Treatment Outcome Research in Rural Pediatric Populations: 
The Challenge of Recruitment

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Objective Pediatric treatment outcome research focusing on the physical and mental health of children 
living in rural areas is limited, despite the immense need. Participant recruitment is a significant barrier 
faced by pediatric researchers working in rural communities. The purpose of this article is to review 
challenges recruiting children and families to participate in treatment outcome research and identify 
effective and innovative procedures to enhance recruitment in rural populations. Methods A selected 
review of the pediatric and adult rural recruitment literature and researchers’ experiences are 
discussed. Results Challenges to recruitment include researchers being viewed as outsiders by rural 
community members, population size and density of rural communities, unique aspects of rural culture, 
and higher rates of poverty and lower educational achievement in rural areas. Conclusions Strategies to 
improve recruitment and recommendations for future recruitment efforts in pediatric psychology treatment 
outcome research for children and families from rural areas are provided.

Key words children; families; recruitment; rural; treatment outcome.

Introduction
Roughly, 75% of the counties in the United States are considered rural, which accounts for ~20% of the population 
(Hart, Larson, & Lishner, 2005) or around 60 million people. In addition, rural children account for >20% of 
the children living in the United States. (Clark, Savitz, & Randolph, 1999). Unfortunately, rural children experience 
significant health disparities compared to their non-rural peers. For example, children living in rural areas are at 
increased risk for experiencing acute and chronic medical conditions (Cayce et al., 2005), more likely to be obese 
(U.S. Department of Health and Human Services, 2001), and more likely to experience unintentional injuries, such as 
drowning, burns, and motor vehicle and bicycle accidents (Eberhardt et al., 2001; Macpherson et al., 2004; 
Svenson, Spurlock, & Nypaver, 1996). Children living in rural areas are also less likely to be immunized compared 
to urban children (Kelleher, Taylor, & Rickert, 1992), which puts them at an increased risk of contracting life 
threatening diseases (Diekema & the Committee on Bioethics, 2003). Moreover, residents of rural areas often 
lack adequate health insurance (Bailey, 2004) and live in areas often characterized by a health care professional 
shortage (Pathman, Konrad, Dann, & Koch, 2004). Given all these factors, it is not surprising that children 
from rural areas have a 30% higher rate of death compared to children living in urban areas (Eberhardt et al., 2001).

Reducing health disparities experienced by rural residents is a goal of Healthy People 2010 and the US 
Developing and evaluating prevention and treatment
programs to improve the long-term physical and mental health of rural residents is essential to this goal. These improvements will, in large part, be driven by research. Unfortunately, a review of the literature reveals that pediatric psychology research focusing on rural children and families is sparse, especially treatment outcome research. Data also suggest that rural residents are less likely than urban residents to participate in clinical trials research (Baquet, Commisskey, Mullins, & Mishra, 2006). This is somewhat understandable given the smaller population density and other challenges inherent with conducting research in rural settings, as well as the historical lack of extensive and sustained support from granting agencies for research focusing on rural populations in the United States (Cudney, Craig, Nichols, & Weinert, 2004) and Canada (Pong, 2000). However, the dearth of research focusing on children and families from rural areas needs to change. While research conducted with children from non-rural settings is more common and provides a sound base for developing treatment strategies for youth across settings, there are important differences between these populations that can limit the generalizability of findings. People living in rural areas can be identified as a cultural group with unique traits, values, and needs (Harowski, Turner, LeVine, Schank, & Leichter, 2006). In addition, ethnic and minority populations are overrepresented in some rural areas (Stamm, Lambert, Piland, & Speck, 2007). The lack of pediatric research focusing on children from rural areas limits knowledge about these children (Kelleher et al., 1992), as well as the ability to identify interventions that are effective for use in this population.

There are specific aspects of rural settings that make conducting pediatric psychology research particularly challenging, especially given the low population density. Though issues related to all aspects of study design are always important to consider, the recruitment of an appropriate number of children and families that is reflective of the economic and cultural diversity of the community is often a significant barrier to completing, and even proposing, well-designed randomized controlled trials in rural areas (Cudney et al., 2004). This is in part because recruiting families to participate in treatment outcome research in rural communities is characterized by unique challenges (Rodriguez, Rodriguez, & Davis, 2006). Thus, developing strategies to enhance the recruitment of children and families is critical for the success of treatment outcome research in rural settings.

A PubMed search, for the purposes of this review, was conducted using various combinations of the key words “rural,” “treatment,” “children,” and “family,” which identified 75 potential articles from 1976 to November 2010. Review of the articles revealed that only four of these were treatment outcome studies conducted with children in rural settings in the United States. An additional PubMed search using the terms “rural,” “recruitment,” “treatment,” “children,” and “family” revealed even fewer articles relevant to recruitment related issues in rural pediatric settings (18 initially identified, with two specifically focusing on the recruitment of children into research programs). Therefore, there is a dire need to focus on recruitment issues when conducting rural pediatric intervention research. The purpose of this article is to first review challenges and barriers to conducting treatment outcome research in rural settings, based on previous research and our own experiences, with a specific focus on the recruitment of children and families into intervention trials. Second, we will discuss recommendations for overcoming these barriers and enhancing recruitment of children and families to treatment outcome research conducted in rural settings. Lastly, we will provide suggestions related to reporting recruitment and enrollment information in future rural pediatric treatment outcome research.

**Recruitment Barriers and Challenges**

Researchers face numerous challenges and barriers when recruiting rural youth for research projects. Most of the challenges reviewed are particularly relevant or specific to working with families from rural areas, although some are likely experienced by researchers in other settings or when working with other groups of people.

**Researchers as Outsiders**

Any time researchers have a different background than potential participants or communities they work, be it racially, culturally, or geographically, there is potential that he or she may be perceived as an outsider by the community. Being viewed as an outsider can hinder trust and perceptions of common values, motives for research, and investment in the community, all of which can hamper community member recruitment and participation in research.

**Distrust**

Being viewed by rural families as an outsider can foster distrust of researchers and impact recruitment efforts. Campbell and Gordon (2003) reported that in some rural communities “noncommunity members are distrusted and viewed with suspicion” (p. 432). Another area of possible distrust may be related to the social and political views of
rural families. Rural residents report higher levels of social and political conservatism when compared to residents from other areas (Aten, Mangis, & Campbell, 2010). These deep-rooted cultural beliefs may lead to distrust if rural families perceive researchers do not share or respect their beliefs. Such distrust can greatly decrease the willingness of families to participate in, or even learn about, potentially beneficial intervention programs.

**Negative Perceptions**

The community’s perceptions about the motivation and purpose for the research study may also negatively impact participant recruitment. Being seen as an outsider may lead to impressions that researchers are more interested in their research than the needs of individual families or the community as a whole. In addition, rural residents may not feel researchers adequately know them, their community, or understand their personal struggles due to their different environmental contexts (rural vs. urban) and experiences. This could lead to families viewing the research as irrelevant to themselves or their community and negatively impact study enrollment.

**Population Size and Density**

The definition of rural inherently means that there are small population sizes and low population density in specific areas (U.S. Census Bureau, 2002). These characteristics may lead to small, close-knit communities, as well as infrastructure barriers related to transportation and other services, which can negatively impact research recruitment efforts.

**Small Close-knit Communities**

The small, close-knit structure of rural communities can impact the success of recruitment in numerous ways. Small close-knit communities can be beneficial to researchers. If prominent people in the community support research endeavors and the research is perceived positively recruitment efforts can be successful. The close-knit nature of rural communities can help spread the word about opportunities to participate in treatment programs that may ultimately benefit the community.

However, if influential community members are unsupportive of the research project or are unhappy with research procedures the close-knit nature of some rural areas may be detrimental to research recruitment efforts. For example, if families are unhappy because they are not able to participate due to inclusion/exclusion criteria, negative views about the program can spread in the community, making it less likely other families would participate. In addition, some rural communities have limited racial and ethnic diversity among its residents (Campbell & Gordon, 2003), which can make it more difficult for researchers to meet guidelines related to including families from diverse racial and ethnic groups in treatment studies (e.g., National Institutes of Health; Hohmann & Parron, 1996).

**Lack of Anonymity**

Perceived lack of anonymity is another potential recruitment barrier. Families in rural communities are more likely to know each other well and feel comfortable asking questions about each other (Mann, Hoke, & Williams, 2005). Anonymity may be hard to achieve in rural communities because residents often want to know details about other residents, as well as want to be known by others (Campbell & Gordon, 2003). Therefore, rural families may be reluctant to participate in research examining potentially stigmatizing issues, such as weight loss or the treatment of psychological disorders, if they believe their participation may become public knowledge.

**Coercion to Participate**

Families may feel coerced to participate in treatment outcomes studies if they are recruited by someone that is highly trusted in the community or whom they know well (Pierce & Scherra, 2004). This could especially be an issue when pediatric participants and their families are recruited from pediatricians’ offices, family practices, or county health departments. If there are few options of medical providers in the community and families feel that their refusal to participate could be detrimental to their relationship with their health care provider, the likelihood of coercion may be increased. Considering how coercion can impact recruitment efforts, as well as ethical obligations, is important when conducting research in rural settings.

**Transportation Difficulties**

The transportation difficulties encountered by rural families can impact recruitment efforts. In most rural communities the availability of public transportation is limited. Accessible public transportation and roadways are often inadequate and unreliable (Cudney et al., 2004), while some rural roads may not be open during specific seasons due to weather conditions (Pierce & Scherra, 2004). Rural families also may not drive regularly or may be uncomfortable driving at certain times of the day, which may hinder recruitment and participation if families have to drive extended distances to participate in research programs. In our experience, some rural parents, as well as our research team members, have been uncomfortable driving after dark because rural roads are often less well-lit and are more
remote than suburban and urban areas (Janicke et al., 2011). Therefore, transportation difficulties could pose a significant barrier for recruitment and participation when research program meetings are held in the evenings.

**Limited Technology**

The limited access to technology experienced by rural families may also impact the success of recruitment efforts. The availability of technological advances in rural areas occurs at a slower rate than urban and suburban areas. In some rural areas, the availability and quality of Internet and cell phone service are sparse, and rural residents often have to pay more for these services compared to residents in urban and suburban areas (Bertot, 2003). These infrastructure issues can limit the applicability of using certain types of technologies to recruit participants, as well as incorporate them into research methods. Limited access to some technologies can also contribute to communication difficulties between participants and researchers during the recruitment process, as well as during ongoing treatment intervention trials.

**Rural Culture**

Aspects of the rural culture and the “rural life cycle” (Cudney et al., 2004) may impede the success of recruiting children and families to participate in pediatric psychology treatment outcome research.

**Religious Involvement**

The extent to which rural families are involved in religious activities can impact recruitment efforts in numerous ways. Churches and religious services are often a large cultural aspect of the rural community (Campbell & Gordon, 2003). Churches play a significant role in rural communities by helping families when problems arise (Campbell & Gordon, 2003), as well as by providing social, political, and financial resources (Aten et al., 2010). Church leaders may serve as advocates for the community and aid in recruiting rural families to participate in intervention studies. Church members can also inform each other about research programs, which can help recruitment. However, the church schedule may impact the feasibility of conducting treatment outcome research. For example, many rural families we have worked with, commonly participate in religious services or activities on weeknights, in addition to attending services during the weekend. Thus, this cultural routine may hinder availability and ultimately study participation that should be considered when scheduling research recruitment and treatment activities. In addition, rural families’ relationships with clergy and religious leaders may impact their comfort level related to participating in discussions and answering questions about personal and family issues. For example, rural residents may be more comfortable talking with church leaders about psychological issues (Campbell & Gordon, 2003) instead of discussing them in the context of an intervention research program.

**Socioeconomic Status**

A disproportionate amount of the nation’s poor live in rural areas (Kelleher et al., 1992). Rural families have lower overall incomes than families living in urban areas (Bailey, 2004) and those with lower socioeconomic status are often less likely to participate in research. The greater incidence of poverty in rural areas leads to a number of barriers related to recruiting rural families to participate in treatment outcome studies.

**Education and Occupational Issues**

Rural residents receive less formal education and are more likely to be underemployed compared to residents from urban areas (Kelleher et al., 1992). Rural parents are therefore more likely to work multiple jobs and have non-traditional work shifts. These realities faced by rural families could create scheduling issues that may make it impractical and difficult for parents to participate in research programs with their children.

**Utilization of Resources**

Poor rural families may be less likely to participate in research because their most immediate concerns may center on meeting the daily needs of their family (e.g., food, acute health care, shelter, safety). Additionally, any discretionary income may go towards medical expenses. Rural residents are more likely to be uninsured (e.g., common rural occupations do not provide medical care, working multiple jobs, etc.) and they often do not receive adequate care for acute and chronic medical conditions (Bailey, 2004). Costs for gas or car repairs can also be a significant barrier, as economically disadvantaged families often have less reliable transportation. Finally, parents may be forced to work multiple jobs or work unexpected overtime hours to help make ends meet, which can make attending regularly scheduled intervention meetings difficult. Given the economic realities for financially disadvantaged families, some may find the potential benefits of participating in health-related research do not outweigh the costs, even if the research program provides an important service not otherwise available in the community.

Despite the numerous barriers that may impact the success of participant recruitment in pediatric treatment outcome studies in rural settings, researchers can
overcome a number of these barriers to help increase recruitment and enrollment of children and families in rural treatment outcome research.

**Strategies to Improve Recruitment**

Given the barriers and challenges of recruiting children and families for treatment outcome research in rural settings, we present a variety of strategies based on previous research and our own experiences that can help overcome these barriers. The strategies are organized into three categories: improving and expanding community involvement, tailoring recruitment materials to appeal to rural residents, and utilizing multiple recruitment strategies.

**Community Involvement**

One important way to improve recruitment in pediatric rural treatment outcome research is to collaborate with community members while developing study and intervention protocols. Community involvement in the research process can help increase ownership and acceptance of the program by members of the community. Involving prominent organizations and/or individuals embedded in the rural culture who can serve as advocates for the research project may reduce the “outsider” perception and facilitate communication between the research team and the community.

**Community-based Participatory Research**

Community-based participatory research (CBPR) is one method that some rural researchers have utilized to increase community involvement (Brody et al., 2006). CBPR involves: active community collaboration and involvement during every phase of research, sharing expertise between community members and researchers, community driven research programs, dissemination of research results to the community in common terms, culturally appropriate research and intervention approaches for the community, and identifying the community as an entity with specific needs and concerns (O’Fallon & Dearry, 2002). In addition to CBPR, collaborating with organizations and members of the community can enhance recruitment efforts.

**Community Organizations and Members**

Collaborating with community organizations already established in rural communities, such as churches, youth centers, service organizations and clubs, and health departments, can help recruitment efforts. Two programs currently underway in Southern rural counties involve a partnership between university-based researchers and the Cooperative Extension Service (CES) network (Janicke et al., 2011; Perri et al., 2008), which is located in almost every county in the United States. Collaborating with local organizations can also be helpful to overcome transportation barriers rural families may face. For example, organizations may provide local facilities, which could reduce potential travel time for families, assist with organizing carpools to research appointments, or allow researchers to have access to organizational vans or buses.

Besides collaborating with organizations, securing endorsements for the research project from key members of the community can be especially helpful, as they can help facilitate a greater perception of legitimacy and provide important consultation during the research process. Important issues community members should consult on include providing ideas about how to best reach families in the community, offer suggested language to use on recruitment materials, increase researchers’ sensitivity to issues unique to the rural community, and raise awareness of additional community resources that may help with recruitment. Including residents of local communities as study staff or interventionists, as appropriate, can help researchers recruit participants, implement treatment programs, and assist with data collection.

Other disciplines can shed light on additional ways for researchers to overcome being viewed as outsiders. For example, ethnographic researchers interact with community groups and individuals in structured and unstructured settings in order to increase their understanding of norms, values, and systems in a community, as well as to increase trust (Brayboy & Deyhle, 2000; Hodkinson, 2005). In rural pediatric psychology research, these interactions can help enhance researchers rural cultural competence, improve the likelihood of being viewed as an insider, and increase the willingness of families to participate in treatment outcome research (Hodkinson, 2005). Overall, community collaboration and relationships with prominent organizations or individuals can be great ways to lessen the perceived differences between researchers and participants.

**Recruitment Materials**

Recruitment materials can improve the success of recruitment efforts and should be designed specifically for rural populations. Researchers would benefit from using common language and avoiding concepts that may be unfamiliar or culturally taboo in rural communities (Cudney et al., 2004). Culturally, taboo issues may include terms used when examining religion in rural populations (spirituality vs. religiousness; Cudney et al., 2004), as well as
cultural fads and liberal views (Campbell & Gordon, 2003). Picture and artwork included in recruitment materials should also be applicable to rural settings. Since many rural families have to use long distance telephone services to contact university based research personnel, including a toll-free telephone number on recruitment materials would be important (Velott, Baker, Hillemeier, & Weisman, 2008) and can limit resources families have to use to contact researchers.

Similar to developing recruitment materials when working with other populations, it may be beneficial to include information about inclusion and exclusion criteria on recruitment materials in order to minimize the chances that rural families may become upset due to not being able to participate in a research program. Developing alternative treatment strategies available for rural families that do not meet inclusion criteria for a treatment study can also be helpful in mitigating negative perceptions from those in the community who are not eligible to participate. For example, researchers could work with their Institutional Review Board (IRB) to explore whether families could receive treatment as a “non-research participant.” While there are some potential negative aspects to this approach, such as the extra time and resources required, it may avert the development of negative feelings from members of the rural community. These issues are especially important when recruiting and working with families from rural areas due to the close-knit nature of many rural communities.

**Recruitment Strategies**

Multiple recruitment strategies are often necessary to meet recruitment goals when conducting research in rural areas (Velott et al., 2008). However, which strategies are most effective depend on the type of research being conducted and the population of focus. The following are recruitment strategies that have been successfully used during previous research conducted in rural settings and based on the authors’ own experiences conducting treatment outcome research in numerous rural counties.

**Direct Mailings**

Direct mailings can be extremely useful in recruiting community members into research programs. Direct mailings, where potential participants are provided information about the study and then asked to contact researchers to learn more, has been a strategy used to recruit children and families (Janicke et al., 2008, 2011). Address lists targeting a desired population can be purchased from various mailing companies, who can also provide printing and direct mailing services. This method can be effective in reaching large numbers of potentially eligible rural families with a minimal amount of time and effort. However, the downside of this approach is that families may discard recruitment materials as junk mail without reading them, as well as the costs associated with bulk mailing and printing recruitment literature. The effectiveness of this recruitment strategy alone is unclear, as response rates are variable. For example, in rural adult nursing research response rates have ranged from 34.0% to 2.2% (Cudney et al., 2004).

**Public School Systems**

Public school systems are important community organizations that serve most rural children and can be a key to improving research recruitment efforts (Janicke et al., 2011). The distribution of study brochures and flyers through schools can be a good way for parents to become aware of research programs available to children and families. In fact, some studies focusing on rural children with asthma have recruited children and families in this manner, as well as implemented interventions in the school setting (Rodehorst, Wilhelm, & Stepans, 2006; Walker et al., 2008). One issue for researchers to consider during recruitment is whether to specifically target the population of interest or distribute brochures to all children in schools. Distributing information to a limited group of children may reduce costs, but can lead to the alienation of some families. Distributing to all children may cost more, but may yield better results by spreading information to more members of the community. Our experience to date has been that most school systems are very open to helping distribute information, especially if they see the benefit to their students and the local community.

Being viewed by school personnel and parents as more integrated into the community can also lead to more families participating in the research program. There are a number of ways to do this. While recruiting families for pediatric weight management interventions in rural areas we have found attending school orientation nights can be a good way to increase parent’s awareness of opportunities to participate in programs offered in their community (Janicke et al., 2011). Collaborating with local parent–teacher organizations (PTOs) can also be a good technique to inform parents about research programs and lead to increased dissemination to community members. Additionally, elected members of PTOs are likely well-respected within the community, and thus their support of research programs may help to assuage some misgivings among rural families. Giving workshops or presentations about important topics that are of interest to PTOs (e.g., parenting tips, stress management), at school orientation meetings, or to other groups in the
community can increase exposure to the research program and build acceptance and good will in the community.

**Medical Offices**

For pediatric psychology research projects, distributing brochures and flyers in pediatrician and family physician offices, as well as community health departments, can be beneficial. Some researchers have had success with placing brochures in waiting rooms of offices for various health care providers (Velott et al., 2008). Health care agencies such as Women, Infants, and Children (WIC), have also been involved in recruiting pediatric populations for rural research. It can also be very helpful to visit medical offices and public health departments in person, usually with an appointment, to personally discuss the program with medical professionals and answer questions they may have about it. Often such meetings can be facilitated by collaborators in the community or other key community members that support the research.

**Churches**

Due to the important role that religion plays for many families in rural communities, recruiting families through churches can be helpful. Researchers can provide congregations with brochures and flyers to distribute after services. Announcements about research programs can also be placed in church bulletins or newsletters. If possible, we have found it helpful if a pastor, or even a member of the research team, spend a few minutes at the end of a service to provide a brief description of the project to the congregation. Research team members can then be available after the service to distribute program brochures, answer questions, and talk directly with families. In fact, researchers in urban settings have utilized churches to recruit families for participation in intervention programs delivered through churches (Resnicow et al., 2001; Resnicow, Taylor, Baskin, & McCarty, 2005). Recruitment through churches has also been used to effectively recruit Latino and African American adults and families living in rural communities (Perri et al., 2008; Rodriguez et al., 2006).

In addition, researchers can attend community events held by churches (such as church health fairs or family days) in order to meet families and community members, and to distribute brochures about the research program. This one-on-one face time can be very helpful in building acceptance and reducing the perception of researchers being outsiders. Investing in quality time with community members (and not rushing out in the middle of a service or event) shows respect and care for the community and assuages suspicions that the research team is simply trying to meet a recruitment quota.

**Newspapers**

Local newspapers can also be a good way to disseminate information about research programs and recruit families living in rural areas (Cudney et al., 2004; Janicke et al., 2008). Researchers or a community advocate can contact local newspapers and see if they would be willing to run a story or news brief about the research program. Providing press releases and being available for interviews to answer questions about the research program can further facilitate local newspapers publishing a story about an intervention research project. Recently, newspapers with whom we have contacted in rural areas have requested pictures of the research team or graphics in order to make the article more appealing to their readers. In general, we have found that paying to have ads placed in local newspapers is less effective than published articles, as these are often small and are in sections of the newspaper that are less visible to readers. However, Velott et al. (2008) found that placing ads in newspapers was successful when published in the same edition as an article highlighting the research project. Thus, the format and timing of newspaper publications should be considered.

**Businesses**

Placing study brochures and flyers in prominent local businesses, with the permission of business owners, can be successful when recruiting families in rural areas. For example, researchers recruited rural African American men for a study about cancer screening in African American owned barbershops (Jones, Stevees, & Williams, 2009). Community members acting as consultants can identify businesses commonly frequented by rural families, such as grocery stores and banks. In addition, placing inserts with information about the research opportunity in utility bills that are mailed to all residents in the area or including a study brochure in paychecks distributed by large employers may also be effective ways to recruit rural families to participate in research.

**Informational Booths**

Setting up informational booths at county fairs and other community events can expose additional rural residents to the research project. However, our experience with this recruitment strategy in rural communities has not been as successful as other methods discussed above. Yet, attending these events can be a good way for members of the research team to meet other professionals in the community who can share ideas about getting the word out, as well as lead to increased acceptance and integration in the community.
Compensation

Due to the increased costs of transportation experienced by rural residents, reasonable participant compensation to offset travel expenses may help improve recruitment. If rural families are made aware of the financial incentives they may receive for participating (e.g., assessment and treatment meetings) they may be more willing to participate in treatment outcome research. As such, information on participant compensation should be included in recruitment materials and literature. The amount of compensation should depend on the amount of time and effort families spend participating, as well as what costs they may incur for services such as transportation and child care (Mann et al., 2005); however, this requires researchers to obtain ways to pay for participant compensation, such as through federal or private grants. Being aware of the different models of compensating families for participating in research (Dickert & Grady, 1999) and consulting with community members, as well as IRBs, about the appropriate amount of compensation is important in order to reduce the possibility of coercion. In addition to monetary compensation, providing rural families with services such as sibling child-care and transportation may be additional incentives for participating and can help off-set barriers to participation they may experience (Janicke et al., 2011; Rodriguez et al., 2006).

Rural researchers should also consider compensating families that refer other eligible families to participate in treatment outcome studies. For example, Rodríguez and colleagues (2006) found that asking families to encourage friends to participate in a research project and offering compensation for successful referrals helped increase participant recruitment and enrollment. However, some important ethical issues regarding confidentiality and potential coercion by influential community members should be considered and discussed with community consultants and research approval agencies before implementing such a strategy.

Rural Life Cycle

Rural families may engage in seasonal agricultural, farming, and ranching activities, such as spring planting, branding, harvesting, and round-up times, which has been described as the “rural life cycle” (Cudney et al., 2004) and may impact participation in treatment outcome studies. Arranging recruitment around seasonal activities may help decrease the competing demands experienced by families living in rural areas and increase the likelihood of their recruitment and participation in treatment outcome studies (Cudney et al., 2004). Given the variety of recruitment strategies that rural researchers can utilize it can be difficult to determine and identify the most effective recruitment strategies. While conducting research in rural settings we have found distributing brochures through mailing lists, public schools, and pediatrician/doctors offices, as well as enlisting the support and endorsement of key community leaders, to be the most effective recruitment strategies. Yet, we have also utilized other strategies that have led to additional families (although small in number) participating in our research programs. The most effective strategies depend on the rural population researchers are trying to recruit and the type of treatment research being conducted, which highlights the importance of collaborating with people familiar with the rural community.

Tailoring Interventions for Rural Residents

We would be remiss if we failed to mention the importance of actual intervention programs. Specifically, one very important method of improving recruitment efforts, as well as the overall success of treatment outcome studies, is to tailor intervention programs to the needs of rural families, and more specifically to rural families in your particular region or community. One potential problem is that sometimes interventions that are developed and delivered in non-rural settings are applied in the same manner to rural populations without considering the unique features of rural settings and populations. This can hinder recruitment efforts and positive treatment outcomes. Moreover, it can also lead to frustration on the part of participants and community supporters as they may not feel researchers are respecting and understanding important aspects of their individual lives and communities. Word-of-mouth can spread negative perceptions of the program and hinder future enrollment. However, interventions that are tailored to specifically address unique aspects of rural communities can lead to positive word-of-mouth, and hopefully more positive treatment outcomes. Clearly, long-term progress in the field will be enhanced by also reporting how interventions were specifically designed for rural residents and the processes and collaborations that were involved in developing the study design, most notably recruitment and treatment protocols.

Recommendations for Reporting Recruitment and Enrollment Information for Pediatric Psychology Research in Rural Settings

There is a need for a larger research emphasis on the physical and emotional health of children from rural areas.
The field of pediatric psychology should be at the forefront of advancing future research in this area. Despite potential barriers to recruitment, such as being viewed as outsiders and aspects of the rural culture, conducting pediatric research in rural settings can be successful. Communicating with other rural researchers about effective strategies utilized to overcome recruitment barriers via conferences, forums, symposiums, published articles, and consultation can help facilitate the success of rural intervention trials. A key question becomes what additional information should be reported to help facilitate successful recruitment and treatment outcome research with rural populations.

First, we recommend that researchers keep accurate and detailed records and describe their recruitment efforts in more detail, such as the specific types of community organizations with whom they consult and collaborate, as well as how participants learned about the study. Including this specific information in treatment outcome publications will inform readers about the rural populations being targeted for participation and how representative participating children and families are in the community, which ultimately can provide implications about helpful recruitment strategies for future researchers. There is a significant lack of research focusing on recruitment in rural settings. Currently, there is a need for both qualitative and quantitative research in this area. Based on the current literature, utilizing a combination of recruitment strategies appears to be the most effective (Velott et al., 2008). However, this also leads to greater participant recruitment costs. As such, researchers should track the costs associated with recruitment and attempt to identify which methods are the most efficient use of time and money in rural communities.

Second, the definition used to identify participants or communities as rural is important for researchers to report. There are numerous ways that “rural” can be classified, such as sociocultural, occupational, and ecological (Kelleher et al., 1992). The federal government utilizes both the Office of Management and Budget (OMB) definition, which identifies counties as either metropolitan or non-metropolitan, and the Census Bureau (Hart et al., 2005), which uses rural and urban distinctions based on populations of specific areas. Reporting which criterion was used would ensure that specific characteristics and needs of rural communities are identified, as well as provides information about the types of treatments that have been examined and are effective when working in rural communities.

The impact or reach of recruitment strategies utilized by rural pediatric researchers should also be examined and reported. Reach, according to the reach, efficacy or effectiveness, adoption, implementation, and maintenance (RE-AIM) framework (Glasgow, Lichtenstein, & Marcus, 2003; Glasgow, Vogt, & Boles, 1999), refers to the participation rate and representativeness of participating families compared to the local population, which is important to determine whether families who could benefit from programs will have access to them. Reach can inform researchers about how effective recruitment methods are at targeting rural children and families to participate in treatment outcome research. As such, researchers should keep detailed participation and population records in order to determine what proportion of the target population participates in an intervention (Glasgow et al., 1999). If strategies are ineffective at reaching rural families then it is important to implement other methods that may be more successful. In addition, evaluating factors that impact reach is vital, such as barriers to recruitment and participation (e.g., costs, transportation, inconvenience, social and environmental culture) and the population size and qualities of families that may benefit from the intervention (Glasgow et al., 2003). Documenting and reporting such information is important for all intervention studies, but particularly so for those conducted in rural settings given the unique challenges with recruitment and conducting research in these areas. Better understanding how these factors can impact reach can lead to researchers identifying and utilizing more efficient recruitment strategies.

Other aspects of the RE-AIM framework, such as adoption and implementation, are also important for rural pediatric researchers to contemplate while designing and conducting treatment outcome research. Adoption refers to the type of settings where interventions may be implemented (e.g., rural health departments, rural schools, etc.), as well as identifying setting specific barriers for utilizing programs (Glasgow et al., 1999). The extent to which an intervention can be applied in real-world settings is characterized by implementation. These two aspects of the RE-AIM framework should be stressed when treatments are created and disseminated so they are realistic and feasible to implement in pediatric rural settings.

It is important for us to acknowledge the issue of participant retention as a complimentary, and equally important, issue to participant recruitment affecting the success of pediatric treatment outcome studies conducted in rural settings. The barriers previously discussed in this article are also likely to impact researchers’ ability to retain rural families in treatment programs. In addition, many of the recruitment strategies discussed throughout this article will ultimately impact retention of study participants. For example, conducting interventions in community settings such as churches, schools, and city or county offices
(e.g., extension offices) may be a good way to maintain involvement in intervention programs in rural communities. These and other community organizations can provide an additional method for researchers to maintain contact with hard to reach participants. In addition, previous researchers have built personal relationships with families, made phone calls after missed sessions and scheduled make-ups, compensated families for travel expenses, and mailed newsletters as ways to retain families participating in rural pediatric intervention programs (Janicke et al., 2008, 2011). In addition, individualizing treatment components to the extent that they are still consistent with treatment protocol can also be helpful in keeping families engaged in treatment. Similar to the state of the literature on strategies to assist in treatment recruitment, there is also a dearth of research focusing on retention strategies in rural pediatric treatment research. For a more detailed discussion of participant retention across other settings and study populations, please see Gul and Ali (2010) and Ingoldsby (2010).

In conclusion, rural communities in the United States have unique characteristics and needs. However, the need for future research focusing on physical and mental health interventions for children and families is a characteristic they share. Future treatment outcome research is an important step toward reducing health disparities in rural communities and in meeting an important goal of Healthy People 2010. However, there are barriers to conducting research in rural communities that are important to consider before advances in future research can occur, such as being viewed as outsiders and population size. Qualitative research, such as conducting focus groups, and quantitative research, such as reporting recruitment methods and percentages, is greatly needed. For example, there is little information about the effectiveness of specific recruitment strategies, such as direct mailings, in rural pediatric populations. In addition, future research should examine the potential impacts of barriers to participation in treatment outcome interventions, such as negative perceptions and the rural life cycle. The recruitment of rural children and families plays an important role in research design and implementation, as well as the overall success of intervention trials. Identifying and utilizing multiple recruitment strategies, as well as collaborating with influential organizations and members of rural communities, can increase the impact of future research on the lives of rural children and families. The dissemination and success of various recruitment strategies, as well as outcome data from intervention trials, are critical to improving the quality and utilization of future research, and ultimately reducing health disparities for children living in rural settings.

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References


Dickert, N., & Grady, C. (1999). What’s the price of a research subject? Approaches to payment for research...
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