson, Yamawaki, & Downs, 2009; Yellowlees, Marks, Hilty, & Shore, 2008). More research is available that relates to migrant workers in rural areas. This research includes parenting and other stresses (Aguilera-Guzmán, De Snyder, Romero, & Medina-Mora, 2004; Appelgren & Spratt, 2011; Farley et al., 2005; Hiott, Grzywacz, Davis, Quandt, & Arcury, 2008), care for workers and their families (Connor et al., 2010), anxiety (Ozer et al., 2008), use of telemental health (Yellowlees et al., 2008), cultural aspects of substance use treatment(Loury & Kulbok, 2007), and acculturation factors (Aguilar-Gaxiola et al., 2002; Shore, Savin, Novins, & Manson, 2006; Whitener, 1998; Wilkerson et al., 2009).

Sexual and gender minority groups are another special population in rural areas. Lesbian, gay, bisexual, and transgender individuals have difficulty in urban areas where services are more prevalent, but in rural communities there is even greater isolation and discrimination (Preston, D'Augelli, Kassab, & Starks, 2007; Willging, Salvador, & Kano, 2006a; Willging, Salvador, & Kano, 2006b), reports indicate higher alcohol and substance use rates among LGBT youth(Freese, Obert, Dickow, Cohen, & Lord, 2000; Gordon, Ettaro, Rodriguez, Mocik, & Clark, 2011; Kramer, Han, & Booth, 2009; Polaha, Dalton, & Allen, 2011), interpersonal violence and suicide risk is higher (Biddle, Sekula, Zoucha, & Puskar, 2010; Carlson & Slovak, 2006), but also resilience (Cohn & Hastings, 2010; Friedman, 1997).

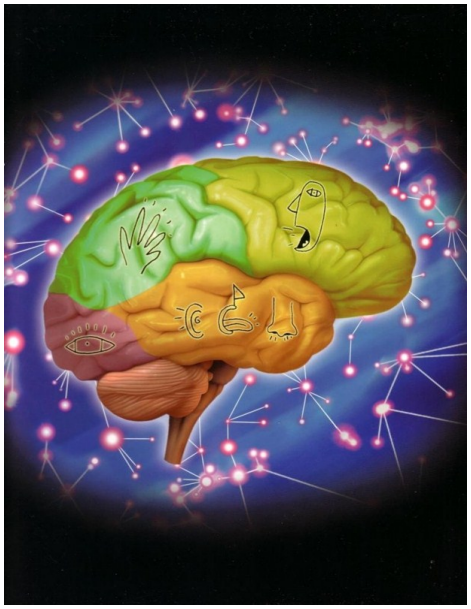
The research with these special populations is limited and each topic is spread over age groups, ethnic and cultural groups, and/or related to other health care issues.

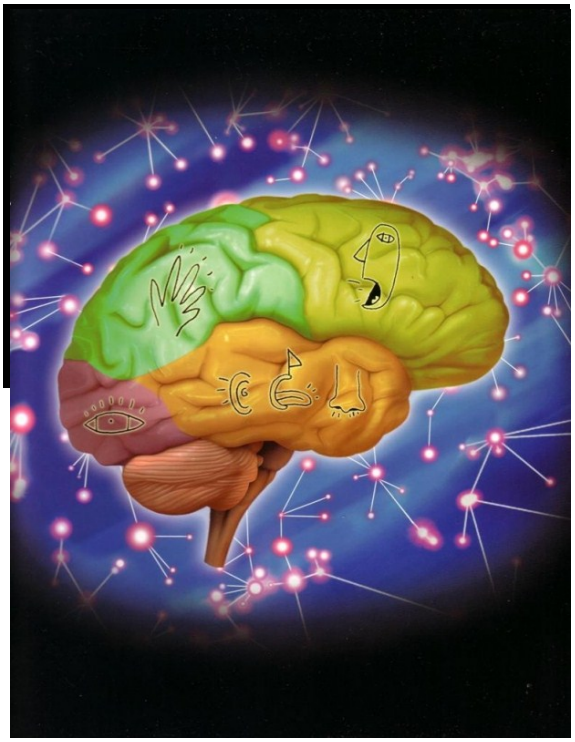
Special Topics: Special topics of mental health research related to rural areas include suicide, substance abuse, co-morbidity, and postpartum depression. Singh and Siahpush (2002) examined suicide rates from most urban to most rural areas from 1970 to 1997 and found for males the more rural the environment the higher the rate; however, for females the most recent rates were constant across rurality. American Indians have the highest suicide rate in the United States at 1.8 times the national average (CDC, 2009). Lack of physician and mental health providers, proximity of rescue for those attempting suicide, and greater availability and familiarity of firearms have been suggested as possible reasons for higher rates, but further study is required to establish what the cause may be.

Substance abuse rates have also been reported in higher levels in rural areas. Those abusing substances are less likely to seek care and tend to self-medicate psychiatric disorders with substances (Fortney, Booth, Kirchner, & Han, 2003; Rueter, Holm, Burzette, Kim, & Conger, 2007b). Substance use at the time of suicide attempts and completions is also very high (Fortney et al., 2010; Gordon et al., 2011; Ryan, Forehand, Solomon, & Miller, 2008).

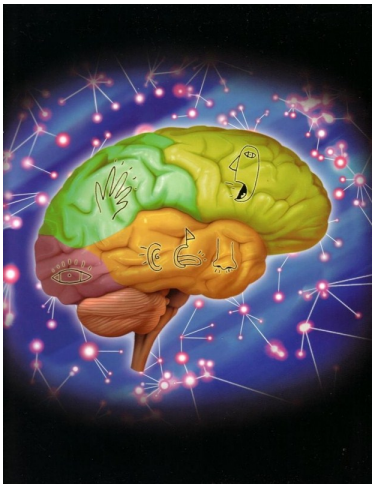
Co-morbidities in rural areas are related to multiple issues including substance use and psychiatric disorders, multiple psychiatric disorders, and psychiatric or substance abuse disorders and a health related diagnosis. Much of the treatment received for these issues are through primary care and focused on the health aspects rather than the mental health or substance abuse due to stigma, lack of services, confidentiality, and availability of dual diagnosis treatment (Adams et al., 2006; Anderson, 2008; Nosek, Hughes, & Robinson-Whelen, 2008; Shim, Compton, Rust, Druss, & Kaslow, 2009; Tseng, Hemenway, Kawachi, Subramanian, & Chen, 2008).

Pre and postpartum depression in rural women is also a special topic which needs further examination (Alston & Kent, 2008; Bullock & Bradley, 2010; Farr, Bitsko, Hayes, & Dietz, 2010; Hanlon, Whitley, Wondimagegn, Alem, & Prince, 2009; Menke & Flynn, 2009; Price & Proctor, 2009; Thorndyke, 2005; Tudiver, Edwards, & Pfortmiller, 2010; Walker, Shannon, & Logan, 2010).





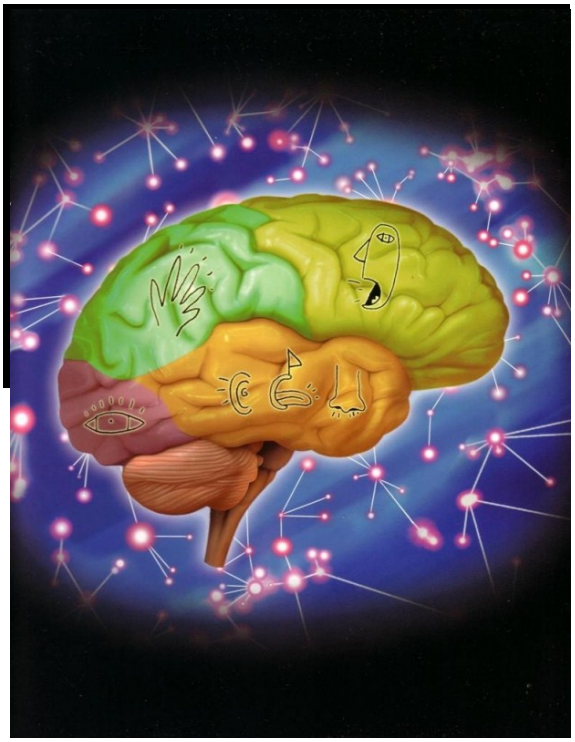
Issues in Rural Mental Health



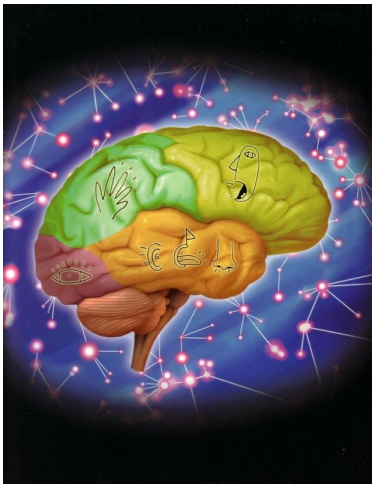
Issues in Rural Mental Health Research

The issues in rural mental health include disparities in access, availability and culturally appropriate treatment, quality, mental health disparities in rural areas, special populations, and special topics (P. H. DeLeon, Wakefield, Schultz, Williams, & VandenBos, 1989; Hartley, Britain, & Sulzbacher, 2002; Rost, Fortney, Fischer, & Smith, 2002). Access disparities include inpatient and outpatient treatment, telemental health including licensure, credentialing, and out of state providers, primary care, the patient-centered medical homes (PCMH), payments and reimbursements including how funds are distributed, efficacy of costs, and the infrastructure needed to provide the services including cellular phone coverage, computer dial-up of DSL, secure connections for confidentiality, and stigma associated mental health problems and treatment. Availability includes the issues of culturally appropriate treatment, workforce and their quality and training, transportation and child care, and services that are available from counselors and social workers to psychological and neuropsychological assessment and psychiatric services. The quality components of the issues include research-based practice, practice-based evidence that is culturally appropriate, interactions of research-based and complementary and alternative interventions. Quality can also be addressed for American Indian, Alaska Native, and Native Hawaiian populations because of their special government relationships and requirements due to treaties, other ethnic minorities in rural and remote areas, those in nursing homes, the incarcerated, homeless, culturally competent care, the stigma of boys and men seeking treatment, rural veterans, immigrants, farm laborers and refugees. Another quality issue is the fragmentation of care or the need for a continuity of care from inpatient to outpatient care, transfer to local primary care providers, termination of services or self-help for maintenance of care. There are also ethical issues that impact rural and remote services including confidentiality, multiple relationships with clients, and location of the services in a way that protects the privacy of the client/patient. Comparisons of rural to urban settings, specialty services and needs in rural and remote areas are also needed.

Mental health disparities exist in many groups and subgroupings throughout rural, frontier, and remote areas. They also exist between mental health and other health related disorders/diseases. In this day of evidence-based treatment focus, there needs to be major focus on the validation of assessments that are used to determine the efficacy of a treatment, testing of various treatments within special populations, and examination of the cultural application of treatments. Because of the lack of mental health professionals in rural areas, it is important to examine the quality of services provided by those trained as behavioral health aides, social workers, psychology technicians, counselors, marriage and family therapists compared to psychologists (Ph.D.) and psychiatrists (M.D.). It is also important to look at prescription privileges for psychiatrists, use of psychiatric advanced practice nurses, and physician assistants to address medication needs. Rural areas tend to do more prescribing of medication for psychiatric disorders than treatment because of the lack of treatment professionals and difficulty getting payment for services.



Directions for Rural Mental Health Research



Directions in Rural Mental Health Research

Rural mental health research is primed for exploration in several distinct sectors: access, availability, quality, mental health disparities, special populations and special topics. The research begins with a common definition of rural and frontier or remote. New definitions of rural and frontier are due to be published in late 2011. These definitions will allow segments to be identified as rural or frontier to one square kilometer tracts (Hart, 2011).

The areas of access and availability are impacted by workforce, confidentiality, licensing, stigma and cultural appropriateness. The vast number of Mental Health Professional Shortage Areas in rural, frontier, remote, and island areas present a need for research addressing how to provide those services to people in areas that need access. These areas include the use of telemental health to deliver services, increasing providers in these areas, and alternative forms of treatment. Telemental health includes use of telephone, internet, video conference, and computer assisted means of providing assessment, diagnosis, and treatment. It could also involve remote coaching of an onsite assistant, supervision of providers in rural areas, and access to specialty services. Increasing the providers in these areas would involve rural placements of students, supervision of newly graduated providers in rural areas, and identifying what factors influence providers establishing a practice in rural, frontier, remote, and island areas. Research of alternative forms of treatment may include innovative and creative means of providing access, assessment of the treatment provided, and quality of patient care. In addition, assessments used to measure efficacy of treatment need to be assessed for validity and reliability for diverse populations. Access would also include stigma regarding mental health disorders and mental health treatment. Availability also impacts workforce, but also other means to access the services remotely through some sort of telemental health, mental health services through rural primary care, licensing for multiple states in a region as a means of addressing the needs of providers along state and territorial borders.

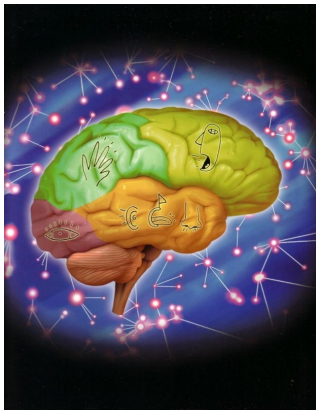
Quality mental health research would include issues of treatment fidelity, provider proficiency and credentialing, efficacy of Patient Centered Medical Home (PCMH), and telemental health as a cost-savings tool. Treatment fidelity would address the issue of interventions that are regimented or manualized in a way that could provide fidelity to the treatment while using therapists with lower levels of training such as associates degrees, bachelor's degrees and master's degrees compared with psychologists and psychiatrists.

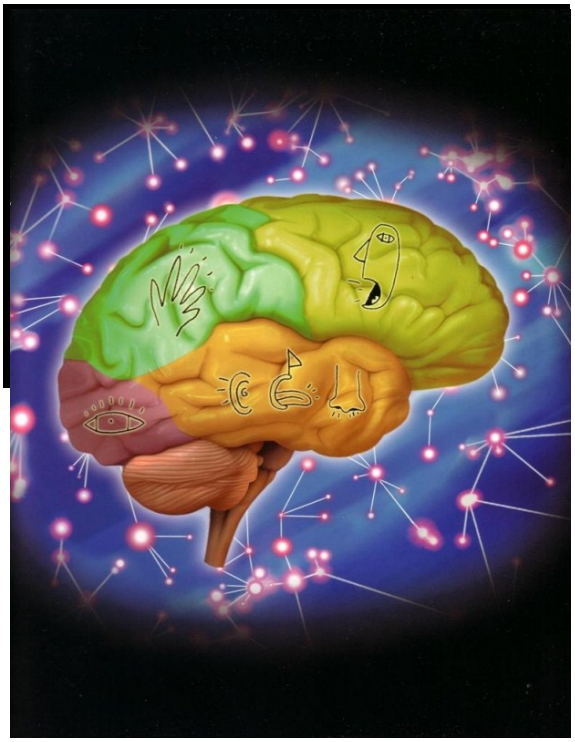
Special Populations include several groups living in rural areas: 1) ethnic minorities within rural populations, 2) migrant workers, 3) immigrants, 4) American Indian/Alaska Natives, 5) Hawaiian and Pacific Islanders, 6) veterans, National Guard and reserve troops and their families, 7) HIV/AIDS, 8) incarcerated, parolees, and re-entry, 9) LGBT populations, 10) boys and men, 11) homeless, 12) victims of sexual assault and interpersonal violence, 13) rural incarcerated or recently released, and 14) the disabled. Special topic areas include suicide, substance abuse and co-morbidity with mental health diagnoses.

Potential collaborations for the research projects might include, but not be limited to: 1) Office of Rural Health Policy (ORHP) at the Health Resources and Services Administration (HRSA), 2) Agency for Healthcare Research and Quality (AHRQ), 3) Bureau of Health Professions (BHPr) of HRSA, 4) Native American Research Centers for Health (NARCH) with the National Institute of General Medical Services (NIGMS) and the Indian Health Service (IHS), 5) Office of Rural Health (ORH) of the Veterans Health Administration (VHA), 6) the United States Department of Agriculture (USDA) Extension Service, 7) the Federal Bureau of Prisons (FBOP), and 8) Department of Defense (DoD). ORHP supports research in areas of health policy including tele-medicine, PCMH, healthcare reform, and access areas that relate to NIMH-Office of Rural Mental Health Research interests as well. ARHQ could partner in quality issues such as fidelity to treatment models, impact of care by level of training, and PCMH. The BHPr could partner in research on workforce issues related to mental health services and access, licensing and compacting issues, and training and supervision with telemental health to provide services to rural and remote areas. The NARCH Program is a mechanism for research in tribal areas and would address American Indian/Alaska Native mental health research areas. This program supports projects in collaboration with tribal programs to address those problems in the unique ways they are needed for this population. The Office of Rural Health in the VHA could partner for research with rural veterans and National Guard members who are in rural areas. The USDA Extension service has offices in the rural and remote counties throughout the United States. Their interest in the mental health of farmers, ranchers, and agricultural workers would make them a partner to these special populations. The Federal Bureau of Prisons is already conducting research on recidivism, drug treatment, and faith based programs. The FBOP could also be a partner in determining mental health issues for prisoners, rural release issues for prisoners with mental health problems, and other related areas.

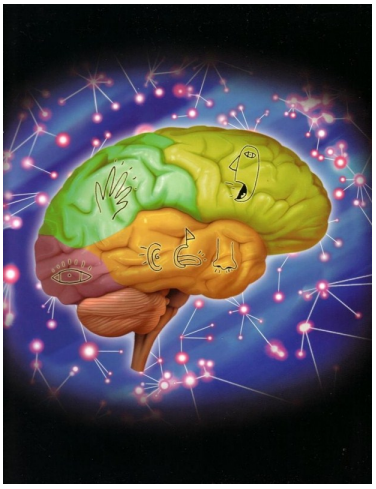
There are many needs for research in rural and frontier areas. There are also other partners with common interests and current mechanisms that provide an example for collaborative research endeavors between programs such as the NARCH program. With this time of economic distress and less funding available it is important to utilize partnerships and collaborations to provide more efficient approaches to addressing the research needs in rural, frontier, and remote areas. Hopefully, with the new definitions for rural and frontier due out later this year, identification of groups, areas, and topics will apply across agency boundaries.

It is anticipated that this White Paper along with the National Stakeholder Strategy for Achieving Health Equity released on April 8, 2011 by HHS Secretary Kathleen Sebelius, combined with the HHS Action Plan to reduce Racial and Ethnic Health Disparities and in conjunction with the scientific objectives of the NIMH Strategic Plan will provide the necessary impetus, direction and platform to advance the rural mental health agenda in a manner which significantly reduces health disparities and improves health equity for all. (DHHS, 2011; National Partnership for Action, 2011; NIMH, 2008).





References



References

Adams, S. J., Xu, S., Dong, F., Fortney, J., & Rost, K. (2006). Differential effectiveness of depression disease management for rural and urban primary care patients. *Journal of Rural Health, 22*(4), 343-350. doi:10.1111/j.1748-0361.2006.00056.x

Aguilar-Gaxiola, S. A., Zelezny, L., Garcia, B., Edmondson, C., Alejo-Garcia, C., & Vega, W. A. (2002). Translating research into action: Reducing disparities in mental health care for Mexican Americans. *Psychiatric Services, 53*(12), 1563-1568. doi:10.1176/appi.ps.53.12.1563

Aguilera-Guzmán, R. M., De Snyder, V. N. S., Romero, M., & Medina-Mora, M. E. (2004). Paternal absence and international migration: Stressors and compensators associated with the mental health of Mexican teenagers of rural origin. *Adolescence, 39*(156), 711-723.

Aguilera-Guzmán, R. M., De Snyder, V. N. S., Romero, M., & Medina-Mora, M. E. (2006). Paternal absence and international migration: Stressors and compensators associated with the mental health of Mexican teenagers of rural origin. *Family Therapy, 33*(3), 125-137.

Alston, M., & Kent, J. (2008). The big dry: The link between rural masculinities and poor health outcomes for farming men. *Journal of Sociology, 44*(2), 133-147. doi:10.1177/1440783308089166

Anderson, J. E., & Larke, S. C. (2009). Navigating the mental health and addictions maze: A community-based pilot project of a new role in primary mental health care. *Mental Health in Family Medicine, 6*(1), 15-19.

Anderson, R. L. (2003). Use of community-based services by rural adolescents with mental health and substance use disorders. *Psychiatric Services, 54*(10), 1339-1341. doi:10.1176/appi.ps.54.10.1339

Anderson, R. L. (2008). Finding the balance in evolving service sectors for youth with co-occurring disorders: Measurement and policy implications. *Residential Treatment for Children and Youth, 24*(3), 261-281. doi:10.1080/08865710802115759

Anderson, R. L., & Gittler, J. (2005). Unmet need for community-based mental health and substance use treatment among rural adolescents. *Community Mental Health Journal, 41*(1), 35-49.

Appelgren, K. E., & Spratt, E. (2011). Crecemos juntos: Understanding and alleviating parental stress among low country migrant workers. *Community Mental Health Journal,* doi:10.1007/s10597-011-9372-2

Archambeau, O. G., Frueh, B. C., Deliramich, A. N., Elhai, J. D., Grubaugh, A. L., Herman, S., & Kim, B. S. K. (2010). Interpersonal violence and mental health outcomes among Asian American and Native Hawaiian/other pacific islander college students. *Psychological Trauma: Theory, Research, Practice, and Policy, 2*(4), 273-283. doi:10.1037/a0021262

Baker, L., & Oswalt, K. (2008). Screening for postpartum depression in a rural community. *Community Mental Health Journal, 44*(3), 171-180. doi:10.1007/s10597-007-9115-6

Beals, J., Manson, S. M., Whitesell, N. R., Spicer, P., Novins, D. K., & Mitchell, C. M. (2005). Prevalence of DSM-IV disorders and attendant help-seeking in 2 American Indian reservation populations. *Archives of General Psychiatry, 62*(1), 99-108. doi:10.1001/archpsyc.62.1.99 .

Beals, J., Novins, D. K., Whitesell, N. R., Spicer, P., Mitchell, C. M., & Manson, S. M. (2005). Prevalence of mental disorders and utilization of mental health services in two American Indian reservation populations: Mental health disparities in a national context. *The American Journal of Psychiatry, 162*(9), 1723-1732. doi:10.1176/appi.ajp.162.9.1723

Beeson, P.G. (2000). Some notes and data on rural suicide. *Rural Mental Health, 25,* 13–15

Biddle, V. S., Sekula, L. K., Zoucha, R., & Puskar, K. R. (2010). Identification of suicide risk among rural youth: Implications for the use of HEADSS. *Journal of Pediatric Health Care: Official Publication of National Association of Pediatric Nurse Associates & Practitioners, 24*(3), 152-167. doi:10.1016/j.pedhc.2009.03.003

Bird, D.C., Dempsey, P. & Hartley, D. (2001). *Addressing mental health workforce needs in underserved rural areas: Accomplishments and challenges*. Portland, ME: Maine Rural Health Research Center, Muskie Institute, University of Southern Maine.

Blank, M. B., Fox, J. C., Hargrove, D. S., & Turner, J. T. (1995). Critical issues in reforming rural mental health service delivery. *Community Mental Health Journal, 31*(6), 511-524. doi:10.1007/BF02189436

Borders, T. F., & Booth, B. M. (2007). Research on rural residence and access to drug abuse services: Where are we and where do we go? *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association, 23 Suppl*, 79-83. doi:10.1111/j.1748-0361.2007.00128.x

Borgenicht, L. (2008). Serving the underserved: Personal, social, and medical challenges. In P. M. Dalinis (Ed.), *Ethical issues in rural health care.* (pp. 105-109). Baltimore, MD US: Johns Hopkins University Press. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=2008-06709-006&site=ehost-live; Rural AND Mental Health between 1970 an 2011 in English Human and Professional & Research Peer Reviewed

Boyd, C. P., Hayes, L., Sewell, J., Caldwell, K., Kemp, E., Harvie, L., . . . Nurse, S. (2008). Mental health problems in rural contexts: A broader perspective. *Australian Psychologist, 43*(1), 2-6. doi:10.1080/00050060701711841

Brannen, C., Johnson Emberly, D., & McGrath, P. (2009). Stress in rural Canada: A structured review of context, stress levels, and sources of stress. *Health and Place, 15*(1), 219-227. doi:10.1016/j.healthplace.2008.05.001

Brems, C., Johnson, M. E., Warner, T. D., & Roberts, L. W. (2007). Exploring differences in caseloads of rural and urban healthcare providers in Alaska and New Mexico. *Public Health, 121*(1), 3-17. doi:10.1016/j.puhe.2006.07.031

Briddell, L. O. (2010). *Rurality and crime: Identifying and explaining rural/urban differences.* ProQuest Information & Learning). *Dissertation Abstracts International Section A: Humanities and Social Sciences, 71*(3-) Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=2010-99170-331&site=ehost-live; Rural AND Mental Health 2010-2011. (2010-99170-331)

Bullock, A., & Bradley, V. L. (2010). Family income supplements and development of psychiatric and substance use disorders among an American Indian population. *JAMA: Journal of the American Medical Association, 304*(9), 962-963. doi:10.1001/jama.2010.1240.

Bureau of the Census, (2010). Proposed Urban Area Criteria for the 2010 Census. *Federal Register, 75(163):* 52174.

Bureau of the Census, (2010). U.S. Census Bureau: Question & Answer Center. Retrieved on February 9, 2010 from https://ask.census.gov/.

Bushy, A. (1994). When your client lives in a rural area: II. rural professional practice—considerations for nurses providing mental health care. *Issues in Mental Health Nursing, 15*(3), 267-276. doi:10.3109/01612849409009389

Campbell, C., Richie, S. D., & Hargrove, D. S. (2003). Poverty and rural mental health. In B. H. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide.* (pp. 41-51). Washington, DC US: American Psychological Association. doi:10.1037/10489-003

Carlson, K. T., & Slovak, K. L. (2006). Gender and violence exposure in a study of rural youth. *Journal of Public Child Welfare, 1*(4), 67-89. doi:10.1080/15548730802118298

Cellucci, T., & Vik, P. (2001). Training for substance abuse treatment among psychologists in a rural state. *Professional Psychology: Research and Practice, 32*(3), 248-252. doi:10.1037/0735-7028.32.3.248

Chatterjee, S., Chatterjee, A., & Jain, S. (2003). Developing community-based services for serious mental illness in a rural setting. In R. Thara (Ed.), *Meeting the mental health needs of developing countries: NGO innovations in india.* (pp. 115-140). Thousand Oaks, CA US: Sage Publications, Inc. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=2003-88088-006&site=ehost-live; Rural AND Mental Health between 1970 an 2011 in English Human and Professional & Research Peer Reviewed

Choo, E. K., Spiro, D. M., Lowe, R. A., Newgard, C. D., Hall, M. K., & McConnell, K. J. (2010). Rural-urban disparities in child abuse management resources in the emergency department. *The Journal of Rural Health, 26*(4), 361-365. doi:10.1111/j.1748-0361.2010.00307.x

Cohn, T. J., & Hastings, S. L. (2010). Resilience among rural lesbian youth. *Journal of Lesbian Studies, 14*(1), 71-79. doi:10.1080/10894160903060325

Connor, A., Layne, L., & Thomisee, K. (2010). Providing care for migrant farm worker families in their unique sociocultural context and environment. *Journal of Transcultural Nursing, 21*(2), 159-166. doi:10.1177/1043659609357631

Cook, A. (2004). Mental health services in rural areas. *NCSL Legisbrief, 12*(30), 1-2.

Costello, E. J., Copeland, W., Cowell, A., & Keeler, G. (2007). Service costs of caring for adolescents with mental illness in a rural community, 1993-2000. *The American Journal of Psychiatry, 164*(1), 36-42. doi:10.1176/appi.ajp.164.1.36

Costello, E. J., Farmer, E. M. Z., Angold, A., Burns, B. J., & Erkanli, A. (1997). Psychiatric disorders among American Indian and white youth in Appalachia: The Great Smoky Mountains study. *American Journal of Public Health, 87*(5), 827-832. doi:10.2105/AJPH.87.5.827

Coward, R. T., Bull, C. N., Kukulka, G., & Galliher, J. M. (1994). In Galliher J. M. (Ed.), *Health services for rural elders*. New York, NY US: Springer Publishing Co. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=1994-97795-000&site=ehost-live; Rural AND Mental Health between 1970 an 2011 in English Human and Professional & Research Peer Reviewed

Cully, J. A., Jameson, J. P., Phillips, L. L., Kunik, M. E., & Fortney, J. C. (2010). Use of psychotherapy by rural and urban veterans. *The Journal of Rural Health, 26*(3), 225-233. doi:10.1111/j.1748-0361.2010.00294.x

Cutrona, C. E., Halvorson, M. B. J., & Russell, D. W. (1996). Mental health services for rural children, youth, and their families. In C. T. Nixon (Ed.), *Families and the mental health system for children and adolescents: Policy, services, and research.* (pp. 217-237). Thousand Oaks, CA US: Sage Publications, Inc. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=1996-97750-011&site=ehost-live; Rural AND Mental Health between 1970 an 2011 in English Human and Professional & Research Peer Reviewed

De Jesus Diaz-Perez, M., Farley, T., & Cabanis, C. M. (2004). A program to improve access to health care among Mexican immigrants in rural Colorado. *Journal of Rural Health, 20*(3), 258-264. doi:10.1111/j.1748-0361.2004.tb00037.x

DeLeon, P. H., Wakefield, M., & Hagglund, K. J. (2003). The behavioral health care needs of rural communities. In B. H. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide.* (pp. 23-31). Washington, DC US: American Psychological Association. doi:10.1037/10489-001

DeLeon, P. H., Wakefield, M., Schultz, A. J., Williams, J., & VandenBos, G. R. (1989). Rural america: Unique opportunities for health care delivery and health services research. *American Psychologist, 44*(10), 1298-1306. doi:10.1037/0003-066X.44.10.1298

Dhingra, S. S., Strine, T. W., Holt, J. B., Berry, J. T., & Mokdad, A. H. (2009). Rural-urban variations in psychological distress: Findings from the behavioral risk factor surveillance system, 2007. *International Journal of Public Health, 54 Suppl 1*, 16-22. doi:10.1007/s00038-009-0002-5

Ellis, A. R., Konrad, T. R., Thomas, K. C., & Morrissey, J. P. (2009). County-level estimates of mental health professional supply in the United States. *Psychiatric Services (Washington, D.C.), 60*(10), 1315-1322. doi:10.1176/appi.ps.60.10.1315

Farley, T., Galves, A., Dickinson, L. M., & Perez Mde, J. (2005). Stress, coping, and health: A comparison of Mexican immigrants, Mexican Americans, and Non-Hispanic Whites. *Journal of Immigrant Health, 7*(3), 213-220. doi:10.1007/s10903-005-3678-5

Farr, S. L., Bitsko, R. H., Hayes, D. K., & Dietz, P. M. (2010). Mental health and access to services among US women of reproductive age. *American Journal of Obstetrics and Gynecology, 203*(6), 542.e1-542.e9. doi:10.1016/j.ajog.2010.07.007

Fenell, D. L., & Hovestadt, A. J. (2005). Rural mental health services. In M. C. Roberts (Ed.), *Handbook of mental health services for children, adolescents, and families.* (pp. 245-258). New York, NY US: Kluwer Academic/Plenum Publishers. doi:10.1007/0-387-23864-6_16

First, R. J., Rife, J. C., & Toomey, B. G. (1994). Homelessness in rural areas: Causes, patterns, and trends. *Social Work, 39*(1), 97-108.

Forchuk, C., Montgomery, P., Berman, H., Ward-Griffin, C., Csiernik, R., Gorlick, C., . . . Riesterer, P. (2010). Gaining ground, losing ground: The paradoxes of rural homelessness. *The Canadian Journal of Nursing Research = Revue Canadienne De Recherche En Sciences Infirmieres, 42*(2), 138-152.

Fortney, J. C., Booth, B. M., Kirchner, J. E., & Han, X. (2003). Rural-urban differences in health care benefits of a community-based sample of at-risk drinkers. *Journal of Rural Health, 19*(3), 292-298.

Fortney, J. C., Harman, J. S., Xu, S., & Dong, F. (2010). The association between rural residence and the use, type, and quality of depression care. *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association, 26*(3), 205-213. doi:10.1111/j.1748-0361.2010.00290.x

Freese, T. E., Obert, J., Dickow, A., Cohen, J., & Lord, R. H. (2000). Methamphetamine abuse: Issues for special populations. *Journal of Psychoactive Drugs, 32*(2), 177-182.

Friedman, L. J. (1997). Rural lesbian mothers and their families. In R. J. Mancoske (Ed.), *Rural gays and lesbians: Building on the strengths of communities.* (pp. 73-82). Binghamton, NY US: Harrington Park Press/ The Haworth Press. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=1998-07258-006&site=ehost-live; Rural AND Mental Health between 1970 an 2011 in English Human and Professional & Research Peer Reviewed

Garcia, C. M., Gilchrist, L., Campesino, C., Raymond, N., Naughton, S., & de Patino, J. G. (2008). Using community-based participatory research to develop a bilingual mental health survey for Latinos. *Progress in Community Health Partnerships : Research, Education, and Action, 2*(2), 105-120. doi:10.1353/cpr.0.0011

Gogek, E. B. (1992). 'Prevalence of substance abuse or dependence diagnoses on an inpatient inner city psychiatric unit': Reply. *The American Journal of Psychiatry, 149*(9) Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=1993-09708-001&site=ehost-live

Gone, J. P. (2009). A community-based treatment for native american historical trauma: Prospects for evidence-based practice. *Journal of Consulting and Clinical Psychology, 77*(4), 751-762. doi:10.1037/a0015390

Gordon, A. J., Ettaro, L., Rodriguez, K. L., Mocik, J., & Clark, D. B. (2011). Provider, patient, and family perspectives of adolescent alcohol use and treatment in rural settings. *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association, 27*(1), 81-90. doi:10.1111/j.1748-0361.2010.00321.x; 10.1111/j.1748-0361.2010.00321.x

Gorman, D., Buikstra, E., Hegney, D., Pearce, S., Rogers-Clark, C., Weir, J., & McCullagh, B. (2007). Rural men and mental health: Their experiences and how they managed: Feature article. *International Journal of Mental Health Nursing, 16*(5), 298-306. doi:10.1111/j.1447-0349.2007.00484.x

Grady, B. J., & Melcer, T. (2005). A retrospective evaluation of telemental healthcare services for remote military populations. *Telemedicine Journal and e-Health, 11*(5), 551-558. doi:10.1089/tmj.2005.11.551

Graham, T. L. C., & Corcoran, K. (2003). Mental health screening results for Native American and Euro-American youth in Oregon juvenile justice settings. *Psychological Reports, 92*(3 II), 1053-1060.

Hall, M. J., Marsteller, J., & Owings, M. (2010). Factors influencing rural residents' utilization of urban hospitals. *National Health Statistics Reports, (31)*(31), 1-12.

Hall, M. T., Howard, M. O., & McCabe, S. E. (2010). Subtypes of adolescent sedative/anxiolytic misusers: A latent profile analysis. *Addictive Behaviors, 35*(10), 882-889. doi:10.1016/j.addbeh.2010.05.006

Hanlon, C., Whitley, R., Wondimagegn, D., Alem, A., & Prince, M. (2009). Postnatal mental distress in relation to the sociocultural practices of childbirth: An exploratory qualitative study from Ethiopia. *Social Science & Medicine (1982), 69*(8), 1211-1219. doi:10.1016/j.socscimed.2009.07.043

Hanrahan, N. P., & Sullivan-Marx, E. M. (2005). Practice patterns and potential solutions to the shortage of providers of older adult mental health services. *Policy, Politics & Nursing Practice, 6*(3), 236-245. doi:10.1177/1527154405279195

Hart, G. (2006). Rural-Urban Commuting Area Codes (RUCAs). WWAMI Rural Health Research Center, University of Washington, Seattle, WA. Retrieved February 9, 2011 from http://depts.washington.edu/uwruca/index.php.

Hart, G. (2011). New Definition of Frontier. Presented at the Center for Rural Health, School of Medicine & Health Sciences, University of North Dakota, Grand Forks, ND. April 15, 2011.

Hartley, D., Britain, C., & Sulzbacher, S. (2002). Behavioral health: Setting the rural health research agenda. *Journal of Rural Health, 18*(SUPPL.), 242-255.

Hartley, D., Ziller, E. C., Loux, S. L., Gale, J. A., Lambert, D., & Yousefian, A. E. (2007). Use of critical access hospital emergency rooms by patients with mental health symptoms. *The Journal of Rural Health : Official Journal of the American Rural Health Association and the National Rural Health Care Association, 23*(2), 108-115. doi:10.1111/j.1748-0361.2007.00077.x

Hasin, D. S., Goodwin, R. D., Stinson, F. S., & Grant, B. F. (2005). Epidemiology of major depressive disorder: Results from the national epidemiologic survey on alcoholism and related conditions. *Archives of General Psychiatry, 62*(10), 1097-1106. doi:10.1001/archpsyc.62.10.1097

Hatcher, S. S., Toldson, I. A., Godette, D. C., & Richardson, J. B., Jr. (2009). Mental health, substance abuse, and HIV disparities in correctional settings: Practice and policy implications for African Americans. *Journal of Health Care for the Poor and Underserved, 20*(2), 6-16. doi:10.1353/hpu.0.0154

Hatton, D. C., & Fisher, A. A. (2008). Incarceration and the new asylums: Consequences for the mental health of women prisoners. *Issues in Mental Health Nursing, 29*(12), 1304-1307. doi:10.1080/01612840802498599

Hauenstein, E. J., & Peddada, S. (2007). Prevalence of major depressive episodes in rural women using primary care. *Journal of Health Care for the Poor and Underserved, 18*(1), 185-202. doi:10.1353/hpu.2007.0010

Hauenstein, E. J., Petterson, S., Rovnyak, V., Merwin, E., Heise, B., & Wagner, D. (2007). Rurality and mental health treatment. *Administration and Policy in Mental Health and Mental Health Services Research, 34* (3), 255-267. doi:10.1007/s10488-006-0105-8

Hayslip Jr., B., Maiden, R. J., Thomison, N. L., & Temple, J. R. (2010). Mental health attitudes among rural and urban older adults. *Clinical Gerontologist, 33*(4), 316-331. doi:10.1080/07317115.2010.503557

Heflinger, C. A., & Hoffman, C. (2009). Double whammy? rural youth with serious emotional disturbance and the transition to adulthood. *The Journal of Rural Health : Official Journal of the American Rural Health Association and the National Rural Health Care Association, 25*(4), 399-406. doi:10.1111/j.1748-0361.2009.00251.x

Hiott, A. E., Grzywacz, J. G., Davis, S. W., Quandt, S. A., & Arcury, T. A. (2008). Migrant farmworker stress: Mental health implications. *The Journal of Rural Health : Official Journal of the American Rural Health Association and the National Rural Health Care Association, 24*(1), 32-39. doi:10.1111/j.1748-0361.2008.00134.x

Hodgkenson, H. L. (1990). *The demographics of American Indians: One percent of the people; fifty percent of the diversity.* Washington, DC: Institute for Educational Leadership, Inc.: Center for Demographic Policy.

Holt, C. L., Schulz, E., & Wynn, T. A. (2009). Perceptions of the religion--health connection among african americans in the southeastern united states: Sex, age, and urban/rural differences. *Health Education & Behavior : The Official Publication of the Society for Public Health Education, 36*(1), 62-80. doi:10.1177/1090198107303314

Howell, E., & McFeeters, J. (2008). Children's mental health care: Differences by race/ethnicity in urban/rural areas. *Journal of Health Care for the Poor and Underserved, 19*(1), 237-247. doi:10.1353/hpu.2008.0008

Humes, K.R., Jones, N.A., and Ramirez, R.R. (2011). Overview of Race and Hispanic Origin:2010: U.S. Census Briefs 2010. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, March 11, 2010. Publication No. C2010BR-02 http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf

Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academy Press.

Jameson, J. P. (2010). *Mental health services in rural areas: A multicomponent examination.* US: ProQuest Information & Learning). *Dissertation Abstracts International: Section B: The Sciences and Engineering, 70*(10-), 6555.

Jimenez, D. E., Alegria, M., Chen, C. N., Chan, D., & Laderman, M. (2010). Prevalence of psychiatric illnesses in older ethnic minority adults. *Journal of the American Geriatrics Society, 58*(2), 256-264. doi:10.1111/j.1532-5415.2009.02685.x

Kane, M., & DiBartolo, M. (2002). Complex physical and mental health needs of rural incarcerated women. *Issues in Mental Health Nursing, 23*(3), 209-229. doi:10.1080/016128402753542974

Kim, G., Loi, C. X. A., Chiriboga, D. A., Jang, Y., Parmelee, P., & Allen, R. S. (2011). Limited english proficiency as a barrier to mental health service use: A study of Latino and Asian immigrants with psychiatric disorders. *Journal of Psychiatric Research, 45*(1), 104-110. doi:10.1016/j.jpsychires.2010.04.031

Kogan, S. M., & Brody, G. H. (2010). Linking parenting and informal mentor processes to depressive symptoms among rural African American young adult men. *Cultural Diversity and Ethnic Minority Psychology, 16*(3), 299-306. doi:10.1037/a0018672

Kramer, T. L., Han, X., & Booth, B. M. (2009). Young adult, rural, African American stimulant users: Antecedents and vulnerabilities. *Journal of Ethnicity in Substance Abuse, 8*(4), 378-399. doi:10.1080/15332640903327393

Kulkarni, S. P., Baldwin, S., Lightstone, A. S., Gelberg, L., & Diamant, A. L. (2010). Is incarceration a contributor to health disparities? Access to care of formerly incarcerated adults. *Journal of Community Health: The Publication for Health Promotion and Disease Prevention, 35*(3), 268-274. doi:10.1007/s10900-010-9234-9

Kusmin, L. D. (2009). Rural America at a glance, 2009 Edition. *United States Department of Agriculture, Economic Research Service, EIB No. 59.* Retrieved on February 9, 2011 from http://www.ers.usda.gov/Publications/EIB59/EIB59.pdf.

Lafromboise, T.D. (1996). *American Indian life skills development curriculum.* Madison, WI: University of Wisconsin Press.

Lapp, C. A., Taft, L. B., Tollefson, T., Hoepner, A., Moore, K., & Divyak, K. (2010). Stress and coping on the home front: Guard and reserve spouses searching for a new normal. *Journal of Family Nursing, 16*(1), 45-67. doi:10.1177/1074840709357347

Levant, R. F., & Habben, C. (2003). The new psychology of men: Application to rural men. In B. H. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide.* (pp. 171-180). Washington, DC US: American Psychological Association. doi:10.1037/10489-013.

Linn, J. G., & Husaini, B. A. (1987). Determinants of psychological depression and coping behaviors of Tennessee farm residents. *Journal of Community Psychology, 15*(4), 503-512. doi:10.1002/1520-6629(198710)15:4<503::AID-JCOP2290150408>3.0.CO;2-7

Loury, S., & Kulbok, P. (2007). Correlates of alcohol and tobacco use among Mexican immigrants in rural North Carolina. *Family and Community Health, 30*(3), 247-256. doi:10.1097/01.FCH.0000277767.00526.f1

Lu, N., Samuels, M. E., Kletke, P. R., & Whitler, E. T. (2010). Rural-urban differences in health insurance coverage and patterns among working-age adults in Kentucky. *The Journal of Rural Health : Official Journal of the American Rural Health Association and the National Rural Health Care Association, 26*(2), 129-138. doi:10.1111/j.1748-0361.2010.00274.x

Lyons, J. A. (2003). Veterans health administration: Reducing barriers to access. In B. H. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide.* (pp. 217-229). Washington, DC US: American Psychological Association. doi:10.1037/10489-017

Mallett, C. A. (2010). An at-risk profile of probation supervised youthful offenders in a rural, Midwest county: Significant gender and race differences. *Juvenile and Family Court Journal, 61*(3), 1-12. doi:10.1111/j.1755-6988.2010.01043.x

Manfredi, L., Shupe, J., & Batki, S. L. (2005). Rural jail tele-psychiatry: A pilot feasibility study. *Telemedicine Journal and e-Health : The Official Journal of the American Telemedicine Association, 11*(5), 574-577. doi:10.1089/tmj.2005.11.574

Mateyoke-Scrivner, A., Webster, J. M., Staton, M., & Leukefeld, C. (2004). Treatment retention predictors of drug court participants in a rural state. *American Journal of Drug and Alcohol Abuse, 30*(3), 605-625. doi:10.1081/ADA-200032304

Mathew, L. (2010). Coping with shame of poverty: Analysis of farmers in distress. *Psychology and Developing Societies, 22*(2), 385-407. doi:10.1177/097133361002200207

McSparron, W. J. (2002). *Depression and help-seeking behavior of North Dakota farmers: The impact of the farm crisis.* (Unpublished Ph.D.).

Menke, R., & Flynn, H. (2009). Relationships between stigma, depression, and treatment in white and African American primary care patients. *The Journal of Nervous and Mental Disease, 197*(6), 407-411. doi:10.1097/NMD.0b013e3181a6162e

Morland, L. A., Greene, C. J., Rosen, C., Mauldin, P. D., & Frueh, B. C. (2009). Issues in the design of a randomized noninferiority clinical trial of telemental health psychotherapy for rural combat veterans with PTSD. *Contemporary Clinical Trials, 30*(6), 513-522. doi:10.1016/j.cct.2009.06.006

Mulder, P. L., Jackson, R., & Jarvis, S. (2010). Services in rural areas. In M. A. Becker (Ed.), *A public health perspective of women's mental health.* (pp. 313-333). New York, NY US: Springer Science + Business Media. doi:10.1007/978-1-4419-1526-9_16

Myers, H. F., & Rodriguez, N. Acculturation and physical health in racial and ethnic minorities.

Myers, L. L. (2010). Health risk behaviors among adolescents in the rural south: A comparison of race, gender, and age. *Journal of Human Behavior in the Social Environment, 20*(8), 1024-1037. doi:10.1080/10911359.2010.498675

Nadeem, E., Lange, J. M., & Miranda, J. (2009). Perceived need for care among low-income immigrant and U.S. born Black and Latina women with depression. *Journal of Women's Health, 18*(3), 369-375. doi:10.1089/jwh.2008.0898

National Advisory Committee on Rural Health (NACRH). *Sixth Annual Report to the Secretary of Health and Human Services.* Office of Rural Health Policy: December 1993.

National Advisory Committee on Rural Health and Human Services (NACRHHS). (2008). Twentieth Anniversary Report: The 2008 Report to the Secretary: Rural Health and Human Services Issues, April 2008. Retrieved on April 16, 2011 from http://www.hrsa.gov/advisorycommittees/rural/publications/index.html

National Center on Health Statistics (NCHS). (2001). *Suicide rates among persons 15 years of age and over by sex, region, and urbanization level, 1996–1998.* Hyattsville, MD: Centers for Disease Control and Prevention, National Center for Health Statistics.

National Institute of Mental Health. (2008). National Institute of Mental Health Strategic Plan. U.S. Department of Health and Human Services, National Institutes of Health: Rockville, MD. NIH Publication No. 08-6368.

National Partnership for Action. (2011). National Stateholder Strategy for Achieving Health Equity. Rockville, MD: U.S. Department of Health and Human Services, Office of Minority Health, (April, 2011).

Norman, S. (2006). The use of telemedicine in psychiatry. *Journal of Psychiatric and Mental Health Nursing, 13*(6), 771-777. doi:10.1111/j.1365-2850.2006.01033.x

Nosek, M. A., Hughes, R. B., & Robinson-Whelen, S. (2008). The complex array of antecedents of depression in women with physical disabilities: Implications for clinicians. *Disability and Rehabilitation, 30*(3), 174-183. doi:10.1080/09638280701532219

O'Reilly, M., Taylor, H. C., & Vostanis, P. (2009). "Nuts, schiz, psycho": An exploration of young homeless people's perceptions and dilemmas of defining mental health. *Social Science and Medicine, 68*(9), 1737-1744. doi:10.1016/j.socscimed.2009.02.033

Ozer, E. J., Fernald, L. C. H., & Roberts, S. C. (2008). Anxiety symptoms in rural Mexican adolescents. *Social Psychiatry and Psychiatric Epidemiology, 43*(12), 1014-1023. doi:10.1007/s00127-008-0473-3

Pavkov, T. W., Travis, L., Fox, K. A., King, C. B., & Cross, T. L. (2010). Tribal youth victimization and delinquency: Analysis of youth risk behavior surveillance survey data. *Cultural Diversity and Ethnic Minority Psychology, 16*(2), 123-134. doi:10.1037/a0018664

Peen, J., Schoevers, R. A., Beekman, A. T., & Dekker, J. (2010). The current status of urban-rural differences in psychiatric disorders. *Acta Psychiatrica Scandinavica, 121*(2), 84-93. doi:10.1111/j.1600-0447.2009.01438.x

Peterson, L. E., & Litaker, D. G. (2010). County-level poverty is equally associated with unmet health care needs in rural and urban settings. *The Journal of Rural Health, 26*(4), 373-382. doi:10.1111/j.1748-0361.2010.00309.x

Polaha, J., Dalton, W. T.,3rd, & Allen, S. (2011). The prevalence of emotional and behavior problems in pediatric primary care serving rural children. *Journal of Pediatric Psychology,* doi:10.1093/jpepsy/jsq116

Preston, D. B., D'Augelli, A. R., Kassab, C. D., & Starks, M. T. (2007). The relationship of stigma to the sexual risk behavior of rural men who have sex with men. *AIDS Education and Prevention, 19*(3), 218-230. doi:10.1521/aeap.2007.19.3.218

Price, S. K., & Proctor, E. K. (2009). A rural perspective on perinatal depression: Prevalence, correlates, and implications for help-seeking among low-income women. *The Journal of Rural Health : Official Journal of the American Rural Health Association and the National Rural Health Care Association, 25*(2), 158-166. doi:10.1111/j.1748-0361.2009.00212.x

Primm, A. B., Osher, F. C., & Gomez, M. B. (2005). Race and ethnicity, mental health services and cultural competence in the criminal justice system: Are we ready to change? *Community Mental Health Journal, 41*(5), 557-569. doi:10.1007/s10597-005-6361-3

Pullmann, M. D., & Craig, A. H. (2009). Community determinants of substance abuse treatment referrals from juvenile courts: Do rural youths have equal access? *Journal of Child and Adolescent Substance Abuse, 18*(4), 359-378. doi:10.1080/10678280903185518

Quintero, G. A., Lilliott, E., & Willging, C. (2007). Substance abuse treatment provider views of "culture": Implications for behavioral health care in rural settings. *Qualitative Health Research, 17*(9), 1256-1267. doi:10.1177/1049732307307757

Reschovsky, J. D., & Staiti, A. B. (2005). Access and quality: Does rural America lag behind? *Health Affairs (Project Hope), 24*(4), 1128-1139. doi:10.1377/hlthaff.24.4.1128

Richardson, L. K., Frueh, B. C., Grubaugh, A. L., Egede, L., & Elhai, J. D. (2009). Current directions in videoconferencing tele-mental health research. *Clinical Psychology: Science and Practice, 16*(3), 323-338. doi:10.1111/j.1468-2850.2009.01170.x

Richardson, L. P., Lewis, C. W., Casey-Goldstein, M., McCauley, E., & Katon, W. (2007). Pediatric primary care providers and adolescent depression: A qualitative study of barriers to treatment and the effect of the black box warning. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 40*(5), 433-439. doi:10.1016/j.jadohealth.2006.12.006

Riva, M., Bambra, C., Curtis, S., & Gauvin, L. (2010). Collective resources or local social inequalities? examining the social determinants of mental health in rural areas. *European Journal of Public Health,* doi:10.1093/eurpub/ckq064

Robbins, V., Dollard, N., Armstrong, B. J., Kutash, K., & Vergon, K. S. (2008). Mental health needs of poor suburban and rural children and their families. *Journal of Loss and Trauma, 13*(2-3), 94-122. doi:10.1080/15325020701769170

Robiner, W. N., & Crew, D. P. (2000). Rightsizing the workforce of psychologist in health care: Trends from licensing boards, training programs, and managed care. *Professional Psychology: Research and Practice, 31*(3), 245-263. doi:10.1037/0735-7028.31.3.245

Rost, K., Fortney, J., Fischer, E., & Smith, J. (2002). Use, quality, and outcomes of care for mental health: The rural perspective. *Medical Care Research and Review, 59*(3), 231-265. doi:10.1177/1077558702059003001

Rueter, M. A., Holm, K. E., Burzette, R., Kim, K. J., & Conger, R. D. (2007a). Mental health of rural young adults: Prevalence of psychiatric disorders, comorbidity, and service utilization. *Community Mental Health Journal, 43*(3), 229-249. doi:10.1007/s10597-007-9082-y

Rueter, M. A., Holm, K. E., Burzette, R., Kim, K. J., & Conger, R. D. (2007b). Mental health of rural young adults: Prevalence of psychiatric disorders, comorbidity, and service utilization. *Community Mental Health Journal, 43*(3), 229-249. doi:10.1007/s10597-007-9082-y

Ryan, K., Forehand, R., Solomon, S., & Miller, C. (2008). Depressive symptoms as a link between barriers to care and sexual risk behavior of HIV-infected individuals living in non-urban areas. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV, 20*(3), 331-336. doi:10.1080/09540120701660338

Safran, M. A., Mays, R. A., Jr., Huang, L. N., Mc Cuan, R., Pham, P. K., Fisher, S. K., . . . Trachtenberg, A. (2009). Mental health disparities. *American Journal of Public Health, 99*(11), 1962-1966. doi:10.2105/AJPH.2009.167346

Sah, S. L. (2000). *Cross-cultural determinants of depression among southeast asian indian immigrants in the united states. Dissertation Abstracts International: Section B: The Sciences & Engineering, 60*(10-B), 5232. . (2000-95008-082)

Salgado De Snyder, V. N., Diaz-Perez, M. D. J., & Ojeda, V. D. (2000). The prevalence of nervios and associated symptomatology among inhabitants of mexican rural communities. *Culture, Medicine and Psychiatry, 24*(4), 453-470.

Sammons, M. T. (2003). Nonphysician prescribers in rural settings: Unique roles and opportunities for enhanced mental health care. In B. H. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide.* (pp. 121-131). Washington, DC US: American Psychological Association. doi:10.1037/10489-009

Schoeneberger, M. L., Leukefeld, C. G., Hiller, M. L., & Godlaski, T. (2006). Substance abuse among rural and very rural drug users at treatment entry. *American Journal of Drug and Alcohol Abuse, 32*(1), 87-110. doi:10.1080/00952990500328687

Severson, M., Postmus, J. L., & Berry, M. (2009). Women's experiences of victimization and survival. *Journal of Sociology and Social Welfare, 36*(2), 145-167.

Shim, R. S., Compton, M. T., Rust, G., Druss, B. G., & Kaslow, N. J. (2009). Race-ethnicity as a predictor of attitudes toward mental health treatment seeking. *Psychiatric Services, 60*(10), 1336-1341. doi:10.1176/appi.ps.60.10.1336

Shore, J. H., Savin, D., Novins, D., & Manson, S. M. (2006). Cultural aspects of telepsychiatry. *Journal of Telemedicine and Telecare, 12*(3), 116-121. doi:10.1258/135763306776738602

Silva-Martinez, E. (2010). *Understanding from the inside: A critical ethnographic view of help-seeking among battered Latinas in the Midwest of the United States.* ProQuest Information & Learning). *Dissertation Abstracts International Section A: Humanities and Social Sciences, 70*(8-) Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=2010-99031-204&site=ehost-live; Rural AND Mental Health 2010-2011. (2010-99031-204)

Simmons, L. A., & Havens, J. R. (2007). Comorbid substance and mental disorders among rural americans: Results from the national comorbidity survey. *Journal of Affective Disorders, 99*(1-3), 265-271. doi:10.1016/j.jad.2006.08.016

Singh, G. K., & Siahpush, M. (2002). Increasing rural--urban gradients in US suicide mortality, 1970-1997. *American Journal of Public Health, 92*(7), 1161-1167. doi:10.2105/AJPH.92.7.1161

Smalley, K. B., Yancey, C. T., Warren, J. C., Naufel, K., Ryan, R., & Pugh, J. L. (2010). Rural mental health and psychological treatment: A review for practitioners. *Journal of Clinical Psychology, 66*(5), 479-489. doi:10.1002/jclp.20688

Smith, J., Easton, P. S., Saylor, B. L., & Elders from the Alaska Villages of Buckland and Deering. (2009). Inupiaq elders study: Aspects of aging among male and female elders. *International Journal of Circumpolar Health, 68*(2), 182-196.

Stamm, B. H. (2003). Bridging the rural-urban divide with telehealth and telemedicine. In B. H. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide.* (pp. 145-155). Washington, DC US: American Psychological Association. doi:10.1037/10489-011

Stansfeld, S., Weich, S., Clark, C., Boydell, J., & Freeman, H. (2008). Urban-rural differences, socio-economic status and psychiatric disorder. In S. Stansfeld (Ed.), *The impact of the environment on psychiatric disorder.* (pp. 80-126). New York, NY US: Routledge/Taylor & Francis Group. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=2006-20288-004&site=ehost-live; Rural AND Mental Health between 1970 an 2011 in English Human and Professional & Research Peer Reviewed

Staton, M., Leukefeld, C., & Logan, T. K. (2001). Health service utilization and victimization among incarcerated female substance users. *Substance use and Misuse, 36*(6-7), 701-716. doi:10.1081/JA-100104086

Staton-Tindall, M., Duvall, J. L., Leukefeld, C., & Oser, C. B. (2007). Health, mental health, substance use, and service utilization among rural and urban incarcerated women. *Women's Health Issues, 17*(4), 183-192. doi:10.1016/j.whi.2007.02.004

Thomas, K. C., Ellis, A. R., Konrad, T. R., Holzer, C. E., & Morrissey, J. P. (2009). County-level estimates of mental health professional shortage in the United States. *Psychiatric Services (Washington, D.C.), 60* (10), 1323-1328. doi:10.1176/appi.ps.60.10.1323

Thorndyke, L. E. (2005). Rural women's health: A research agenda for the future. *Women's Health Issues, 15* (5), 200-203. doi:10.1016/j.whi.2005.07.004

Tseng, K. -., Hemenway, D., Kawachi, I., Subramanian, S. V., & Chen, W. J. (2008). Travel distance and the use of inpatient care among patients with schizophrenia. *Administration and Policy in Mental Health and Mental Health Services Research, 35*(5), 346-356. doi:10.1007/s10488-008-0175-x

Tudiver, F., Edwards, J. B., & Pfortmiller, D. T. (2010). Depression screening patterns for women in rural health clinics. *The Journal of Rural Health, 26*(1), 44-50. doi:10.1111/j.1748-0361.2009.00264.x

Turner, S. L., & Pope, M. (2009). Counseling with North America's indigenous people. In J. Carlson (Ed.), *Cross cultural awareness and social justice in counseling.* (pp. 185-209). New York, NY US: Routledge/Taylor & Francis Group. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=2007-18821-009&site=ehost-live

U.S. Department of Education. (2005). Status and trends in the education of American Indians and Alaska Natives: Indicator1.4: Age distribution of the population. National Center for Educational Statistics, retrieved on February 22, 2011 from: http://nces.ed.gov/pubs2005/nativetrends/ind_1_4.asp.

U.S. Department of Health and Human Services (2003). New Freedom Commission on Mental Health. Achieving the Promise: Transforming Mental Health Care in America. Final report. Rockville, Md. Pub. No. SMA-03-3832.

U.S. Department of Health and Human Services. (2011). HHS Action Plan to Reduce Racial and Ethnic Health Disparities: A Nation Free of Disparities in Health and Health Care. Rockville, MD: DHHS, Office of Minority Health.

Van Gundy, K. (2006). Substance abuse in rural and small town American. *Reports on Rural America*. Durham, NH: Carsey Institute, University of New Hampshire.

Wagenfeld, M.O., Murray, J.D., Mohatt, D.F., DeBruyn, J.C., (1994) Mental Health and Rural America: 1980-1993, Washington, DC: U.S. Government Printing Office

Wagenfeld, M., Murray, J.D., Mohatt, D.F., & De Bruyn, J. (1994). *Mental health and rural America 1980–1993: An overview and annotated bibliography.* Rockville, MD: Office of Rural Health Policy, Health Resources and Services Administration.

Walker, R., Shannon, L., & Logan, T. K. (2010). Sleep loss and partner violence victimization. *Journal of Interpersonal Violence,* doi:10.1177/0886260510372932

Wallace, A. E., Lee, R., MacKenzie, T. A., West, A. N., Wright, S., Booth, B. M., . . . Weeks, W. B. (2010). A longitudinal analysis of rural and urban veterans' health-related quality of life. *The Journal of Rural Health, 26*(2), 156-163. doi:10.1111/j.1748-0361.2010.00277.x

Wallace, A. E., MacKenzie, T. A., Wright, S. M., & Weeks, W. B. (2010). A cross-sectional, multi-year examination of rural and urban veterans' administration users: 2002-2006. *Military Medicine, 175*(4), 252-258.

Wallace, A. E., MacKenzie, T. A., Wright, S. M., & Weeks, W. B. (2010). A cross-sectional, multi-year examination of rural and urban veterans' administration users: 2002-2006. *Military Medicine, 175*(4), 252-258. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,uid,cookie&db=psyh&AN=2010-07766-006&site=ehost-live

Wallace, A. E., Weeks, W. B., Wang, S., Lee, A. F., & Kazis, L. E. (2006). Rural and urban disparities in health-related quality of life among veterans with psychiatric disorders. *Psychiatric Services, 57*(6), 851-856. doi:10.1176/appi.ps.57.6.851

Wang, P. S., Lane, M., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Twelve-month use of mental health services in the United States: Results from the national comorbidity survey replication. *Archives of General Psychiatry, 62*(6), 629-640. doi:10.1001/archpsyc.62.6.629

West, A., & Weeks, W. B. (2006). Physical and mental health and access to care among nonmetropolitan veterans health administration patients younger than 65 years. *The Journal of Rural Health : Official Journal of the American Rural Health Association and the National Rural Health Care Association, 22*(1), 9-16. doi:10.1111/j.1748-0361.2006.00014.x

Westermeyer, J., Canive, J., Thuras, P., Thompson, J., Crosby, R. D., & Garrard, J. (2009). A comparison of substance use disorder severity and course in American Indian male and female veterans. *The American Journal on Addictions / American Academy of Psychiatrists in Alcoholism and Addictions, 18*(1), 87-92. doi:10.1080/10550490802544912

Westermeyer, J.Acculturation: Advances in theory, measurement, and applied research.

Whitener, L. (1998). Community and migrant health centers. *Journal of Rural Health, 14*(1), 73-76.

Wilkerson, J. A., Yamawaki, N., & Downs, S. D. (2009). Effects of husbands' migration on mental health and gender role ideology of rural Mexican women. *Health Care for Women International, 30*(7), 614-628. doi:10.1080/07399330902928824

Willging, C. E., Salvador, M., & Kano, M. (2006a). Pragmatic help seeking: How sexual and gender minority groups access mental health care in a rural state. *Psychiatric Services (Washington, D.C.), 57*(6), 871-874. doi:10.1176/appi.ps.57.6.871

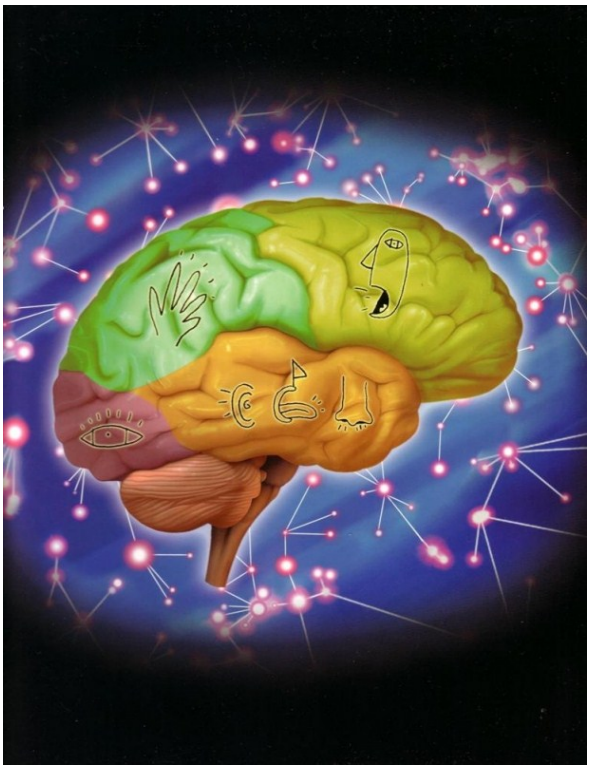
Willging, C. E., Salvador, M., & Kano, M. (2006b). Unequal treatment: Mental health care for sexual and gender minority groups in a rural state. *Psychiatric Services, 57*(6), 867-870. doi:10.1176/appi.ps.57.6.867

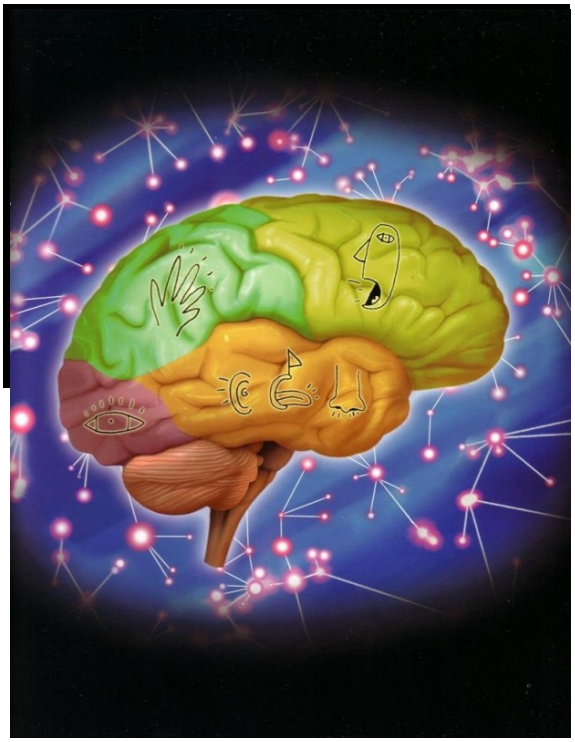
Wodahl, E. J. (2006). The challenges of prisoner reentry from a rural perspective. *Western Criminology Review, 7*(2), 32-47.

Xu, S., Rost, K., Dong, F., & Dickinson, L. M. (2011). Stakeholder benefit from depression disease management: Differences by rurality? *The Journal of Behavioral Health Services & Research, 38*(1), 114-121. doi:10.1007/s11414-009-9204-0

Yellowlees, P., Marks, S., Hilty, D., & Shore, J. H. (2008). Using e-health to enable culturally appropriate mental healthcare in rural areas. *Telemedicine and e-Health, 14*(5), 486-492. doi:10.1089/tmj.2007.0070

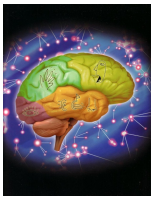
Ziller, E. C., Anderson, N. J., & Coburn, A. F. (2010). Access to rural mental health services: Service use and out-of-pocket costs. *The Journal of Rural Health, 26*(3), 214-224. doi:10.1111/j.1748-0361.2010.00291.x





Appendix A

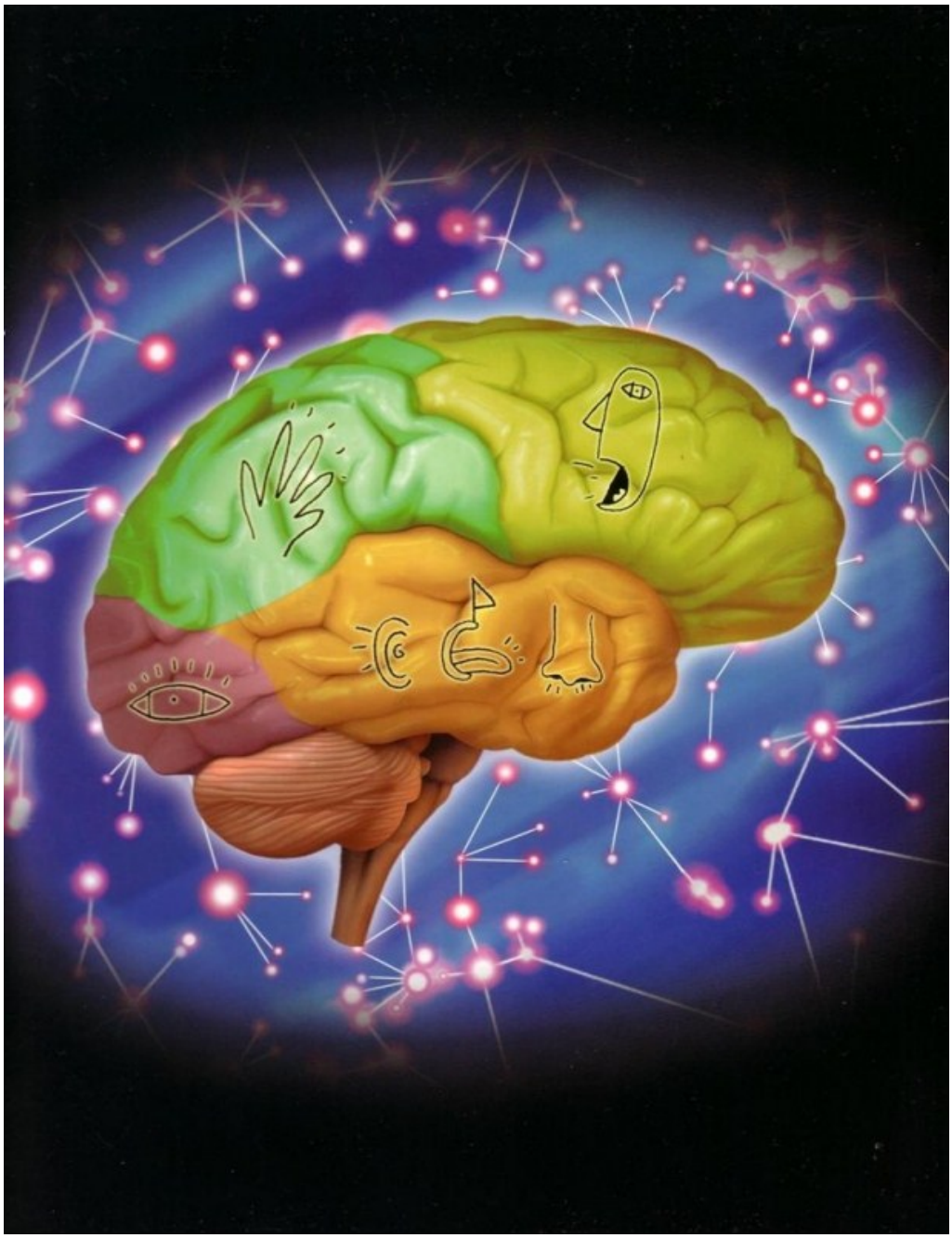
Acronyms

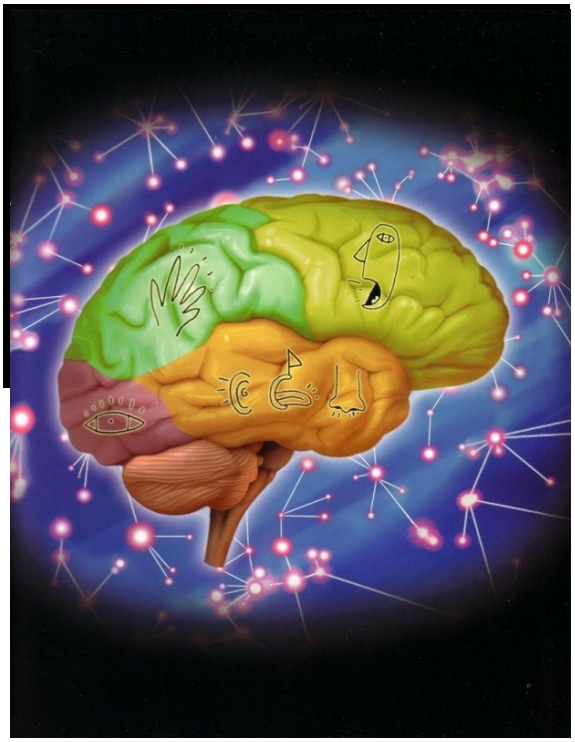


Acronyms

ACRONYM	NAME
AI/AN	American Indian and Alaska Native
AHRQ	Agency for Healthcare Research and Quality, Department of Health and Human Services
APN	Advanced Practice Nurses
BHPr	Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services
BRFSS	United States Behavioral Risk Factor Surveillance System
CAH	Critical Access Hospitals
CER	Clinical Effectiveness Research
CPES	NIMH Collaborative Psychiatric Epidemiological Studies
DHHS	Department of Health and Human Services
DSL	Digital Subscriber Line
ED	Hospital Emergency Departments
ERS	Economic Research Service, United States Department of Agriculture
FBOP	Federal Bureau of Prisons
FCHRD	Federal Collaboration on Health Disparities Research
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HRSA	Health Resources and Services Administration, Department of Health and Human Services
IHS	Indian Health Service
IOM	Institute of Medicine
LGBT	Lesbian, Gay, Bisexual, Transgender
MHPSA	Mental Health Professional Shortage Areas
MHSG	Mental Health Science Group of the Federal Health Disparities Collaborative
NACRH	National Advisory Committee on Rural Health
NARCH	Native American Research Centers for Health
NCFC	National Center for Frontier Communities
NCS-R	National Comorbidity Study Replication
NESARC	National Epidemiological Survey of Alcohol and Related Conditions
NIGMS	National Institute of General Medical Services, National Institutes of Health, Department of Health and Human Services
NIH	National Institutes of Health, Department of Health and Human Services
NIMH	National Institute of Mental Health, National Institutes of Health, Department of Health and Human Services
NLAAS	National Latino and Asian American Study
NSAL	National Study of American Life
OAT	Office for the Advancement of Telehealth
OMB	Office of Management and Budget

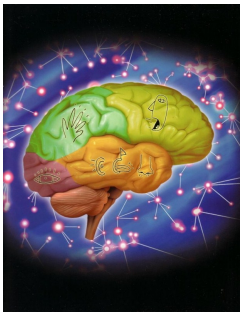
ACRONYM	NAME
ORH	Office of Rural Health, Veterans Health Administration
ORHP	Office of Rural Health Policy, Health Resources and Services Administration
ORMH	Office of Rural Mental Health, National Institute of Mental Health
PCMH	Patient-Centered Medical Home
PCP	Primary Care Physicians
RUCA	Rural Urban Commuting Area
UA	Urbanized Area
UC	Urban Cluster
USDA	United States Department of Agriculture
VHA	Veterans Health Administration
WWAMI	Washington, Wyoming, Alaska, Montana, Idaho





Appendix B

Glossary



Glossary

TERM	DEFINITION
Access	Availability of services, transportation to and from services, and affordability of services.
Availability	Services and providers available to those with need of the services.
CAH	Critical Access Hospital
Census Tract	Small, relatively permanent statistical subdivisions of a county. Delineated to be relatively homogeneous units with respect to characteristics, economic status, and living conditions.
CER	Comparative Effectiveness Research is defined as a rigorous evaluation of the impact of different options that are available for treating a given medical condition for a particular set of patients. Such a study may compare similar treatments, such as competing drugs, or it may analyze very different approaches, such as surgery and drug therapy.
CHC	Community Health Clinic
FQHC	Federally Qualified Health Center
Frontier	Areas that are sparsely populated rural areas, isolated from population centers and services. Sometimes defined simplistically as places having a population density of six or fewer people per square mile, other factors should be considered that address isolation of a community. Preferred definitions are more complex and address isolation by distance in miles and travel time in minutes to services. Some of the issues to be considered include population density, distance from a population center or specific service, travel time to reach a population center or service, functional association with other places, availability of paved roads, and seasonal changes in access to services. RUCA Codes of 10 will be used for this publication.
Homeless	If a person indicates they do not have a permanent residence they are defined as homeless if they meet one of the following criteria: Slept in limited or no shelter for any length of time Slept in shelters or missions operated by religious organizations or public agencies that serve homeless people and charge either no or a minimal fee Slept in inexpensive hotels or motels where the actual length of stay or intent to stay was 45 days or fewer Slept in other unique situations where the actual length of stay or intent to stay was 45 days or fewer, including family and friends for short periods of time.
Island	A land area surrounded by water and remaining above sea level during high tide.
Isolated	Also known as frontier. Small or isolated rural areas include small towns with populations of 2,500 to 9,999 persons and their surrounding areas. (HRSA)
Manualized	Detailed manual for a specific treatment approach that gives step-by-step process for conducting treatment.

<table>
<tr><th>TERM</th><th>DEFINITION</th></tr>
<tr><td>Mental Health Disparity</td><td>The National Institute of Mental Health (NIMH), Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Women's Health (OWH), National Institute of Corrections (NIC) and Centers for Disease Control and Prevention (CDC) have their own definitions of health disparities. The CDC definition is the most unifying of these agency-specific definitions. CDC considers mental health disparities as disparities present within the field of public health, health systems, and society. Further it describes mental health disparities as often falling into one of these three categories: 1) disparities between the attention given mental health and that given other public health issues of comparable magnitude, 2) disparities between the health of persons with mental illness as compared with that of those without, or 3) disparities between populations with respect to mental health and the quality, accessibility, and outcomes of mental health care. The CDC often includes social determinants such as employment, income, housing, and so on, which can influence mental health and access to care.</td></tr>
<tr><td>Metropolitan</td><td>Urban Area with a population over 50,000.</td></tr>
<tr><td>Mental Health Professional Shortage Area (MHPSA)</td><td>MHPSA designations identify areas that do not have an adequate supply of mental health professionals to meet the needs of their population. Providers include psychiatrists, psychologists, social workers, advanced practice psychiatric nurses, and marriage and family therapists. Current MHPSAs are based upon geographic areas (35%), population groups (3%), and facilities (62%): A geographic area is designated when the population-to-provider ratio exceeds given thresholds.

General Geographic Area — Psychiatrists Only — Core MH Providers
Psychiatrist & Core Rations — 20,000:1 — 6,000:1
Core Ration Only — — 9,000:1
Psychiatrist Ration Only — 30,000:1 —
High Needs Geographic Area
Psychiatrist & Core Rations — 15,000:1 — 4,500:1
Core Ration Only — — 6,000:1
Psychiatrist Ration Only — 20,000:1 —

A population group designation is obtained when barriers are documented for a particular group's access to providers.

Need Designation

20% population < poverty level

Youth (<18 years):adult (18-64 years) >0.6

Elderly (>64 years): adult (18-64 years) >.25

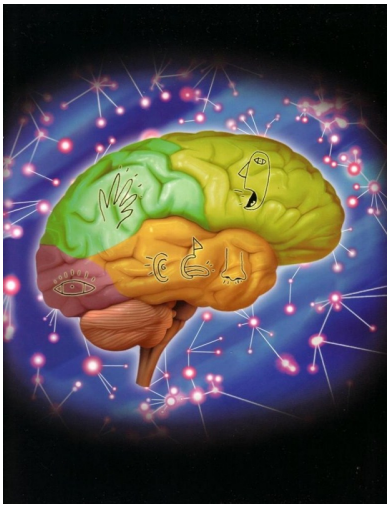
High alcoholism rate (worst quartile in nation, region, or state)

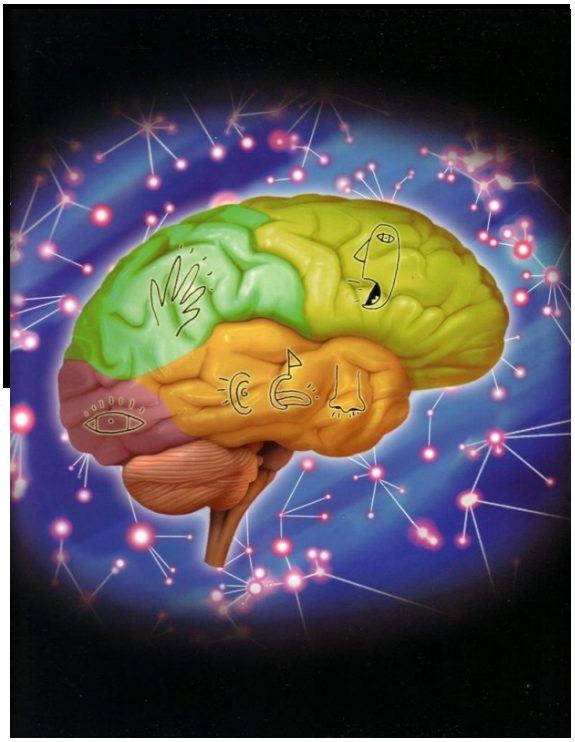
High substance abuse rate (worst quartile in nation, region, or state)

A facility designation is obtained when a facility documents insufficient staff capacity to meet the needs of clientele.</td></tr>
</table>

TERM	DEFINITION
Micropolitan	Urban Area with a population between 10,000 and 49,999.
Non-Metro	Areas not qualifying as metropolitan or micropolitan.
Patient Centered Medical Home (PCMH)	Patient-centered medical home is an AHRQ definition of a medical home and is a way to improve healthcare in America by transforming how primary care is organized and delivered. PCMH delivers the core functions of primary health care. Patient-centered: the PCMH provides primary health care that is relationship-based with an orientation toward the whole person. Partnering with patients and families requires understanding and respecting the patient's unique needs, culture, values, and preferences. It supports patients learning to manage and organize their own care at the level they choose. The patient is a core member of the care team. Comprehensive Care: PCMH is accountable for meeting the large majority of each patient's physical and mental healthcare needs including prevention and wellness, acute care, and chronic care. It utilizes a team of care providers including physicians, advanced practice nurses, physician assistants, nurses, pharmacists, nutritionists, social workers, educators, and care coordinators. The team may be in one geographic area or virtual. Coordinated Care: PCMH coordinates care across all elements of the broader healthcare system, including specialty care, hospitals, home health care, and community services and supports. These are especially critical during transitions between care sites. Superb access to care: PCMH delivers accessible services with shorter waiting times for urgent needs, enhanced in-person hours, around-the-clock telephone or electronic access to a member of the care team, and alternative methods of care such as e-mail and telephone. Systems-based approach to quality and safety: PCMH demonstrates commitment to quality and quality improvement by ongoing engagement in activates such as using evidence-based medicine and clinical decision-support tools to guide shared decision making, engaging in performance measurement. http://www.pcmh.ahrq.gov/portal/server.pt/community/pcmh__home/1483/what_is_pcmh_
Quality	The Institute of Medicine (IOM) recommended six priority areas for improvement of patient care they included: safe, timely, effective, efficient, patient-centered, and equitable.(IOM, 2001)
Remote	Also known as frontier. The RUCAs and travel times and distances can be used together to create needed definitions of remote and isolated ZIPs.

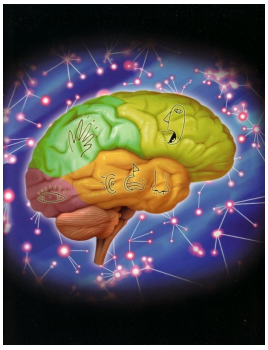
TERM	DEFINITION
Rural	Three government agencies have definitions of rural in wide use: 1) U.S. Census Bureau, 2) Office of Management and Budget, and 3) Economic Research Services of the U.S. Department of Agriculture. Census Bureau urban-rural classification is a delineation of geographical areas, identifying both individual urban areas and rural areas of the nation. "Rural" encompasses all population, housing, and territory NOT included within an urban area. Office of Management and Budget (OMB) defines metropolitan (>50,000) statistical areas or metro areas and micropolitan (10,000-49,999) areas with rural being anything outside those areas. U.S. Department of Agriculture's Economic Research Service (ERS) and U.S. Department of Health and Human Services'(HHS) Health Resources and Services Administration (HRSA) use RUCA codes to define rural.
Rural Urban Commuting Area (RUCA)	*Four category classification, Census Division. I*n these maps, the 33 RUCA codes are aggregated into four categories: urban, large rural, small rural, and isolated. The classification is as follows: urban: 1.0, 1.1, 2.0, 2.1, 3.0, 4.1, 5.1, 7.1, 8.1, 10.1; large rural: 4.0, 4.2, 5.0, 5.2, 6.0, 6.1; small rural: 7.0, 7.2, 7.3, 7.4, 8.0, 8.2, 8.3, 8.4, 9.0, 9.1, 9.2; isolated: 10.0, 10.2, 10.3, 10.4, 10.5, 10.6.
Small Town	Urban cluster between 2,500 and 9,999 population.
Special Population	Ethnic and racial minority groups designated by OMB standards, the elderly, low-income, low-literate, disabled, and rural populations. Sometimes medically underserved are also included.
Uninsured	Those without health insurance or without enough health insurance.
Urban Area	Densely settled core of census tracts and/or census blocks that meet minimum population density requirements along with adjacent territory containing non-residential urban land. The territory identified must encompass at least 2,500 people, at least 1,500 residing outside institutional group quarters. Two types UA and UC.
Urbanized Area (UA)	Cores of 50,000 or more people;
Urban Cluster (UC)	Cores of at least 2,500 and less than 50,000 people.





Appendix C

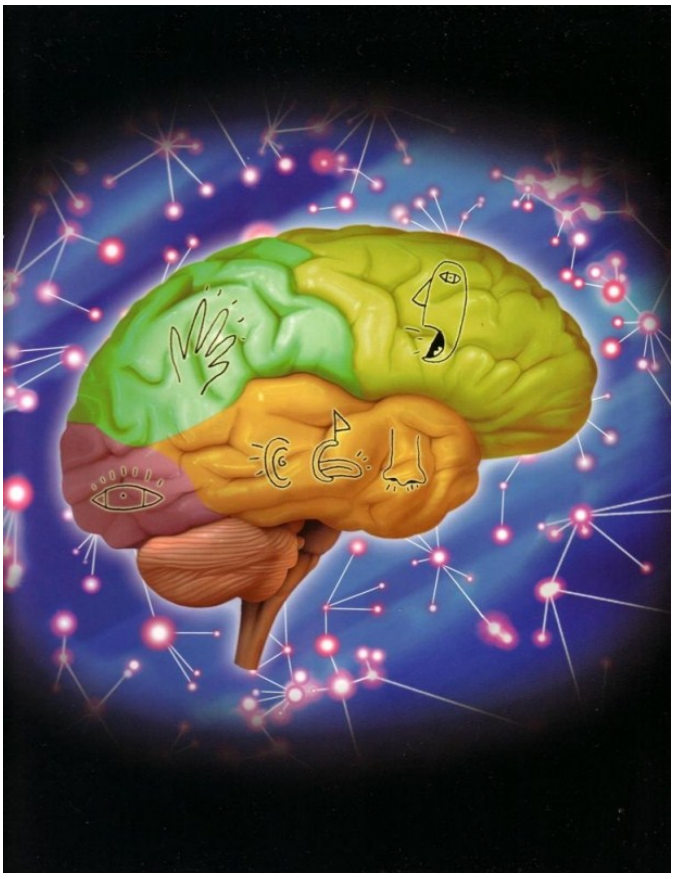
Search Terms

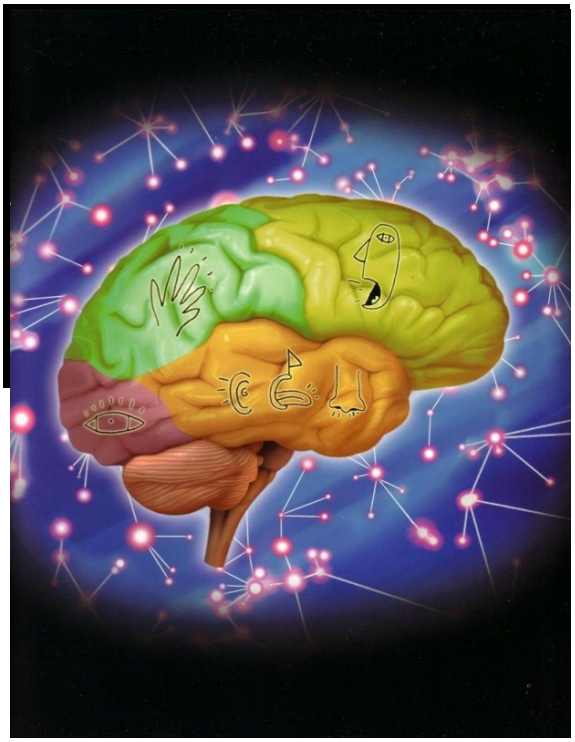


Search Terms

Database	Terms	Articles
PsychINFO	Rural AND Mental Health	2251
	Narrowed to Peer Reviewed between 1970-2011	1863
	Rural Environments AND Mental Health AND Mental Health Services	1344
	English AND Human AND Professional & Research	159
	Mental Health AND Licensure	246
	Narrowed by English, Human, Professional & Research	5
	Mental Health AND Licensing	414
	AND Interstate	1
	AND Compact	1
	AND States	55
	Mental Health AND Health Disparities	177
	Rural AND Mental Health AND Services	1291
	Limited to English AND Human	546
	Limited to 1970-2011	536
	Peer Reviewed Journals AND Books	444
PubMED	Rural AND Mental Health	3607
	Limited to English AND Human	3043
	Limited to 1970-2011	3016
	Limited to Clinical Trial, Meta-Analysis, Practice Guideline, Randomized Controlled Trial	183
	Mental Health AND Licensure	180
	Limited to English AND Human	159
	Limited to 1970-2011	159
	Limited to Clinical Trial, Meta-Analysis, Practice Guideline, Randomized Controlled Trial	2
	Mental Health AND Licensing	231
	Limited to English AND Human	198
	Limited to 1970-2011	198
	Limited to Clinical Trial, Meta-Analysis, Practice Guideline, Randomized Con-	4

PUBMED	Mental Health AND Health Disparities	1004
	Limited to English AND Human	911
	Limited to 1970-2011	911
	Limited to Clinical Trial, Meta-Analysis, Practice Guideline, Randomized Con-	43
	Rural AND Mental Health AND Services	1788
	Limited to English AND Human	1568
	Limited to 1970-2011	1552
	Limited to Clinical Trial, Meta-Analysis, Practice Guideline, Randomized Con-	96
SCOPUS	Rural AND Mental Health	4785
	1970-present	4701
	Excluded International Journals	4694
	Excluded Australasian Psychiatry	4605
	Excluded Australian Journal of Rural Health	4480
	Mental Health AND Licensure	224
	Mental Health AND Licensing	290
	Mental Health AND Health Disparities	1692
	Rural AND Mental Health AND Services	2353
	Excluded non-U.S. Journals	717





Appendix D

Figures

1. Rural U.S. by Counties

2. Frontier defined as remote areas

3. Mental Health Professional Shortage Areas

4. U.S. Poverty rates by county

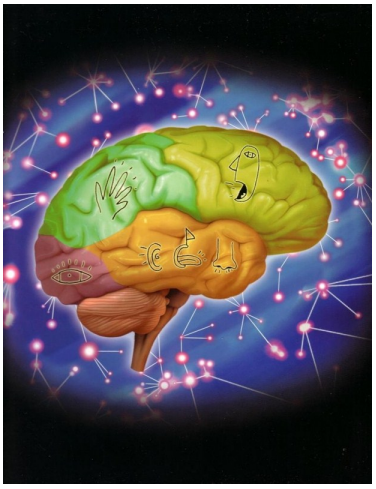
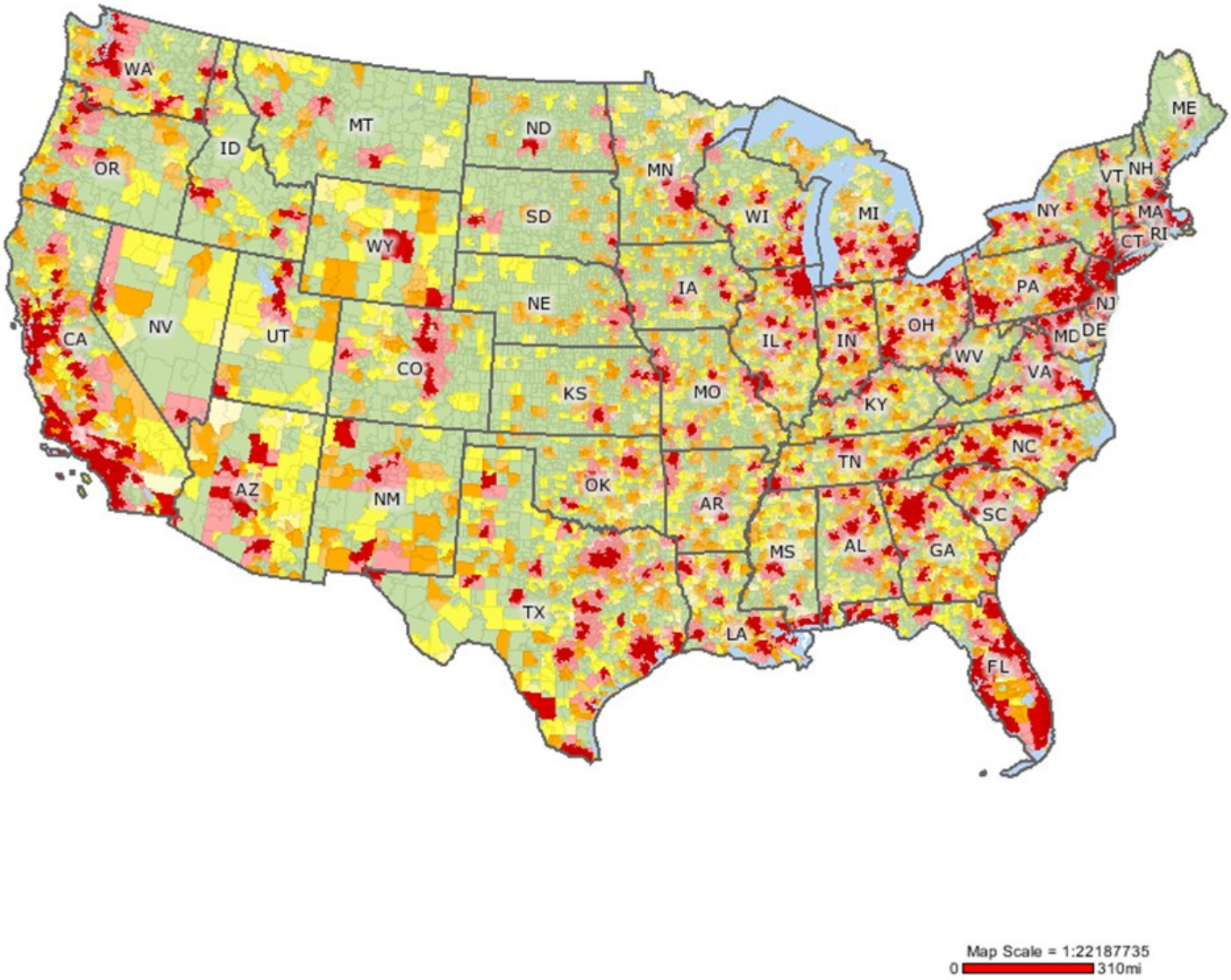


Figure 1. Rural U.S. by counties.



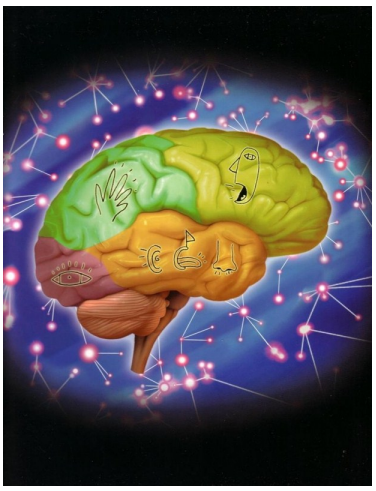
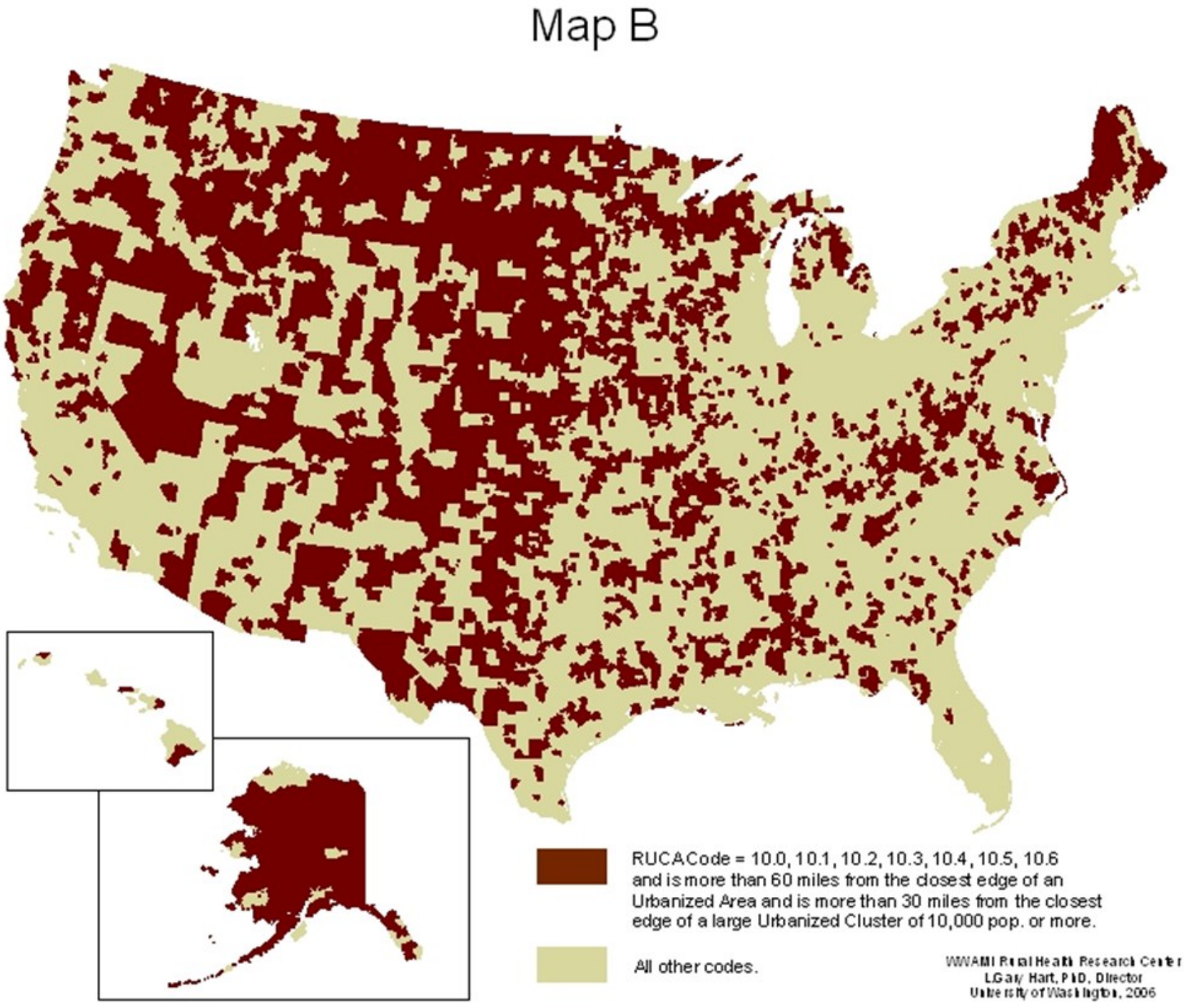


Figure 2. Frontier defined as remote areas by RUCA codes.



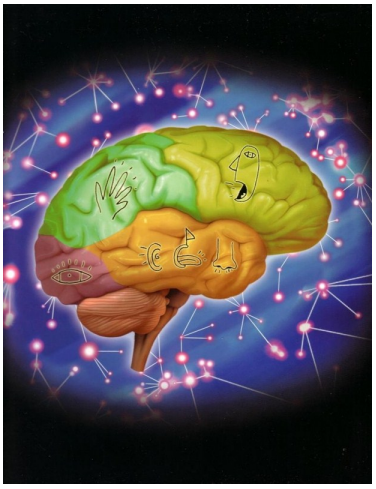
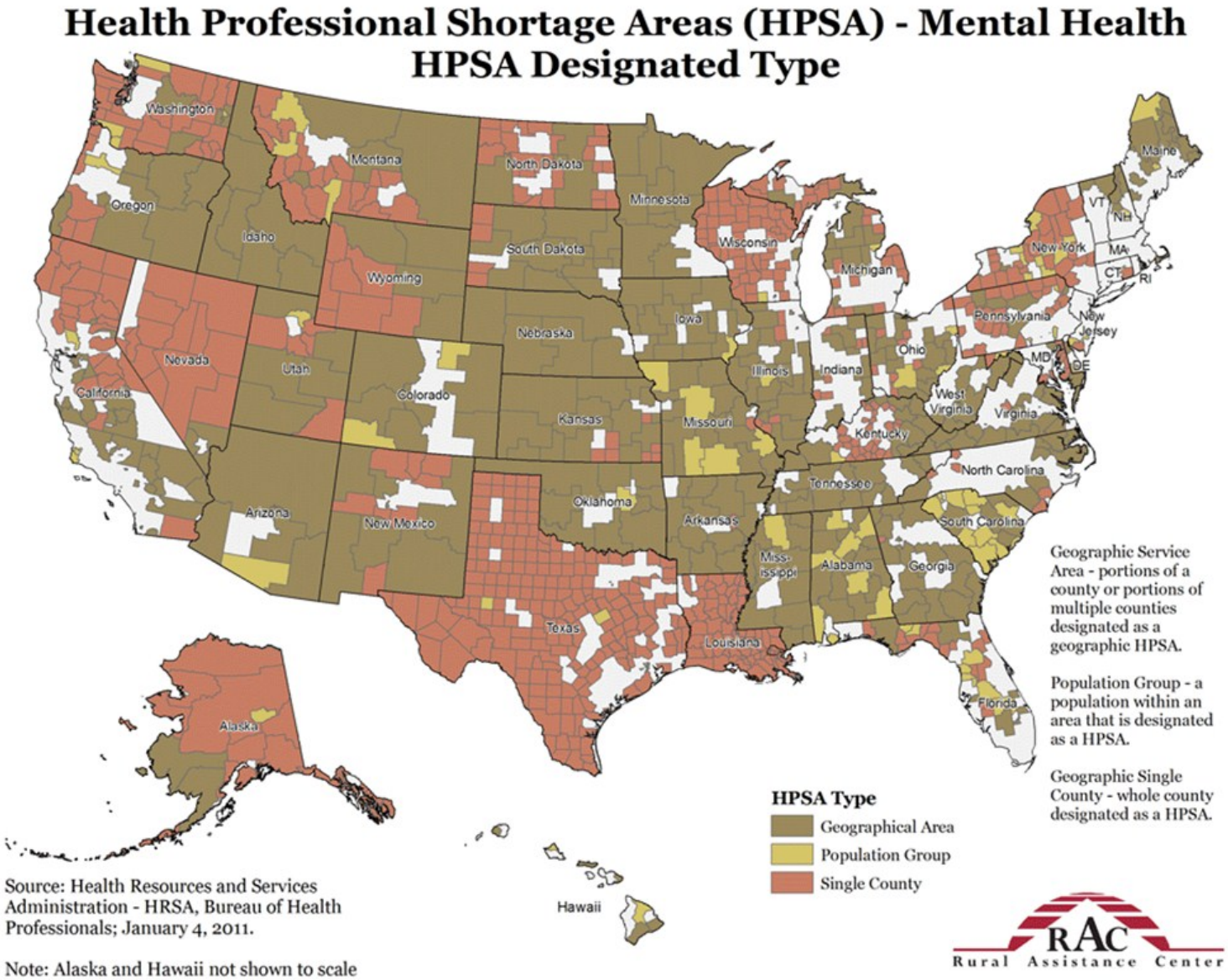


Figure 3. Mental health professional shortage areas by county.



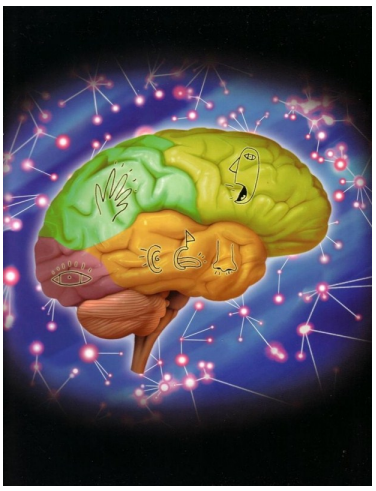
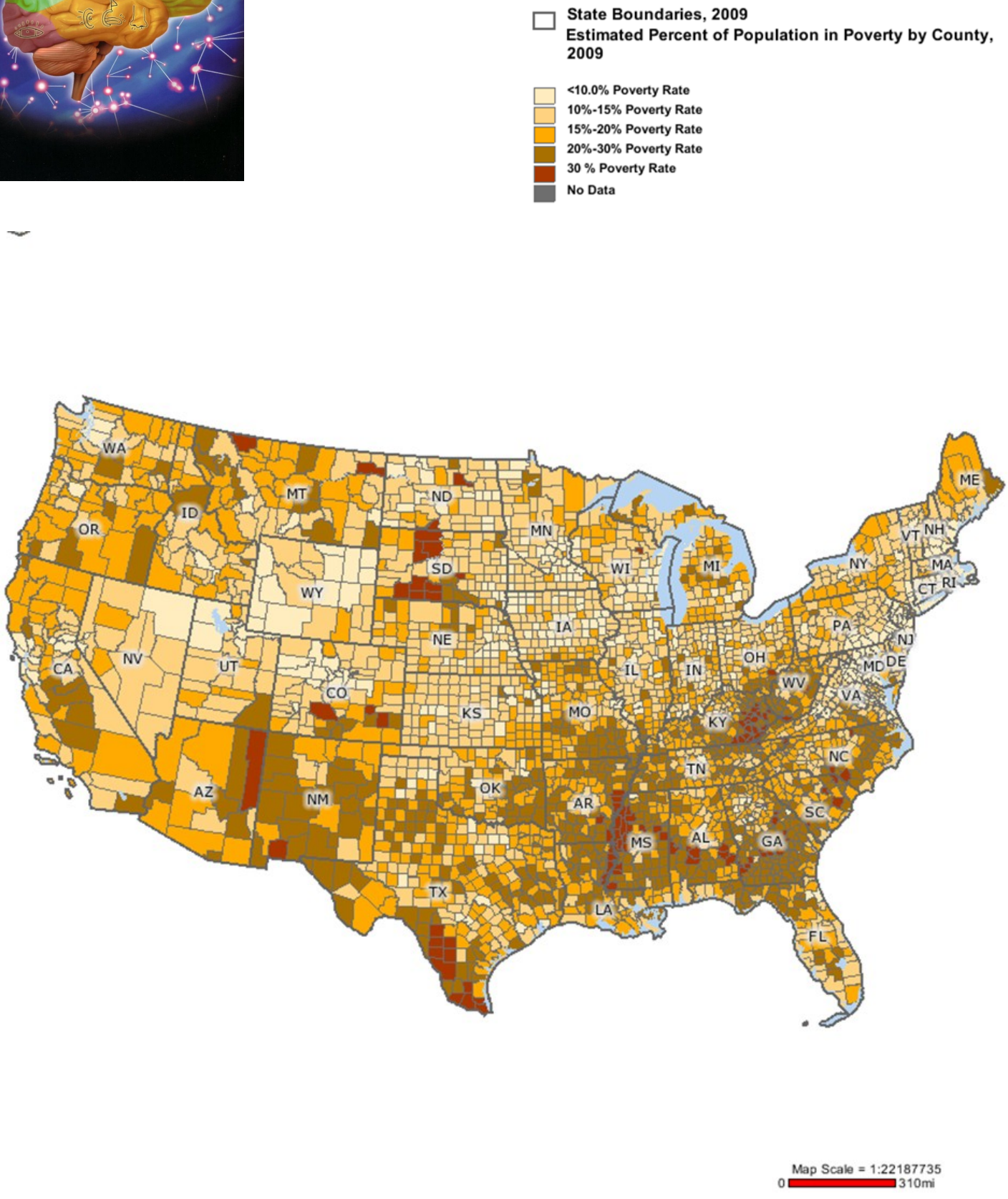
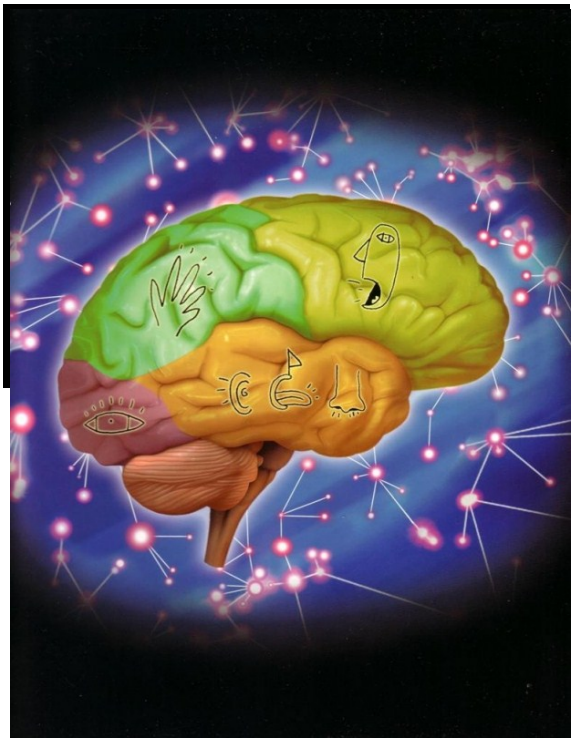


Figure 4. U.S. poverty rates by county.





Appendix E

Tables

1. Questions identified by the Mental Health Science Group of the Federal Health Disparities Collaboative, U.S., 2006-2008.

2. Lfetime prevalence rates of psychiatric disorders for older (>59) adults by ethnicity

3. Psychiatric disorders prevalence rates of two American Indian tribes.

4. Lifetime and 12 month prevalence of psychiatric disorders of young rural adults (19-23).

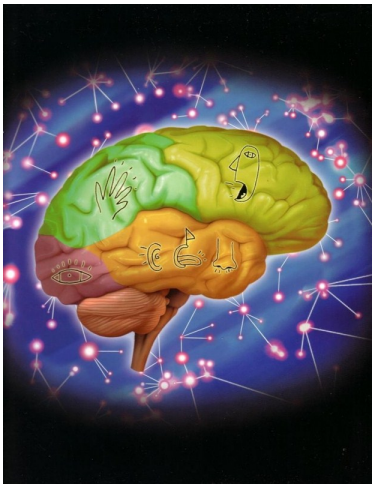


Table 1. Questions identified by the Mental Health Science Group (MHSG) of the Federal Health Disparities Collaborative, U.S., 2006-2008.

What are the numerics of Mental Health Disparities (MHDs)?
How are MHDs measured?
What are the validity/reliabilities of instruments in relation to MHD populations?
How can we improve the validity/reliability of the diagnostic process across MHD populations?
What is the optimal mental health research infrastructure capacity, and where should it be initiated, expanded, or terminated?
What is outreach and dissemination research?
What research should the MHSG endorse?
How can the MHD research effort be better organized?
Where should the MHSG research effort begin?
How will we know when the FCHDR MHSG effort has made a difference?

(Safran et al., 2009)

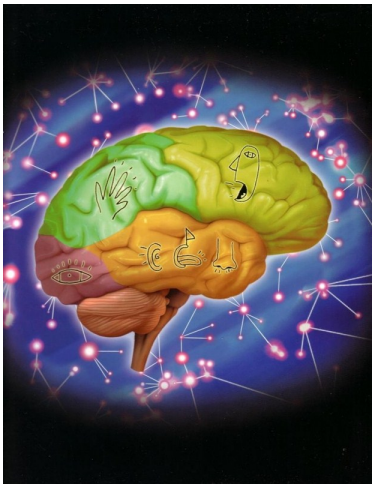


Table 2. Lifetime prevalence rates of psychiatric disorders for older (>59) adults by ethnicity.

Psychiatric Disorder	% (Standard Error)				
	Non-Latino White (n=831)	Latino (n=420)	Asian (n=260)	African American (n=671)	Afro-Caribbean (n=193)
Any depressive disorder	12.2 (1.4)	16.4 (2.6)	7.7 (2.0)	5.4 (1.0)	8.1 (3.3)
Major depressive	11.6 (1.4)	15.7 (2.5)	7.5 (2.0)	5.3 (1.0)	6.7 (3.0)
Dysthymia	2.4 (0.7)	2.9 (1.0)	2.4 (1.1)	1.4 (0.5)	2.9 (2.1)
Any anxiety disorder	13.5 (1.4)	15.3 (2.5)	10.9 (2.3)	11.9 (1.4)	11.2 (3.6)
Agoraphobia without panic	0.8 (0.4)	1.3 (0.7)	0.8 (0.7)	1.5 (0.5)	2.9 (2.0)
General anxiety disorder	5.5 (1.0)	5.7 (1.5)	3.8 (1.4)	2.9 (0.7)	1.1 (1.2)
Panic disorder	2.4 (0.7)	2.2 (1.1)	1.4 (0.9)	1.4 (0.5)	3.2 (1.8)
PTSD	2.8 (0.7)	3.0 (1.0)	2.3 (1.1)	4.8 (0.9)	3.1 (2.0)
Social phobia	6.8 (1.1)	(1.1) 5.6	3.1 (1.2)	5.1 (1.0)	1.1 (1.0)
Any depressive and/or anxiety disorder	NR	NR	NR	NR	NR
Any substance use disorder	5.9 (1.0)	4.5 (1.6)	1.3 (0.8)	9.0 (1.3)	4.5 (2.7)
Alcohol dependence	2.2 (0.6)	1.4 (0.9)	0.2 (0.3)	2.3 (0.7)	2.2 (2.1)
Alcohol abuse	5.7 (0.9)	4.3 (1.4)	4.3 (1.4)	8.5 (1.3)	4.1 (2.5)
Drug dependence	0.1 (0.1)	0.2 (0.3)	0.0 (0.1)	0.6 (0.3)	0.3 (0.6)
Drug abuse	0.4 (0.2)	0.4 (0.4)	0.1 (0.2)	1.1 (0.4)	0.5 (0.7)
Any psychiatric disorder	23.9 (1.9)	26.8 (3.2)	14.6 (2.6)	21.1 (1.9)	17.3 (4.1)

NR Not Reported

Non-Latino White, Latino, Asian, African American, Afro-Caribbean data (Beals et al., 2005)

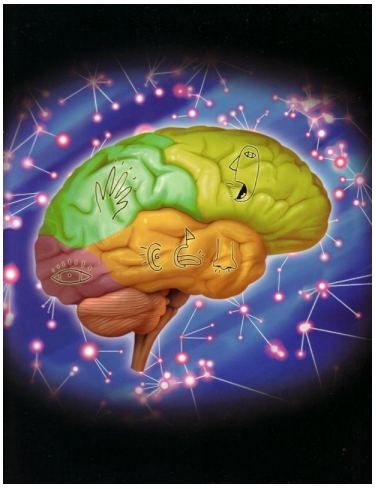


Table 3. Psychiatric disordes prevalence rates of two American Indian tribes.

Psychiatric Disorder	% (Standard Error)		
	Southwest American Indian (n=1446)	Northern Plains American Indian (n=1638)	NCS Male Sample (n=3847)
Any depressive disorder	11.2(2.0)	6.8 (2.0)	14.4(1.9)
Major depressive	10.7 (2.0)	7.8 (1.6)	12.8 (1.9)
Dysthymia	3.5 (0.9)	1.7 (0.9)	4.5 (1.0)
Any anxiety disorder	19.1 (2.6)	15.9 (2.2)	8.6 (1.6)
Agoraphobia without panic	NR	NR	NR
General anxiety disorder	3.3(1.0)	1.5(0.8)	3.6 (0.9)
Panic disorder	4.5(1.2)	1.7(0.9)	2.0 (0.7)
PTSD	16.1(2.5)	14.2 (2.2)	4.3 (1.0)
Social phobia	NR	NR	NR
Any depressive and/or anxiety disorder	24.2 (2.9)	20.2 (2.3)	18.1 (2.1)
Any substance use disorder	27.1 (3.0)	37.0 (3.2)	35.4 (1.7)
Alcohol dependence	9.8 (1.9)	16.6 (2.4)	20.1 (2.2)
Alcohol abuse	14.1 (2.3)	18.1 (2.4)	12.6 (1.9)
Drug dependence	4.0 (1.2)	4.8 (1.3)	9.2 (1.5)
Drug abuse	5.1 (1.3)	10.7 (2.7)	5.4 (1.1)
Any psychiatric disorder	41.9(3.5)	44.5 (3.4)	NR

NR Not Reported

Data (Beals, Novins et al., 2005)

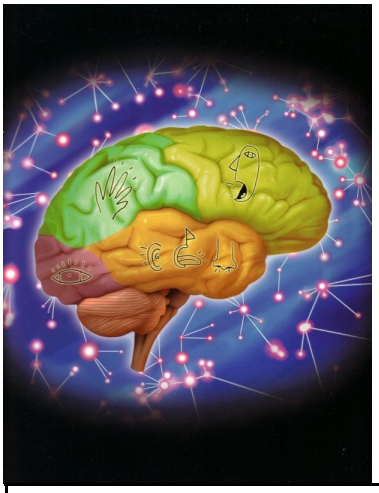


Table 4. Lifetime and 12 month prevalence psychiatric disorders of young rural adults (19-23).

NR –Not Reported; Data (Hauenstein & Peddada, 2007)

Disorder	Lifetime Prevalence			12 Month Prevalence		
	Total	Females	Males	Total	Females	Males
Affective disorder						
Major depressive episode	15.1(1.6)	21.1(2.4)	8.1(1.7)	4.2(0.9)	6.5(1.5)	1.4(0.8)
Manic episode	0.7(0.4)	0.3(0.3)	1.2(0.7)	0.4(0.3)	0.4(0.4)	0.5(0.5)
Dysthymia	6.3(1.1)	9.3(1.7)	2.8(1.1)	1.9(0.6)	3.1(1.1)	0.5(0.5)
Any Affective disorder	16.2(1.6)	23.2(2.5)	8.1(1.7)	4.6(1.0)	7.3(1.6)	1.4(0.8)
Anxiety disorder						
Panic disorder	2.4(0.7)	3.5(1.1)	1.2(0.7)	0.6(0.4)	0.8(0.5)	0.5(0.5)
Agoraphobia w/o Panic disorder	2.2(0.6)	2.1(0.8)	2.4(1.0)	0.8(0.4)	0.8(0.5)	0.9(0.7)
Social phobia	13.1(1.5)	14.2(2.1)	11.7(2.1)	2.9(0.8)	3.4(1.1)	2.3(1.0)
Simple phobia	12.5(1.4)	16.3(2.2)	8.1(1.7)	3.3(0.8)	5.4(1.4)	0.9(0.7)
Generalized Anxiety disorder	1.5(0.5)	1.4(0.7)	1.6(0.8)	0.0(0)	0.0(0)	0.0(0)
PTSD	4.8(0.9)	7.4(1.6)	1.7(0.8)	0.4(0.3)	0.8(0.5)	0.0(0)
Any Anxiety disorder	25.6(1.9)	30.8(2.7)	19.4(2.5)	6.9(1.2)	9.6(1.8)	3.7(1.3)
Substance Use disorder						
Alcohol Abuse w/o dependence	18.5(1.7)	17.5(2.3)	19.7(2.6)	8.4(1.3)	7.7(1.7)	9.2(2.0)
Alcohol dependence	19.3(1.7)	10.2(1.8)	30.1(3.0)	5.4(1.0)	3.1(1.1)	8.3(1.9)
Drug Abuse w/o dependence	4.6(1.0)	3.1(1.1)	6.5(1.7)	2.1(0.7)	1.1(0.7)	3.2(1.2)
Drug Dependence	4.6(1.0)	1.9(0.9)	7.8(1.8)	1.7(0.6)	0.8(0.5)	2.8(1.1)
Any substance abuse/	39.9(2.1)	29.5(2.7)	52.3(3.2)	16.1(1.7)	11.9(2.0)	21.2
Other disorder						
Antisocial Personality	3.5(0.8)	1.7(0.8)	5.7(1.5)	NR	NR	NR
Conduct Disorder	13.1(1.5)	5.2(1.3)	22.3(2.7)	NR	NR	NR
Anorexia nervosa	0.2(0.2)	0.4(0.4)	0.0(0)	0.0(0)	0.0(0)	0.0(0)
Bulimia nervosa	0.4(0.3)	0.8(0.5)	0.0(0)	0.4(0.3)	0.8(0.5)	0.0(0)
Any disorder	61.4(2.1)	56.4(2.9)	67.2(2.0)	24.3(2.0)	24.5(2.7)	24.0 (2.9)