

Community Capacity and Teleconference Counseling in Rural Texas

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How can psychologists aid in addressing current disparities in accessibility to meet the mental health needs of rural areas? In this paper, we discuss an innovative partnership created between community leaders in a rural county and an APA-accredited doctoral training program and its mental health clinic at a regional Federally Qualified Health Center (FQHC) to provide mental health services. We describe the efforts to build community capacity to develop the partnership and provide sustainable mental health services via teleconferencing to a remote site in a rural county. Also, to present initial evidence of the services' effectiveness in alleviating client distress, as well as meeting the expectations of referral sources and community stakeholders, we used the Patient Health Questionnaire (PHQ), the SF-12v.2, and a qualitative community survey. We examined data from a maximum of 68 clients (M age = 40.5, SD = 14.1; 48 females and 20 males); the number of available client data varied by analysis. We found that clients showed significant decreases in depressive symptoms (M decrease = 5.88, SD = 7.16, p < .001) and significant increases Mental Health Composite Scores (MCS; M increase = 11.39, SD = 7.94, p < .005). Results from the community survey revealed encouraging results as well as areas for improvement. Implications of developing community capacity for sustainable psychological services in rural areas are discussed.

Keywords: community capacity, telehealth, teleconference counseling, rural, videoconferencing

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Meeting the mental health needs of underserved individuals in rural areas warrants increased attention from psychologists. Almost 20% of the total United States population—approximately 55 million people—live in rural areas and are significantly impeded by the lack of availability and acceptability of mental health services (Health Resources and Services Administration, 2005; Jameson & Blank, 2007). Depression, substance abuse, and domestic violence occur at the same rates in rural areas as in their urban counterparts (Cellucci & Vik, 2001; Smalley et al., 2010), and some issues, such as suicide, occur at higher rates in rural areas (Singh & Siahpush, 2002).

Despite these needs, accessibility to mental health services in rural America is hindered by higher rates of poverty, inadequate housing and transportation, lower rates of insurance, and poorer health status (Stamm et al., 2003; Wagenfeld, 2003). These barriers can be compounded for ethnic minorities in rural communities who often encounter more overdiagnosis and misdiagnosis, and poorer treatment outcomes, across settings (Ridley, 2005).

More than 85% of Mental Health Professional Shortage Areas (MHPSAs) are in rural regions (Bird, Dempsey, & Hartley, 2001). Professionals are often hesitant to provide services for less compensation and potentially greater ethical risk in rural practice (Health Resources and Services Administration, 2005; Ryan-Nicholls & Haggarty, 2007). Specifically, dual relationships can be hard to avoid in rural places, and ethical dilemmas about the scope and role of the professional are common. Additionally, consultation, referral sources, and supervision for rural clients can be hard to find (Health Resources and Services Administration, 2005; Weigel & Baker, 2002). When mental health services are present in rural communities, they are often inconsistent, disjointed, and plagued with cultural barriers, thus making the services less available to the individuals (DeLeon, Wakefield, & Hagglund, 2003; Hauenstein, 2008; McCord, Elliott, Brossart & Castillo, in press; Owens et al., 2002).

Often, the perspective of mental health providers imparts typical discourse about barriers to, and disparities in, rural mental health services. Consequently, many services solely develop and reflect the intentions and solutions proposed by the service provider. To a great extent, many psychologists are generally aware of the impact “rural culture” can have on initiating and developing therapeutic rapport, obtaining consent, and providing clinical services to rural clientele (e.g., Fuller, Edwards, Procter, & Moss, 2000; Stamm, Lambert, Piland, & Speck, 2007). In addition, many psychologists are aware of the need for community support for successful service provision (Sears, Evans, & Kuper, 2003). Yet the legitimate concerns and potential investment of rural residents are rarely solicited or incorporated when the infrastructure and support needs necessary for providing psychological services are considered (Elder & Quillen, 2007).

From a social-ecological perspective, disparities in rural communities result from an ongoing and systemic array of institutional, policy, and community-based influences that limit individual options and choices (McLeroy, Bibeau, Steckler, & Glanz, 1988). Meaningful solutions may be achieved when invested stakeholders in the community have the capacity to agree on common problems and goals, and then develop collaborative, coordinated, and strategic programs to address them (Burdine, Wendel, Felix, McLeroy & Blakely, 2010; Iscoe, 1974; Trickett, 2009). In this paper, we describe a public health initiative to build community capacity in

a rural community to support sustainable mental health services in that area. We outline the partnership developed between community leaders and an APA-accredited doctoral training program and its mental health clinic at a regional Federally Qualified Health Center (FQHC).

Additionally, we present an evaluation of both the relative effectiveness of a telecounseling service the program provided to the rural area, and we present feedback from referral sources and community stakeholders about the service.

Community Capacity and Rural Mental Health Service Delivery

Community capacity may be best defined as “the degree to which a context has structures and processes in place to help mobilize residents for action—the interaction of human, organization, and social capital” (Trickett, 2009, p. 412). It is reflected in the ways a community can recognize, acquire, mobilize, and use resources to address their problems and achieve community-wide goals (Iscoe, 1974; Stokols, Grzywacz, McMahan, & Phillips, 2003; Trickett, 2009; Wendel et al., 2009). In essence, building community capacity requires a time-consuming, yet deliberate and collaborative, approach to sharing resources so service activities are “working with rather than in communities” (Trickett, 2009, p. 415).

The Center for Community Health Development (CCHD) at the Texas A&M Health Sciences Center (<http://www.cchd.us/>) implemented several strategic activities to build community capacity to support an array of health services in the Brazos Valley—a seven-county region in Central Texas. These residents face health disparities resulting from geographic isolation, limited availability of services, lack of transportation, poor socioeconomic status, low educational achievement, lack of insurance, and a host of other contributing factors. The region is designated as a mental health professional shortage area: Texas has the highest proportion of its counties designated as mental health provider shortage areas in the United States (Health Resources & Services Administration, 2008; Trust for America’s Health, 2008). Although Texas has one of the largest rural-residing populations in the United States, it ranks 48th in the country for spending allocated to mental health (Texas Health Institute, 2008). Results from a 2006 survey conducted in the Brazos Valley revealed that 62% of adult residents who said they needed mental health services were unable to get the services they needed; over 50% of the respondents who needed alcohol abuse services were unable to obtain those services; and 50% of survey respondents reported having at least one day of “poor mental health” in the last 30 days (Center for Community Health Development, 2006). More recent survey data indicates that high rates of depressive disorders exist throughout the region, particularly among African American residents (ranging from a rate of 8% among Latino men to 23% among African American women; Brossart et al., 2011).

Working with the CCHD, a group of community leaders, service providers, and other stakeholders established the Brazos Valley Health Partnership in 2002 to collaboratively address local health issues across the Brazos Valley. In response, four of the six rural counties in the Brazos Valley (Leon, Madison, Burleson, and Grimes counties) appointed a county “health resource commission” to oversee health planning, resource de-

velopment, and operation of local health resource centers in each county. The Leon County Health Resource Commission is comprised of 23 appointed community members representing all major community sectors and social/cultural groups in the county. After considering the results of the 2006 health survey, the Leon County Health Resource Commission decided on three key priorities: expanding the volunteer-based transportation system, increasing access to mental health services, and increasing access to specialty care. Through a series of meetings with local health care providers, the local United Way, faculty from Texas A&M University, the local division of the state mental health and mental retardation authority, law enforcement officials, and school counselors, the Leon County Health Resource Commission developed multiple strategies for increasing access to mental health services. First, they decided to identify available mental health services in the area. The second strategy recruited mental health professionals to serve clients through the health resource center in Leon County. Finally, they capitalized on the community's proximity to Texas A&M University and the faculty in the accredited Counseling Psychology doctoral program. The program's department operates a non-profit psychological services and training clinic—the Counseling and Assessment Clinic (CAC)—in a FQHC in Bryan, Texas (about 70 miles from Leon County). Students in the Counseling Psychology doctoral program provide counseling and assessment services in the clinic under the supervision of program faculty, and they receive practicum hours that count toward their degree and internship requirements.

Subsequently, the Leon County Health Resource Commission decided the CAC would be a logical, cost-effective, and potentially sustainable option for providing mental health services to residents in this rural community. To increase accessibility and availability to rural residents, the commission then decided to establish a high-speed, T1 connection between the CAC and the rural health resource center in Leon County. With technical assistance from CCHD, the county secured a Rural Health Network Development grant from the Health and Resources Service Administration (HRSA) to provide funding for establishing the infrastructure necessary to implement their plans. These funds provided assistantships (for counseling psychology students), equipment, and initial infrastructure necessary for providing counseling services via teleconferencing to clients at the health resource center in compliance with the Health Insurance Portability and Accountability Act (HIPAA). Accumulating evidence indicates that teleconferencing can be used to provide effective mental health services to the satisfaction of clients (Norman, 2006; Steel, Cox, & Garry, 2011).

During this process, community stakeholders recognized and capitalized on the expertise of their partners—the Counseling Psychology program, the CAC, and CCHD—to launch their strategy to bring an innovative solution for access to mental health services for their community. The mutual collaboration also exemplifies the potential that doctoral programs may have in partnering with FQHCs in interdisciplinary endeavors to enrich training while addressing disparities (DeLeon & Kazdin, 2010). The relationship between the county and these entities provided them with access to resources and expertise they did not previously possess. This positive experience with solving a community-identified problem (access to mental health services) was a fun-

damental building block in increasing local capacity to solve subsequent health issues and concerns.

Evaluating Service Effectiveness and Stakeholder Impressions

We conducted two evaluations of the service and its benefits to the community. First, we analyzed the information collected from the clients who received counseling services provided at the Leon County Health Resource Center (LHRC) via teleconferencing to determine if the service had clinically important effects. Based on previous research suggesting the effectiveness of teleconference technology in counseling interventions, we expect to see significant decreases in depressive symptomology in our clientele. Second, we conducted a survey of the primary agencies and institutions in and around Leon County to ascertain their general impressions of the counseling services provided by the partnership, including their satisfaction with and awareness of the array of services available via teleconference.

Method

Participants

Services were provided at the LHRC located in Centerville, Texas. The county population is just under 17,000 (United States Census Bureau, 2011), but the largest population center in the county is the city of Buffalo at 1,984; thus, the population in Leon County is greatly dispersed. Centerville, the county seat, is almost equidistant from Houston and Dallas, and had a population of 977 at the 2010 census. Teleconference psychology services began in March 2009.

To date, the clientele has been approximately 80% Caucasian, 7% each of African American and Hispanic individuals, and 4% biracial individuals (see Table 1). Women are the predominant users, at 70%. Clients range in age from 9 years old to 73, with a mean age of 40.5 ($SD = 14.1$). Clients presented with a variety of concerns ranging from bereavement, relational problems, and adjustment issues to anxiety, depression, PTSD, and other more serious mental illnesses (see Table 1 for most common diagnoses).

For the community survey, we selected 39 community stakeholders at various organizations (e.g., the local office for the state mental health and mental retardation agency), institutions (e.g., schools), health service providers (e.g., physicians, nurses), and local elected officials (e.g., county commissioner, judge) in Leon County and other areas in the Brazos Valley. These stakeholders had previously participated in commission and partnership activities or had been visited by members of the CCHD and the commission who were promoting the service and requesting referrals in the area. The institutional review board at Texas A&M University granted approval to use client data for this study and to collect data from community stakeholders.

Procedures

Both the CAC in Bryan and the LHRC in Centerville were equipped with a 42-inch high-definition widescreen TV and a standard PolyCom teleconferencing unit, including a high-definition camera and microphone. The equipment provides real-

Table 1
Characteristics of Clients Receiving Telehealth Counseling Services

Client Characteristics	Men (<i>n</i> = 20)	Women (<i>n</i> = 48)	Total (<i>n</i> = 68)
Age			
<i>M</i>	39.05	41.10	40.50
<i>SD</i>	19.43	11.39	14.10
Range	9–73	16–63	9–73
Ethnicity			
Caucasian	13 (65%)	42 (87.5%)	55 (80.9%)
African American	3 (15%)	2 (4.2%)	5 (7.4%)
Hispanic	3 (15%)	2 (4.2%)	5 (7.4%)
Biracial/Other	1 (5%)	2 (4.2%)	3 (4.4%)
Diagnoses from treatment plans (may have comorbid diagnoses or no diagnosis)			
Major depressive disorder	8	18	26
Panic disorder	1	8	9
Post-traumatic stress disorder	1	8	9
Substance abuse/Dependence	4	2	6
Bipolar disorder	0	4	4
Generalized anxiety	0	3	3
Mini mental status examination			
<i>M</i>	21.62	22.41	22.20
<i>SD</i>	2.83	3.75	3.52
Reason for termination (some still continuing treatment)			
Client-initiated	11	23	34
Collaborative	6	14	20
Number of sessions			
<i>M</i>	4.85	6.31	5.88
<i>SD</i>	4.20	7.05	6.35
Range	1–13	1–35	1–35

time audio and video communication from the CAC to the LHRC over a secure T1 Internet connection that meets all HIPPA guidelines for encryption and confidentiality. During the initial intake session, counselors (counseling psychology doctoral students) at the CAC verbally administer the Patient Health Questionnaire (PHQ) and the Short Form 12 survey (SF-12v2) to the client at LHRC. Additionally, every four sessions, the PHQ9 is given as a follow-up measure after at least 4 weeks of counseling. To ensure clients were not severely cognitively impaired, we administered the Folstein Mini Mental Status Examination (MMSE; Folstein, Folstein, & McHugh, 1975). Following intake, clients were scheduled for weekly 50-min sessions with session content, treatment planning, and intervention strategies that varied depending on the client's presenting concern and level of functioning and the counselor's therapeutic orientation. The doctoral students relied on integrative theoretical orientations, using techniques from the following approaches to address unique client needs: cognitive-behavioral therapy, cognitive processing therapy, person-centered, and humanistic approaches.

Measures

The Patient Health Questionnaire (PHQ9; Kroenke, Spitzer, & Williams, 2001) was used to assess clients' depressive symptoms during the intake appointment. The nine questions on the PHQ reflect *Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV)* criteria for depressive disorders (Kroenke et al., 2001). The PHQ9 asks respondents to choose one of 4 Likert-scale responses (0 = not at all, 1 = several days, 2 = more than half the days, 3 = nearly everyday) to questions regarding their mental/

emotional health over the previous 2-week period. Scores on the PHQ9 range from 0–27; scores between 0 and 4 indicate no depression, 5–9 indicate mild depression, 10–14 indicate moderate depression, 15–19 indicate moderately severe depression, and ≥ 20 indicate severe depression (Kroenke et al., 2001). Reliability and validity studies of the PHQ9 have yielded results indicating sound psychometric properties. Internal consistency of the PHQ9 has been shown to be high (alphas of .86 and .89.), and test-retest reliabilities for the PHQ9 have been acceptable (.84; Kroenke et al., 2001). The internal consistency for the PHQ9 was .94 for our sample.

The SF-12v2 (Ware, Kosinski, & Keller, 1996; Ware, Kosinski, Turner-Bowker, & Gandek, 2002) was used to obtain indicators of client quality of life. The SF-12v2 is a 12-item self-report measure that gives an indication of the degree to which physical or mental health issues interfere with daily functioning across various domains. The SF-12v2 shows very good psychometric properties and is a widely used outcome measure in clinical settings. On the general health (GH) subscale, respondents rate their overall health on a 5-point scale (excellent, very good, good, fair, and poor) and raw scores are transposed with an algorithm to a standardized score. The mental health (MH) subscale was also used. The MH scale assesses a sense of peacefulness and happiness; lower scores on this scale imply unhappiness, distress, and nervousness. The mental health composite score (MCS) was also used as a general measure of psychological quality of life. A higher score on each scale reflects higher emotional quality of life.

For the community survey to assess local perceptions of the teleconference counseling services, a 16-item survey was created

and hand-delivered to service providers in and around the Leon County area who could potentially make referrals for psychological services. The survey included questions about awareness of available services via teleconferencing, their experience with the referral process, their perceptions of the effectiveness of teleconference counseling services, and their beliefs about how the services are impacting the community.

Results

Effectiveness of the Teleconference Counseling Service

We used the paired samples *t*-test because it allowed for the comparison of health-related quality of life and depressive symptom scores for each client before and after a 4-week counseling intervention (further information about PHQ and SF-12 scores is available online as supplemental material). Follow-up data was only available for 25 counseling participants for a variety of reasons, including both client-initiated and collaborative termination occurrences before four sessions and sporadic lapses in data collection despite the established protocol (see Table 1). As a group, clients reported a statistically significant decrease in depressive symptoms at the fourth session: An average drop of 5.88 ($SD = 7.16$) points in total depression scores on the PHQ9 was observed after 4 weeks of counseling. Both men and women experienced significant decreases in depressive symptoms. Men had more pronounced improvements than women (men: mean difference = 8.33, $SD = 6.3$, $p < .05$; women: mean difference = 5.06, $SD = 7.4$, $p < .05$). When using the PHQ9 to determine symptom severity, there are approximately 4 points between each degree of severity. Therefore, for most clients, the degree of decrease in their PHQ9 total score is likely to be clinically significant and reflect observable changes in mood and behavior.

Clients also reported a statistically significant increase in their MCS score, with an average increase of 11.39 ($SD = 7.94$) points. At intake, clients reported GH, MH, and MCS average scores more than one standard deviation below the norm, indicating lower overall physical and psychological quality of life than the general population. Although the clientele's general health did not significantly change, after 4 weeks of counseling, both their MH and MCS scores improved to less than one standard deviation below the norm for the general population.

Community Perceptions

Analysis of community receptiveness and evaluation of the teleconference counseling service revealed both encouraging results and areas for improvement. A summative evaluation of the 19 surveys returned (a 48% return rate) indicate that 84% of respondents were aware of the teleconference counseling services at the LHRC and at least 80% were aware that both adult and child/adolescent counseling services are available. On the other hand, only one respondent was aware of the availability of personality assessments from the service, 19% were aware of the availability of cognitive assessments, and just 44% were aware of the availability of couples counseling. These statistics suggest that although most stakeholders are aware of our presence, we should work to increase familiarity with the extent of our available services.

In addition to general awareness of services, the survey also assessed frequency of referral and satisfaction with services. Only two of the sources reported they *never* referred a client for teleconference counseling, and the respondents did not indicate why they chose not to refer. Twenty-five percent of the referral sources reported they *always* referred to the teleconference counseling services available at LHRC. Thirty-eight percent reported *never* referring for psychological assessment, and 13% reportedly always refer for this service. Half of the sources reported being *satisfied* or *very satisfied* with the services and only one agency reported being dissatisfied (again, the reason for dissatisfaction was not noted). The remainder of the sample was either *not sure* or marked *not applicable* on this item.

The survey provided useful insight into stakeholder perceptions of the program's impact. There was some uncertainty across sources about whether teleconference counseling is perceived as being equally as effective as face-to-face counseling: 44% believed that it is *definitely* or *probably* as effective, 38% stated *not sure*, and 19% stated *probably/definitely not* as effective. However, more sources were confident that teleconference counseling is an effective counseling treatment in general. In fact, half were *confident* or *very confident* that teleconference counseling is effective, and only two sources reported *not confident* or *a little confident*. Moreover, 60% of referral sources said that the referred client would have continued *without* psychological services if it were not for the services available at LHRC. Additionally, 81% of referral sources indicated that this teleconference counseling project either *probably* or *definitely* increased access to mental health services. All of the respondents indicated some level of agreement that the teleconference counseling had increased access to mental health services in their community.

Discussion

These data support the unique "town and gown" partnership that was developed between community stakeholders, university resources, and a regional FQHC. This partnership resulted from improvements in the capacity of the community to collaborate, share information, seek assistance from external sources, and reach consensus on strategic solutions. In this process, the community maintains a sense of ownership and administration over the service. Supervising faculty members and doctoral students, for example, have been asked to attend and provide reports about the service to commission meetings. This kind of long-term investment and ownership is necessary to ensure adequate utilization of services, cultivate a positive presence in the community, and define the ongoing commitments for local stakeholders—all of which are crucial for sustainability (Wendel et al., 2009).

When the project was conceptualized, the primary unknown was whether the community—both clients and stakeholders—would accept the technology as an appropriate way of delivering mental health services. We anticipated that clients may be hesitant to participate in teleconference counseling and might experience it as somewhat sterile, artificial, or unfamiliar. Yet we have been impressed by the degree to which clients display comfort and explore personal issues in sessions. We suspect that clients may experience a greater sense of confidentiality, as it is highly unlikely that they would meet the counselor in a real-life encounter in the town or county. Rural residents often surrender their anonymity and risk

being stigmatized when visiting a mental health professional whose office and parking lot are visible to anyone driving by (Schank, Helbok, Haldeman, & Gallardo, 2010). This issue may be circumvented with teleconference counseling.

Survey data assessing community stakeholder receptiveness revealed that half of the respondents were either “satisfied” or “very satisfied” with the availability of teleconference counseling in their community. Although the number of community stakeholders that responded to the survey was small, the survey initiates efforts toward continuous quality improvement. For instance, only a few respondents were aware that psychological assessment could be arranged. Since stakeholders continue to reconvene to ensure sustainability, this and other findings from the survey should be made known to the stakeholders. Soliciting local knowledge will likely help maximize our efforts in supplying more information about the array of psychological services available.

From the providers’ perspective, the use of technology has changed our traditional view of office-based counseling and therapy. With repeated experiences, students and supervising faculty developed greater comfort using teleconferencing in counseling. As one counselor stated, “The experience of telehealth counseling, like all good therapy, is so much dependent upon the relationship. Very quickly, you begin to realize that the physical presence of a client does not determine the depth of the human connection. In the process of engaging profoundly in personal communication, you are instantly transcending any perceived limitations and entering into sacred space” (G. Gonzalez, personal communication, July 11, 2011).

Telehealth services increase mental health professionals’ ability to provide services to individuals living in rural areas who may not have otherwise been able to access services by decreasing the travel burden and keeping individuals physically near their support systems in the home communities. Videoconference technology has been used effectively to conduct assessments, consultation, clinical supervision, training, counseling, and psychotherapy in rural settings (Richardson, Frueh, Grubaugh, Egede, & Elhai, 2009; Schopp, Demeris, & Glueckauf, 2006). These data indicate that teleconference counseling is effective in decreasing distress and improving client emotional quality of life in the short term.

Videoconferencing has increased in usage with favorable Medicare reimbursement policies, and services can be provided in a culturally competent manner to the satisfaction of individuals from ethnic and minority groups (e.g., American Indians, Shore et al., 2008; Native Hawaiians, Oliveira et al., 2006; Hispanics, Nelson & Bui, 2010). Cognitive-behavioral approaches appear to be particularly well suited for use in teleconferencing (Elliott, Brossart, Berry, & Fine, 2008; Germain, Marchand, Bouchard, Drouin, & Guay, 2009), but some techniques may be more effective in face-to-face encounters (e.g., exposure therapy for PTSD; Gros, Yoder, Tuerk, Lozano, & Acierno, 2011). The use of videoconferencing, however, can be limited by the quality of the infrastructure in rural areas for computer transmissions in the quality of existing telephone lines or satellite coverage. These issues delayed the implementation of the teleconference counseling service in the current project (Wendel, Brossart, Elliott, McCord, & Diaz, 2011).

One significant limitation of our evaluation is the small number of clients upon which the data analysis is based. This is a common limitation for research in rural populations, but it should not

discount the value of the data provided to inform future research and practice. The findings not only provide useful information for improving the project at hand but also give insight into how rural communities can build their capacity, embrace innovative use of technology, and strive to improve the quality of life of their residents.

References

- Bird, D. C., Dempsey, P., & Hartley, D. (2001). *Addressing mental health workforce needs in underserved rural areas: Accomplishments and challenges*. Working Paper No. 23. Portland, ME: Main Rural Health Research Center. Retrieved from <http://muskie.usm.maine.edu/Publications/rural/wp23.pdf>
- Brossart, D. F., Wendel, M. L., Cook, H., Castillo, L. G., Elliott, T. R., & Burdine, J. (2011). *Depression in rural communities: Using the PHQ-9 to determine rates of major depression episodes*. Manuscript submitted for review.
- Burdine, J., Wendel, M. L., Felix, M., McLeroy, K., & Blakely, C. (2010). Community-based participatory research and community health development. *Journal of Primary Prevention, 31*, 1–7. doi:10.1007/s10935-010-0205-9
- Cellucci, T., & Vik, P. (2001). Training for substance abuse treatment among psychologists in a rural state. *Professional Psychology: Research and Practice, 32*, 248–252. doi:10.1037/0735-7028.32.3.248
- Center for Community Health Development. (2006). *Brazos Valley health status assessment: Executive report*. College Station, TX: School of Rural Public Health.
- DeLeon, P. H., & Kazdin, A. E. (2010). Public policy: Extending psychology’s contribution to national priorities. *Rehabilitation Psychology, 55*, 311–319. doi:10.1037/a0020450
- DeLeon, P. H., Wakefield, M., & Hagglund, K. J. (2003). The behavioral health care needs of rural communities. In B. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide* (pp. 23–31). Washington, DC: American Psychological Association Books. doi:10.1037/10489-001
- Elder, M., & Quillen, J. H. (2007). A reason for optimism in rural mental health care: Emerging solutions and models of service delivery. *Clinical Psychology: Science and Practice, 14*, 299–303. doi:10.1111/j.1468-2850.2007.00090.x
- Elliott, T. R., Brossart, D. F., Berry, J. W., & Fine, P. R. (2008). Problem-solving training via videoconferencing for family caregivers of persons with spinal cord injuries: A randomized controlled trial. *Behaviour Research and Therapy, 46*, 1220–1229. doi:10.1016/j.brat.2008.08.004
- Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). Mini-mental state: A practical method for grading the state of patients for the clinician. *Journal of Psychiatric Research, 12*, 189–198. doi:10.1016/0022-3956(75)90026-6
- Fuller, J., Edwards, J., Procter, N., & Moss, J. (2000). How definition of mental health problems can influence help seeking in rural and remote communities. *Australian Journal of Rural Health, 8*, 148–153. doi:10.1046/j.1440-1584.2000.00303.x
- Germain, V., Marchand, A., Bouchard, S., Drouin, M. S., & Guay, S. (2009). Effectiveness of cognitive-behavioral therapy administered by videoconference for posttraumatic stress disorder. *Cognitive Behaviour Therapy, 38*, 42–53. doi:10.1080/16506070802473494
- Gros, D. F., Yoder, M., Tuerk, P. W., Lozano, B. E., & Acierno, R. (2011). Exposure therapy for PTSD delivered to veterans via telehealth: Predictors of treatment completion and outcome and comparison to treatment delivered in person. *Behavior Therapy, 42*, 276–283. doi:10.1016/j.beth.2010.07.005
- Hauenstein, E. J. (2008). Building the rural mental health system: From de facto system to quality care. *Annual Review of Nursing Research, 26*, 143–173.

- Health Resources and Services Administration. (2005). *Mental health and rural America: 1994–2005*. Rockville, MD: Author.
- Health Resources and Services Administration. (2008). *HPSA by state & county*. Retrieved from <http://hpsafind.hrsa.gov/HPSASearch.aspx>
- Iscove, I. (1974). Community psychology and the competent community. *American Psychologist, 29*, 607–613. doi:10.1037/h0036925
- Jameson, J. P., & Blank, M. B. (2007). The role of clinical psychology in mental health services: Defining problems and developing solutions. *Clinical Psychology: Science and Practice, 14*, 283–298. doi:10.1111/j.1468-2850.2007.00089.x
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*, 606–613. doi:10.1046/j.1525-1497.2001.016009606.x
- McCord, C. E., Elliott, T. R., Brossart, D. F., & Castillo, L. G. (in press). Mental health issues in rural areas. In R. Crosby, R. Vanderpool, M. Wendel, & B. Casey (Eds.), *Addressing rural health disparities*. San Francisco, CA: Jossey-Bass.
- McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly, 15*, 351–377. Retrieved from http://tamhsc.academia.edu/KennethMcLeroy/Papers/81901/An_Ecological_Perspective_On_Health_Promotion_Programs
- Nelson, E. L., & Bui, T. (2010). Rural telepsychology services for children and adolescents. *Journal of Clinical Psychology, 66*, 490–501. doi:10.1002/jclp.20682
- Norman, S. (2006). The use of telemedicine in psychiatry. *Journal of Psychiatric and Mental Health Nursing, 13*, 771–777. doi:10.1111/j.1365-2850.2006.01033.x
- Oliveira, J. M., Austin, A. A., Miyamoto, R. E. S., Kaholokula, J. K., Yano, K. B., & Lunasco, T. (2006). The rural Hawai'i behavioral health program: Increasing access to primary care behavioral health for native Hawaiians in rural settings. *Professional Psychology: Research and Practice, 37*, 174–182. doi:10.1037/0735-7028.37.2.174
- Owens, P. L., Hoagwood, K., Horwitz, S. M., Leaf, P. J., Poduska, J. M., Kellam, S. G., & Jalongo, N. S. (2002). Barriers to children's mental health services. *Journal of the American Academy of Child and Adolescent Psychiatry, 41*, 731–738. Retrieved from http://www.nctsn.org/nctsn_assets/Articles/30.pdf doi:10.1097/00004583-200206000-00013
- Richardson, L. K., Frueh, B. C., Grubaugh, A., Egede, L., & Elhai, J. D. (2009). Current directions in videoconferencing tele-mental health research. *Clinical Psychology: Science and Practice, 16*, 323–338. doi:10.1111/j.1468-2850.2009.01170.x
- Ridley, C. R. (2005). *Overcoming unintentional racism in counseling and therapy: A practitioner's guide to intentional intervention*. Thousand Oaks, CA: Sage.
- Ryan-Nicholls, K. D., & Haggarty, J. M. (2007). Collaborative mental health care in rural and isolated Canada: Stakeholder feedback. *Journal of Psychosocial Nursing, 45*, 37–45.
- Schank, J. A., Helbok, C. M., Haldeman, D. C., & Gallardo, M. E. (2010). Challenges and benefits of ethnical small-community practice. *Professional Psychology: Research and Practice, 41*, 502–510. doi:10.1037/a0021689
- Schopp, L., Demeris, G., & Glueckauf, R. L. (2006). Rural backwaters or front-runners? Rural telehealth in the vanguard of psychology practice. *Professional Psychology: Research and Practice, 37*, 165–173. doi:10.1037/0735-7028.37.2.165
- Sears, S. F., Evans, G. D., & Kuper, B. D. (2003). Rural social services systems as behavioral health delivery systems. In B. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide* (pp. 109–120). Washington, DC: American Psychological Association Books. doi:10.1037/10489-008
- Shore, J. H., Brooks, E., Savin, D., Orton, H., Grigsby, J., & Manson, S. M. (2008). Acceptance of telepsychiatry in American Indians. *Telemedicine and e-Health, 14*, 461–466. doi:10.1089/tmj.2007.0077
- Singh, G. K., & Siahpush, M. (2002). Increasing rural-urban gradients in U.S. suicide mortality, 1970–1997. *American Journal of Public Health, 92*, 1161–1167. Retrieved from <http://ajph.aphapublications.org/cgi/reprint/92/7/1161.pdf> 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*, 479–489. doi:10.1002/jclp.20688
- Stamm, B. H., Lambert, D., Piland, N. F., & Speck, N. C. (2007). A rural perspective on health care for the whole person. *Professional Psychology: Research and Practice, 38*, 298–304. doi:10.1037/0735-7028.38.3.298
- Stamm, B. H., Piland, N. F., Crouse, B., Boulger, J., Davis, G., Ide, B. A., B . . . Tidwell, K. (2003). Essays from the field. In B. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide* (pp. 11–20). Washington, DC: American Psychological Association Books. doi:10.1037/10489-000
- Steel, K., Cox, D., & Garry, H. (2011). Therapeutic videoconferencing interventions for the treatment of long-term conditions. *Journal of Telemedicine and Telecare, 17*, 109–117. doi:10.1258/jtt.2010.100318
- Stokols, D., Grzywacz, J. G., McMahan, S., & Phillips, K. (2003). Increasing the health promotive capacity of human environments. *American Journal of Health Promotion, 18*, 4–13. Retrieved from http://activelivingresearch.com/alr/files/AJHP_4_Stokols.pdf
- Texas Health Institute. (2008). *Texas Key Health Indicators*. Paper presented by Camille Miller at the Texas Indigent Health Care Association Annual Conference, Austin, TX.
- Trickett, E. J. (2009). Community psychology: Individuals and interventions in community context. *Annual Review of Psychology, 60*, 395–419. doi:10.1146/annurev.psych.60.110707.163517
- Trust for America's Health. (2008). *Texas Public Health Data: Key Health Facts*. Retrieved from <http://healthyamericans.org/states/?stateid=TX>
- United States Census Bureau. (2011). *Population Finder: Leon County, TX*. Retrieved from <http://factfinder.census.gov/>
- Wagenfeld, M. O. (2003). A snapshot of rural and frontier America. In B. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide* (pp. 33–40). Washington, DC: American Psychological Association Books. doi:10.1037/10489-002
- Ware, J. E., Kosinski, M., & Keller, S. D. (1996). A 12-item short-form health survey: Construction of scales and preliminary tests of reliability and validity. *Medical Care, 34*, 220–233. doi:10.1097/00005650-199603000-00003
- Ware, J. E., Kosinski, M., Turner-Bowker, D., & Gandek, B. (2002). *Version 2 of SF-12 Health Survey*. Lincoln, RI: Quality Metric.
- Weigel, D. J., & Baker, B. G. (2002). Unique issues in rural couple and family counseling. *The Family Journal, 10*, 61–69. doi:10.1177/1066480702101010
- Wendel, M. L., Brossart, D., Elliott, T. R., McCORD, C., & Diaz, M. (2011). Use of technology to increase access to mental health services in a rural Texas community. *Family & Community Health, 34*, 134–140. doi:10.1097/FCH.0b013e31820e0d99
- Wendel, M. L., Burdine, J. N., McLeroy, K. R., Alaniz, A., Norton, B., & Felix, M. R. J. (2009). Community capacity: Theory and application. In R. DiClemente, R. Crosby, and M. Kegler (Eds.), *Emerging theories in health promotion practice and research: Strategies for improving public health* (2nd ed., pp. 277–302). San Francisco, CA: Jossey-Bass.

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