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Adaptations to Health Care Barriers as Reported by Rural and Urban Providers

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Abstract

Barriers to ethical and effective health care in rural communities have been well-documented; however, less is known about strategies rural providers use to overcome such barriers. This study compared adaptations by rural and urban health care providers. Physical and behavioral health care providers were randomly selected from licensure lists for eight groups to complete a survey; 1,546 (52%) responded. Replies indicated that health care providers from small rural and rural communities were more likely to integrate community resources, individualize treatment recommendations, safeguard client confidentiality, seek out additional expertise, and adjust treatment styles than were providers from small urban and urban communities. Behavioral health care providers were more likely than physical health care providers to integrate community resources, individualize treatment recommendations, safeguard client confidentiality, and adjust their treatment styles; physical health care providers were more likely than behavioral health care providers to make attempts or have options to seek out additional expertise.

Keywords

Adaptations; rural; ethics; health care barriers

Recent research has shown that rural residents and health care providers face a number of barriers associated with the provision of ethical and effective health care service,¹ related to rural resource limitations, challenges to confidentiality, overlapping roles for patients and providers, travel and geographic complications, service access restrictions, and limitations in training and education. Some barriers are clearly related to the special circumstances of rural life, some are unique to the nature of rural residents, and some are closely tied to the experiences and backgrounds of rural health care providers.

Combined, these challenges represent and lead to health and health care disparities^{2,3} that perpetuate lower health-related quality of life for rural residents,⁴ especially rural residents in racial/ethnic minority groups.⁵ For example, as a result of rural health care barriers, rural areas struggle with inadequate disease prevention, delayed detection of illness, mis-diagnosis and late diagnosis, inadequate referral, and ineffective treatment.^{6–9} Not surprisingly, repeated calls have been made for systemic interventions and training interventions that will address

barriers to care in rural areas. Adaptations have been suggested ranging from increasing community awareness of prevention and early detection, to integrating community resources, implementing non-traditional treatment approaches, initiating measures to minimize confidentiality concerns, and finding ongoing support resources for providers.^{10–13} Included as an appendix is a listing of some of the more common recommendations; this list reflects the major themes in the literature,^{14,15} that is, system integration and flexibility, community and professional outreach, and cultural sensitivity and awareness.

Such changes, however, have been slow to occur, in part due to the rigidity of higher educational systems (such as medical and graduate schools), the inflexibility of public policy, and the intransigence of systems in general.^{2,3,14,15} To cope with the challenges they perceive in their daily practice, rural providers have learned to make adaptations to the ways they were taught to deliver services in an attempt to overcome some of the systemic, community, patient, and educational challenges that impede optimal health care. These modifications to ‘business as usual’ are beginning to be documented in the anecdotal literature, but have not been explored systematically. Some of the documented adaptations by individuals include, but almost certainly are not limited to, the following practices:^{3,16,17}

- Keeping a private log of information about a client that is not part of the official clinical records
- seeking support from local elders
- involving the patient’s family member(s) in health care
- changing personal traits to adapt to patient preferences
- modifying clinic procedures
- expanding regular office hours
- seeking relevant continuing education

Purpose of current study

Knowing what adaptations rural care providers have made successfully would provide fertile ground for policymakers in their efforts to plan system-wide changes. However, no study in the peer-reviewed literature has formally explored the types of adaptations rural versus urban care providers have made on a regular basis in the interests of their patients’ health and welfare. To address this void in the literature, the current study sought to explore adaptations made by health care providers in their daily practice in Alaska and New Mexico with an array of population densities, ranging from small, inaccessible rural communities to relatively large urban centers. This diversity in density allowed for comparisons of adaptations used by health care providers in a variety of rural and urban communities. To accomplish the goals of the study, a survey was developed for and sent to over 3,500 health care providers, including general practice physicians, psychiatrists, physician assistants, nurse practitioners, registered nurses, psychologists, mental health counselors, and social workers. Examining current adaptations used by these health care providers will allow for well-informed design of interventions that promote awareness and provide information regarding available and utilized methods to meet the needs of consumers, differentiating methods used by community size and type of care provider.

Methods

Participants

Potential participants in Alaska and New Mexico were randomly selected from the licensure lists for 8 health care provider groups: primary care physicians, psychiatrists, physician assistants, nurse practitioners, registered nurses, psychologists, social workers, and mental health counselors. For selection purposes, all licensees in the 8 provider groups were categorized as *urban* or *rural* based on their addresses (provided by the licensing boards). Next, for each of the 8 provider groups, 125 rural and 125 urban participants were selected from each state. However, as some groups did not have 125 individuals (e.g., rural psychiatrists), the entire group was sampled and the parallel group (e.g., urban psychiatrists) was sampled to the degree necessary to total 250. Even with sampling all potential participants, some groups did not have enough providers to total 250; thus, the final identified sample was 3,695.

Of 3,695 potential participants contacted, 1,546 (723 from Alaska and 823 from New Mexico) provided useable data. useable overall response rate for the survey was 52.2%, with 50.6% in Alaska and 53.7% in New Mexico. The rural response rate was 49.8% (53.3% in Alaska and 47.3% in New Mexico), for a total of 662 rural respondents; the urban response rate was 54.1% (48.7% in Alaska and 60.4% in New Mexico), for a total of 896 urban respondents. Table 1 provides participants' demographic information, organized by state.

Instrument

Following procedures recommended by Dillman,¹⁸ participants were asked to complete a survey (described below) that asked them to describe their experiences in providing physical or mental health care to their clients/patients. Survey procedures began with a letter informing the potential participants that they had been selected to receive a survey and to expect it to arrive by mail. Two weeks later, a packet consisting of an informed consent form, survey, non-respondent form, and payment form was mailed to all potential participants. Participants were informed that they would be paid \$50 for returning a completed survey and that the source of funding for this project was the National Institute on Drug Abuse. Four weeks later, a reminder card was sent out to potential participants who had not returned a survey or a non-respondent card. Another complete packet was sent two weeks later to potential participants who had not returned a completed survey or non-respondent card, followed by another reminder card two weeks later.

The survey was developed based on extensive qualitative work conducted over a 2-year period. is qualitative work included 82 key informant interviews and 25 focus groups (with a total of 163 participants) conducted with health care professionals, patient advocates, and health care administrators in Alaska and New Mexico. These qualitative data were analyzed to identify convergent and divergent themes that represent the constellation of issues surrounding rural practice in general, issues with regard to rural practice vis-à-vis ethics and stigma, and issues of community consent and rural health disparities. Combining this information with existing literature, we constructed and piloted items to develop a 21-page survey. This survey included 336 items separated into the following 10 sections: ethical challenges, perceptions of illness stigma, training and resource needs, experiences in providing health care, barriers faced in providing care, adaptations to barriers, treatment issues related to providing care to minority groups, resource needs, training needs, and provider practice characteristics. Individual items were rated on an 11-point rating scale, ranging from 0 (*not at all or never*) to 10 (*very much or always*). The survey required approximately 60 to 90 minutes to complete. The survey has been the basis for several manuscripts, each drawing on separate survey sections (e.g., barriers,¹ minority health care disparities,⁵ training needs,¹⁶ caseloads¹⁹).

The current study involved the analysis of responses to the items included in the section of the survey that addresses informal practices utilized by health care professionals to adapt to barriers to care. For these items, participants were asked to rate on an 11-point scale that ranged from 0 (*Never*) to 10 (*Always*) how often they used each of 37 different adaptations to barriers encountered in providing ethical and effective health care. Examples of such items include spending extra time with clients, making referrals, establishing a referral network, and meeting clients after hours. All 37 items are listed in Table 2 and were derived from the extant conceptual literature and extensive interviews and focus groups with providers in both states.

Data analyses

To reduce the number of dependent variables, a principal components analysis with equamax rotation was conducted on the 37 items. Results revealed 8 factors with an eigenvalue equal to or greater than 1, accounting for 58.4% of the variance. Using scree plot and content analyses, the ideal solution was found to be 5 factors, accounting for 48.8% of the variance. These 5 factors can be labeled *Integrating Community Resources*, *Individualizing Treatment Recommendations*, *Safeguarding Confidentiality*, *Broadening Provider Expertise*, and *Adjusting Treatment Style*. Items that loaded on multiple factors were retained for the factor on which the item had the highest factor loading. Table 2 provides coefficient alphas and item factor loadings.

Data analyses were based on participants' community size, provider type, and state. For *community size*, we initially categorized participants into rural or urban for the random selection process. For this categorization, we used the definition provided by the Federal Office of Management and Budget.²⁰ According to this definition, a metropolitan statistical area (MSA), as opposed to a non-metropolitan statistical area (non-MSA), is a geographic area consisting of a city with at least 50,000 residents or an urbanized area with a total population of at least 100,000 (75,000 in New England). However, because of criticisms in the literature regarding such rural-urban dichotomies,^{4,10,21} for *community size*, we used a different approach. We used cluster analyses based on contiguous population size to define community size for the participants' communities. The resulting definition includes four distinct categories: urban, small urban, rural, and small rural. An urban community was defined as a geographic area containing a population of 35,000 people or more; a small urban community was defined as a geographic area containing a population of 15,000 to 34,999 people; a rural community was defined as a geographic area containing a population of 3,500 to 14,999 people; and a small rural community was defined as a geographic area containing a population of fewer than 3,500 people.

For *provider type*, the eight health care provider groups were combined into two conceptually-related groups. Physicians, physician assistants, nurse practitioners, and registered nurses were combined into the group labeled *physical health care providers*; psychologists, psychiatrists, social workers, and mental health counselors were combined into a group labeled *behavioral health care providers*.

Based on these categorizations, the primary statistical analysis used was multivariate analyses of variance (MANOVA) with three independent variables of *State* (two levels: New Mexico and Alaska), *Provider Type* (two levels: physical health providers and behavioral health providers), and *Community Size* (four levels: urban, small urban, rural, small rural), and the five factors as the dependent variables. If the overall MANOVA was statistically significant, univariate analyses of variance and Duncan's Range Test were conducted. Cohen's *d* was used to determine the effect size for significant findings.

Results

Results of the 2 (State) X 2 (Provider Type) X 4 (Community Size) MANOVA revealed significant overall main effects for *Community Size*, $F(15,4191)=10.99$, $p<.001$, and *Provider Type*, $F(5,1518)=113.74$, $p<.001$. As shown in Table 3, the main effect for *State*, and all two-way or three-way interactions did not reach statistical significance.

Community size

Univariate analysis of variance revealed significant differences for Community Size on all five factors, namely, Integrating Community Resources, Individualizing Treatment Recommendations, Safeguarding Confidentiality, Broadening Provider Expertise, and Adjusting Treatment Style. All univariate results are provided in Table 3. For Integrating Community Resources, all four levels of Community Size differed significantly from one another. Table 4 provides means and standard deviations for all effects. As shown, providers in small rural communities were the most likely to integrate community resources to address perceived barriers to care, followed in decreasing order by providers in rural, small urban, and urban communities. e largest mean difference, between providers in small rural communities and providers in urban communities, reflected a medium effect size (Cohen's $d = .55$). For Individualizing Treatment Recommendations, providers in urban communities were less likely to individualize treatment recommendations than providers in small urban, rural, and small rural communities, who did not differ from one another. e largest mean difference, between providers in small rural communities and providers in urban communities, reflected a very small effect size (Cohen's $d = .13$). For *Safeguarding Confidentiality*, providers in urban communities were less likely to take special precautions to safeguard confidentiality than providers in small urban, rural, and small rural communities, who did not differ from one another. e largest mean difference between urban and small urban reflected a medium effect size (Cohen's $d = .56$). e only other difference was between providers in rural and providers in small urban communities; however, this difference reflected a negligible effect size (Cohen's $d = .04$).

For *Broadening Provider Expertise*, all four levels of Community Size differed significantly from one another. Providers in small rural communities were most likely to take measures to broaden their expertise in attempt to address barriers to care followed in descending order by providers in rural, small urban, and urban communities. e largest mean difference between small rural and urban providers reflected a medium effect size (Cohen's $d = .52$). For *Adjusting Treatment Style*, providers in small rural communities were more likely to adjust their treatment styles than providers in rural, small urban, and urban communities, who did not differ significantly from one another. e largest mean difference between small rural and urban providers reflected a moderate effect size of (Cohen's $d = .38$).

Provider type

Significant differences were revealed between the two provider types on all five factors. Behavioral health care providers were more likely than physical health care providers to integrate community resources (Cohen's $d = .67$; medium effect size), individualize their treatment recommendations (Cohen's $d = .81$; large effect size), take special measures to safeguard their clients' confidentiality (Cohen's $d = 1.0$; large effect size), and adjust their treatment (Cohen's $d = .27$; small effect size). Physical health care providers were more likely than behavioral health care providers to take measures to broaden their expertise (Cohen's $d = .20$; small effect size). e means for the *Provider Type* main effects are shown in Table 4.

Rank order of adaptations by community size

Based on average ratings, Table 5 provides the highest ranked of the 37 individual adaptation items, separated by rural and urban providers. Although being a role model for healthy behavior was the most common adaptation used by both rural and urban providers, considerable differences existed in the use of other adaptations. Rural providers were more likely to use adaptations that were associated with client interactions such as adjusting language, spending more time with clients, and minimizing a status difference between the client and provider. Urban providers were more likely to use adaptations that were associated with training, integrating familial support, and designing care recommendations around clients' strengths.

Discussion

This large-scale survey of health care providers in rural and urban areas of Alaska and New Mexico revealed that rural and urban providers have significantly different approaches to dealing with barriers to ethical and effective health care delivery. When looking at the five clusters of adaptations to health care barriers, providers in rural communities compared with urban providers showed the greatest differences with regard to broadening provider expertise, followed by how they integrate community resources and safeguard confidentiality. Behavioral and physical health care providers differed significantly in the degree to which they endorsed adaptations. Following is a detailed discussion of each of the five adaptation clusters.

Integrating community resources

Providers' community size was strongly related to the integration of community resources into service provision, with small rural providers using this set of adaptations the most, followed by rural, small urban, and urban providers. Specifically, the smaller the community, the more the providers consulted community leaders or elders regarding cultural issues, participated in community events, and integrated additional community resources. e smaller the communities, the more its providers have contact with the influential leaders of the community, which provides them the opportunity to discuss how best to support the community. Additionally, providers in smaller communities have much less anonymity than do urban providers; thus, if they do not participate in community events, their absence is noticed. It may well be that if providers in small communities do not attend community events, they would run the risk of being identified as outsiders, a label that in turn may have a negative impact on community members' willingness to seek their services and to form a therapeutic alliance with him or her.

Provider type had a significant effect on the degree to which providers integrated community resources into their practice, with behavioral health care providers using this set of adaptations more often than physical health care providers. is may occur due to the nature of concerns discussed between behavioral health care providers and their clients. at is, often, behavioral health concerns are related to community level stressors, such as the loss of industry, environmental changes, or community level tragedies (such as, floods, fires, or suicides). Such presenting problems may lead behavioral health care providers to utilize available resources to supplement their treatment protocols. They may also lead to community efforts towards prevention.

Broadening provider expertise

Community size was significantly related to providers' use of adaptations that serve to broaden their expertise, with small rural providers using this set of adaptations the most, followed by rural, small urban, and urban providers. is finding is consistent with previous research documenting the lack of specialization and opportunity for provider consultation in smaller communities.^{22,23} It is likely that the smaller the community, the greater the need for providers to become broader and more proficient in their health care skills. These providers also will

have a greater need for a comprehensive network for referrals as they will be confronted with many issues outside their own scope of practice that will require assistance from specialists.

In addition to differences by community size, significant dissimilarity was revealed between provider types, with physical health care providers indicating a higher frequency of adaptations designed to expand their expertise than is found among behavioral health care providers. One possibility is that physical health care providers have more *opportunity* for providing referrals and engaging in more training. At is, access to referrals and care decrease as specialization increases, with a particular dearth of mental health or behavioral health care providers in rural areas.²⁴ For example, a nurse practitioner may need to make a referral to a general practicing physician, who in turn may need to make a referral to a specialist (e.g., a cardiologist). In comparison, behavioral health care providers may be limited in both their available referral network and their need for specialists.

Safeguarding confidentiality

Community size had a significant relationship to the means through which health care providers safeguard patients' confidential information. Urban providers rated such adaptations significantly lower than did providers from all other community sizes, which did not differ from each other. This finding lends support to the notion that concerns regarding confidentiality are more prevalent in smaller communities and pressingly require creative solutions. Confidentiality challenges in smaller communities arise in many contexts and providers recognize that the ensuing lack of anonymity and possibility for stigmatization greatly affects their patients. To ensure that patients are comfortable seeking services and feel that their privacy remains protected, providers in small communities take increased steps to safeguard confidentiality.

Provider type had a similar relationship with the safeguarding of client's confidentiality, with behavioral health providers reporting a greater frequency than physical health providers of safeguarding confidentiality. Due to the stigmatization of mental illness, it is not surprising that behavioral health providers make extra efforts to maintain their clients' confidentiality.

Individualizing treatment recommendations

Community size was not related to whether providers choose alternative treatment approaches as adaptations to barriers to health care. However, provider type did have a significant relationship with such utilization. Specifically, behavioral health care providers reported using alternative treatment approaches as adaptations to treatment barriers significantly more often than physical health care providers did. Often, behavioral health care requires a time-intensive effort to establish therapeutic alliance, a process that may be greatly enhanced by alternative treatment approaches. Alternatives may focus on clients' strengths and abilities, as well as integrating informal and formal supports. Physical health care providers may engage in similar treatment approaches, but do so less frequently than their behavioral health care colleagues.

Adjusting treatment style

The finding that providers in small rural communities differed from those in all other geographic settings with regard to how they adjust their interactive style with their patients or clients is not surprising. Care providers in small communities must take great care to use natural helpers in their community and must adapt to the cultural styles of their patients. This may require a slowing down of language or an adjustment of office hours. It certainly appears to mean that friends and family members are more likely to become involved in a patient's care than they would be in another setting. Behavioral and physical care providers were similar in this respect.

Implications

The fact that providers in rural communities adapt differently from how urban providers adapt in the face of barriers to care has implications for policy-makers, educators, and care providers in rural communities. First, funding agencies can provide adequate funds for the adaptations frequently used by rural health care providers. For example, adequate funding is necessary for rural providers as they seek out additional supervision or training given that they must treat or at least refer patient with presenting concerns outside of providers' specialty. Second, the fact that rural providers must make major adaptations to meet the needs of their patients provides additional evidence of the need for more providers and, especially, more specialists in rural communities. Without addressing this need for more providers, patients in rural communities will continue to suffer the serious effects of ongoing health disparities. Technological advances and the use of telemedicine for distance service delivery will provide some relief from this problem, but are not cure-alls.

Third, these findings contribute to the body of knowledge that rural providers face circumstances that are quantitatively and qualitatively different than those faced by urban providers. Providers who will work in rural communities must secure specialized training in rural health care issues. These findings provide the basis for such training that should be integrated into established university and medical school training programs. These adaptations also point to the need for continuing education opportunities for rural providers, with adequate provision of backup services while providers leave their communities for such training. With better preparation and ongoing training, the burn-out and rapid turnover of rural providers may be reduced, resulting in more stable and consistent rural health care services.

Limitations

Several limitations must be borne in mind when interpreting these findings. First, results are based on self-report and, as such, may not precisely reflect respondents' actual behaviors. Second, the overall response rate was 52.2%, which means that nearly half of the potential participants declined to participate. However, given the fact that the individuals targeted were busy professionals and that the survey took up to an hour to complete, the response rate seems understandable; it is also relevant that response rates to surveys in general have been declining for at least two decades.²⁵ Third, although a significant amount of time and effort was put into developing and refining the survey, including the use of expert consultants and extensive piloting efforts, no validity or reliability data have been collected thus far. Fourth, our community size classification schema is based on our data rather than other classifications schemas such as those established by the United States Department of Agriculture (<http://www.ers.usda.gov/Briefing/Rurality/>). However, given the particular population characteristics of Alaska and New Mexico, the established schemas would have not given us the opportunity to look at finer nuances of community size. Nevertheless, our classification schema corresponds closely to the USDA schemas and is more intuitively sound.

Conclusion

Health care providers in rural areas face a variety of barriers, including heterogeneity of rural inhabitants, economic impediments, geographic impediments (e.g., distance, travel, and weather), financial constraints, cultural differences, lack of access to specialty care, and confidentiality concerns. This study differentiated adaptations utilized by a diverse range of communities and provider types to overcome health care barriers. The study demonstrated that providers from small rural and rural communities are more likely than small urban and urban providers to find ways to integrate community resources, safeguard client confidentiality, and seek out additional expertise. In addition, behavioral health providers appear to integrate community resources, find alternative treatment approaches, and make efforts to safeguard

confidentiality more than physical health providers, whereas physical health providers make more attempts or have more opportunities to broaden their expertise.

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Appendix—Recommendations for Improving Rural Health Care

System integration and flexibility

- Integration of physical health care, mental health care, and substance abuse treatment under one roof
- Development of a system that provides a single health care team, a single patient medical chart, and a single billing system
- Collaboration across disciplines
- Integration of social workers and mental health care providers into primary care practices for screening, consultation, and support
- Development of flexibility through creative strategies such as mobile clinics, non-traditional clinic hours, and house calls

Community outreach

- Creation of sustainable community alliances and collaborations
- Establishment of networks of natural helpers, including clergy, families, neighbors, shelters, jails, peace officers, peer supports, schools, and so forth to make the most effective use of formal and informal local resources
- Involvement, collaboration, and solicitation of local supports and through tapping into existing local strengths and values

Professional outreach

- Good communication and regular contact with distant specialists who serve in consultant roles, perhaps using telemedicine technology
- Self-awareness to know when to ask for help and when to initiate referrals
- Measures to increase skills vis-à-vis identification and diagnosis, emergency care, competent referral
- Development of rural outreach systems for mutual support and guidance and to reduce professional isolation

Cultural sensitivity and awareness

- Community-specific health-care-planning with focus on partnership building
- Responsiveness to the unique needs of each individual rural communities
- Capacity for building trust with local residents
- Willingness to engage in advocacy role that facilitates help-seeking
- Reduction or elimination of miscommunication between the provider and consumer due to language or cultural barriers

Table 1
PARTICIPANT DEMOGRAPHICS BY STATE

Demographic variable	Alaska n (%)	New Mexico n (%)
Total sample size	723 (46.8)	823 (53.2)
Professional affiliation		
Physician	77 (10.7)	73 (8.9)
Psychiatrist	28 (3.9)	99 (6.4)
Physician assistant	105 (14.5)	124 (15.1)
Nurse practitioner	120 (16.6)	130 (15.8)
Registered nurse	113 (15.6)	108 (13.1)
Psychologist	62 (8.6)	101 (12.3)
Social worker	104 (14.4)	105 (12.8)
Mental health counselor	114 (15.8)	111 (13.5)
Gender		
Men	225 (31.1)	279 (33.9)
Women	498 (68.9)	544 (66.1)
Hispanic descent		
Yes	19 (2.6)	134 (16.4)
No	696 (96.3)	686 (83.4)
Ethnicity		
African American	12 (1.7)	18 (1.2)
Alaska Native	13 (1.8)	0 (0)
American Indian	30 (4.1)	32 (3.9)
Asian American	6 (0.8)	12 (1.5)
White	621 (40.2)	625 (75.9)
Other	12 (1.7)	14 (1.7)
No response	12 (1.7)	5 (0.6)
Marital status		
Married	536 (74.5)	618 (74.9)
Single	83 (11.5)	106 (12.9)
Divorced/widowed	100 (13.9)	98 (11.9)
No response	4 (.6)	1 (0.1)
Age in years		
Mean (SD)	48.8 (9.17)	49.0 (9.8)
Community of residence		
Urban	420 (58.1)	477 (58.0)
Rural	303 (41.9)	346 (42.0)
Current community		
Years lived in Mean (SD)	13.1 (10.8)	15.5 (12.2)
Providing care in	622 (86.0)	625 (73.9)
Lived in rural community		
(1 year or more)		
Yes	630 (88.2)	665 (82.0)
No	84 (11.8)	146 (18.0)
How long in years Mean (SD)	20.7 (14.6)	20.3 (13.9)
Worked in rural community		
(1 year or more)		
Yes	585 (81.5)	600 (73.8)
No	133 (18.5)	213 (26.2)
How long in years Mean (SD)	10.8 (8.6)	10.5 (8.9)

Table 2
PRINCIPAL COMPONENT ANALYSIS FOR PROVIDER ADAPTATIONS

Scales and items	Factor loading
Integration of community resources, $\alpha = 5.88$	
Consulted community leaders or elders to learn about ethnic/cultural issues in providing care	.73
Consulted community leaders or elders to increase your ability to provide effective health care	.72
Participated in community events to better understand values and customs of your clients/patients	.70
Worked with sources in your community (e.g. churches, schools, law enforcement) to increase support for you	.66
clients/patients	
Spent time learning more about community resources	.58
Provided community level health education	.54
Talked with clients/patients about the challenges of assuring confidentiality in their community	.54
Encouraged people in your community to travel to other communities for care to safeguard their confidentiality	.50
Met clients/patients outside your office or in their homes	.44
Provided education for staff so that they could deal more effectively with clients/patients	.44
Individualizing treatment recommendations, $\alpha = 5.84$	
Designed care recommendations for clients/patients that focus on their strengths	.70
Recommended use of informal support sources to clients/patients (e.g. churches, schools, community elders, family networks)	.71
Recommended use of formal support programs to clients/patients (e.g. AA, illness specific support groups)	.67
Modified standard advice for care to what you knew that your clients/patients were likely able to achieve	.54
Was a role model of healthily behavior for your clients/patients	.55
Got more education or training yourself to enhance or broaden your skills	.57
Suggested alternative or complementary approaches to care	.51
De-emphasized status differences between yourself and your clients/patients	.44
Safeguarding of confidentiality, $\alpha = 5.79$	
Did not report certain information about clients/patients to others	.73
Did not enter certain sensitive information into records	.71
Maintained sensitive information only in alternative records or files	.67
Limited access by colleagues or staff to sensitive files or records	.65
Used techniques such as using coded information or identifiers	.59
Provided alternative entrances/exits into your practice site	.46
Avoided interactions with clients/patients in public settings if you crossed paths with them	.41
Discussed with clients/patients how to interact in public settings if you encounter each other	.40
Broadening of provider expertise, $\alpha = 5.72$	
Referred your client/patient to another provider to obtain additional expertise	.79
Discussed with clients/patients the limits of provider expertise, including your own, that exists within your community	.60
Referred your clients/patients to another provider to assure confidentiality	.56
Built a network of providers for referrals	.53
Spent "extra" time talking with clients/patients about their problems or care	.53
Had your staff spend extra time with clients/patients	.47
Adjusting treatment style, $\alpha = 5.71$	
Adjusted your use of language to accommodate your clients/patients (including use of translators)	.60
Talked with family or friends of clients/patients who can provide support or information	.59
Talked with your clients/patients about their family or friends who can provide support or information	.55
Adjusted your pace to a level that was comfortable for your clients/patients	.51
Was available to clients/patients before or after hours	.30

Table 3

F-STATISTICS AND PROBABILITIES FOR THE MANOVA^a

	Overall MANOVA	Integrating community resources	Individualizing treatment recommendations	Safeguarding confidentiality	Broadening provider expertise	Adjusting treatment style
Community size	F(15,4191)=10.99, p<.001	F(3,1522)=7.34, p<.001	F(3,1522)=5.69, p<.001	F(3,1522)=10.14, p<.001	F(3,1522)=10.57, p<.001	F(3,1522)=6.78, p<.001
Provider type	F(5,1518)=113.74, p<.001	F(1,1522)=96.65, p<.001	F(1,1522)=179.28, p<.001	F(1,1522)=281.61, p<.001	F(1,1522)=11.18, p<.01	F(1,1522)=27.22, p<.01
State	F(5,1518)=2.52, p>.05	F(1,1522)=4.03, p>.05	F(1,1522)=.25, p>.05	F(1,1522)=.47, p>.05	F(1,1522)=.26, p>.05	F(1,1522)=.85, p>.05
Community size	F(15,4191)=1.02, p>.05	F(3,1522)=.83, p>.05	F(3,1522)=1.43, p>.05	F(3,1522)=.26, p>.05	F(3,1522)=1.42, p>.05	F(3,1522)=1.52, p>.05
X Discipline						
Community size	F(15,4191)=1.04, p>.05	F(3,1522)=1.36, p>.05	F(3,1522)=.18, p>.05	F(3,1522)=.06, p>.05	F(3,1522)=.84, p>.05	F(3,1522)=.94, p>.05
X State						
Provider type X	F(15,4191)=.33, p>.05	F(1,1522)=.01, p>.05	F(1,1522)=.30, p>.05	F(1,1522)=.12, p>.05	F(1,1522)=.18, p>.05	F(1,1522)=.92, p>.05
State						
Community size	F(15,4191)=.70, p>.05	F(3,1522)=1.13, p>.05	F(3,1522)=.52, p=.38	F(3,1522)=.35, p>.05	F(3,1522)=.15, p>.05	F(3,1522)=1.47, p>.05
X Provider type						
X State						

^aBold values represent significant findings.

Table 4

MEANS AND STANDARD DEVIATIONS FOR FIVE ADAPTATIONS FACTORS BY COMMUNITY SIZE, PROVIDER TYPE, AND STATE

		Community				Provider type		State	
		Small rural (n=147)	Rural (n=366)	Small urban (n=386)	Urban (n=643)	Physical health (n=850)	Behavioral health (n=692)	Alaska (n=722)	New Mexico (n=820)
Integrating community resources	M	4.59	4.08	3.64	3.06	3.2	4.09	3.76	3.46
	SD	1.91	1.81	1.97	1.88	1.92	1.89	1.97	1.94
Individualizing treatment recommendations	M	6.70	6.70	6.67	6.48	6.04	7.28	6.63	6.57
	SD	1.47	1.49	1.68	1.76	1.68	1.32	1.63	1.67
Safeguarding confidentiality	M	2.75	2.71	2.80	2.42	1.85	3.56	2.66	2.58
	SD	1.92	1.90	1.90	1.91	1.57	1.86	1.94	1.89
Broadening provider expertise	M	5.57	5.23	4.96	4.73	5.13	4.81	5.02	4.95
	SD	1.42	1.55	1.60	1.66	1.64	1.58	1.63	1.62
Adjusting treatment style	M	6.61	6.21	6.11	6.03	5.94	6.4	6.1	6.19
	SD	1.68	1.66	1.77	1.75	1.77	1.66	1.78	1.69

Table 5
RANK ORDER OF ADAPTATIONS MOST OFTEN REPORTED BY RURAL AND URBAN PROVIDERS

Item	Rural ranking	Urban ranking
Was a role model of healthy behavior for your clients/patients	1	1
Adjusted your use of language to accommodate your clients/patients (including use of translators)	2	6
Spent "extra" time talking with clients/patients about their problems or care	3	7
De-emphasized status differences between yourself and your clients/patients	4	5
Got more education or training yourself to enhance or broaden your skills	5	2
Talked with your clients/patients about their family or friends who can provide support or information	6	3
Designed care recommendations for clients/patients that focus on their strengths	7	4
Recommended use of informal support sources to clients/patients (e.g. churches, schools, community elders, family networks)	8	8
Adjusted your pace to a level that was comfortable for your clients/patients	9	10
Modified standard advice for care to what you knew that your clients/patients were likely able to achieve	10	11
Recommended use of formal support programs to clients/patients (e.g. AA, illness specific support groups)	11	9