Rural Parents Mental Health Service Delivery Preferences: Overcoming Barriers to Care.

Jeffrey H. Ellison
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Rural Parents’ Mental Health Service Delivery Preferences: Overcoming Barriers to Care

A thesis

presented to

the faculty of the Department of Psychology

East Tennessee State University

In partial fulfillment

of the requirements of the degree

Master of Arts in Psychology

by

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August 2011

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Keywords: Rural Mental Health, Children’s Mental Health, Barriers to Treatment Seeking, Innovative Services, School-Based Mental Health, Integrated Primary Care, Tele-Mental Health
ABSTRACT

Rural Parents’ Mental Health Service Delivery Preferences: Overcoming Barriers to Care

by

Jeffrey H. Ellison

Unique barriers prevent parents in rural areas from seeking mental health services for their children. The implementation of innovative models of service delivery may reduce these barriers’ impact on rural parents’ treatment seeking.

The purpose of this study was to determine: 1) parents’ willingness to use innovative service delivery models; 2) barriers that parents perceive to seeking treatment in each of the 4 service delivery models, and; 3) the relationship between perceived barriers and willingness to seek help in the context of 4 service delivery models.

Surveys were distributed to parents of children attending school in several counties in rural Appalachia.

Results showed that parents perceived different barriers for different service models and that perceived barriers affected willingness differently depending on the model asked about.

These results suggest that the use of innovative models (e.g., telehealth) may be acceptable in rural areas as alternatives to traditional mental health services.
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CHAPTER 1

INTRODUCTION

Current data show a significant discrepancy between the number of people who need mental health services and the number who actually seek and use services (World Health Organization, 2001). Recent studies suggest that less than half of individuals with diagnosable mental illnesses are receiving mental health treatment (Kessler et al., 2003; Wang et al., 2005). Of the individuals who are receiving treatment, only about half are receiving care from specialty mental health care providers (Kessler et al., 2003). This disturbing trend is consistently noted across diagnoses, age groups (World Health Organization, 2001), ethnicities, and regions of the United States (Hauenstein et al., 2006).

The gap between mental health needs and treatment is even wider in rural areas (Hauenstein, et al., 2006; Heflinger & Christens, 2006; Petterson, Williams, Hauenstein, Rovnyak, & Merwin, 2009). Though incidence levels of many psychiatric problems are similar across urban and rural populations, people in rural communities seek and access treatment at a much lower rate (Hauenstein et al., 2007). This disparity suggests unique barriers exist for residents in rural areas preventing them from seeking and/or receiving appropriate mental health services (Fox, Merwin, & Blank, 1995; Hauenstein et al., 2007). Barriers could include: 1) shortages of qualified mental health professionals (resulting in increased need for transportation and distance traveled; Campbell, Kearns, & Patchin, 2006; Fox et al., 1995; Jameson & Blank, 2007), economic disparities (i.e., rural families are more likely to be poor, less likely to possess private insurance, and more likely to use an already overburdened Medicaid system; Fox, et al., 1995; Heflinger & Christens, 2006; Roberts, Battaglia, & Epstein, 1999), lack of knowledge regarding mental health problems (i.e., rural residents are more likely to identify psychological problems in terms of physical symptoms; Heflinger & Christens, 2006; Hill & Fraser, 1995) and
increased stigma regarding mental health disorders and treatments in rural communities (Rost, Smith, & Taylor, 1993; Rost, Fortney, Fischer, & Smith, 2002; Judd et al., 2006).

Jameson and Blank (2007) argue that, in order to address these barriers, psychologists must: 1) undertake specialized training for rural work, considering integration with primary health care providers (i.e., primary care physicians, social workers, and health administrators); 2) use a variety of technological services (such as telehealth technologies) to broaden treatment accessibility; and 3) actively research, develop, and implement innovative methods to continue to increase rural mental health treatment utilization.

The following review discusses the literature regarding traditional mental health care specific to rural children and barriers to accessing those services. In addition, this review describes innovative service delivery models hypothesized to reduce these barriers. In keeping with Jameson and Blank’s recommendations, a research study is proposed to assess rural consumers’ interest in these models relative to identified barriers.

**Children’s Mental Health in Rural Areas**

At present, there are few studies that directly compare prevalence rates of rural children’s psychosocial concerns to those of urban children. Large-scale studies of the general population show that between 5% and 26% of children have at least one ongoing psychosocial concern (Bourdon, Goodman, Rae, Simpson, & Korerz, 2005; Burns et al., 1995; Costello, Angold, Burns, Erkanli, Stangl, & Tweed, 1996; Costello, Egger, & Angold, 2005; Fombonne, E., 1994; Roberts, Attkisson, & Rosenblatt, 1998). Comparatively, in the largest study of rural children conducted to date, including 4,500 school-age children from the southeastern U.S., Costello et al. (1996) found rates of psychosocial concerns were 20.3%. Similarly, Polaha, Dalton, and Allen (2011) found that 21% of rural parents who were surveyed in the waiting room of their child’s pediatrician’s office reported that their child exhibited clinically significant behavioral or
emotional problems. In addition, Cooper, Valleley, Polaha, Begeny, and Evans (2006) conducted a study in which observers noted concerns raised by parents or physicians during pediatric primary care visits in rural Nebraska. Results showed that about 33% of all pediatric primary care visits for children ages 4 and up yielded a psychosocial concern. While there is emerging evidence that children with psychosocial concerns present in rural pediatric primary care at higher rates than in urban areas, due to methodological differences between these various studies (e.g., parent vs. youth report, rating scales vs. interview using DSM-III criteria, sample selection, etc.), it is difficult to make rural-urban comparison.

Although evidence regarding the differences in prevalence rates of psychosocial concerns in rural and urban children is difficult to interpret, profound differences have been shown in mental health treatment use (Heflinger & Christens, 2006). For example, the National Survey of American Families (NSAF) shows that 8.4% of urban children have had at least one mental health visit, while a significantly lower 7% of children living in rural areas have had a similar experience (Howell & McFeeters, 2008). Another study (also based off the NSAF) found that when holding all other variables constant (i.e., parental education, insurance type, family income, etc.), rural children were 20% less likely to have a mental health visit than their urban peers (Lambert, Ziller, & Leonardson, 2008).

**Barriers to Mental Health Treatment Seeking**

**Shortages of Providers in Rural Communities**

Consistent with the above stated disparities rural children have less access to mental health services than their urban peers do. Provider shortages have been identified as the most obvious and significant barrier in accessing these services (Goldsmith, Wagenfeld, Manderscheid, & Stiles, 1997; Jameson & Blank, 2007). For example, the American Psychological Association (n.d.), in their report for the Office of Rural Health, claims that
practitioners, services, and infrastructure are in short supply in almost all rural areas. Fox et al. (1995) state that mental health providers in all four core areas (psychiatry, psychology, psychiatric nursing, and social work) are grossly underrepresented in rural areas across the United States. In fact, Holzer, Goldsmith, and Ciarlo (2000) found that slightly less than half of rural U.S. counties are without at least a master’s level psychologist, while three out of four rural counties are lacking a psychiatrist. More specifically, 70% of nonmetropolitan rural Appalachian counties are considered mental health professions shortage areas (Hendryx, 2008).

This lack of specialized mental health providers makes it extremely difficult for people living in rural areas to obtain appropriate mental health services (Campbell, Kearns, & Patchin, 2006; Simmons, Huddleston-Casas, & Berrv, 2007). A 2001 study by Fox, Blank, Rovnyak, and Barnett surveyed 209 rural residents who screened positive for at least one mental health concern. The study found that 29% of the people surveyed felt that the times that mental health services were available in their area were inconvenient, 22% felt that the services were not available at all, 14% did not know where to go to find appropriate services, and 12% did not have adequate transportation to the services even if they were available. Given these varied difficulties that adults report when faced with accessing mental health services, it is no surprise that rural residents are less likely to receive any, or at least adequate, mental health treatment .

Economic Disparities

Another barrier that may prevent people in rural areas from using existing mental health services involves their ability to pay (Howell & McFeeters, 2008). On average, families living in rural areas have lower incomes and higher probabilities of unemployment than those living in other areas (APA, n.d.). In fact, 88% of the counties in the United States that have poverty rates above 20% are also considered rural (Simmons et al., 2007). Hauenstein and colleagues (2006) found that people with a low income (in relation to their needs) who were living in rural areas
were significantly less likely to have seen a mental health provider than were their nonrural counterparts. Similarly, a study by Steele, Dewa, and Lee (2007), found that people with lower incomes were more likely to report both acceptability and availability of services as major barriers to mental health treatment seeking.

Similarly, access to quality health insurance poses a significant barrier. Lacking employer provided insurance, low wages, and high poverty rates prevent many people from being able to purchase their own insurance (Fox et al., 1995). In a survey of rural adults with mental health concerns, Fox et al. (2001) found that 30% of people report that lacking health insurance played a major role in their decision not to seek mental health treatment. Also, while Medicaid may be available to many of the low income residents, only 33% of those who are in need actually receive Medicaid funding (Fox et al., 1995).

**Rural Culture and Values**

Jameson and Blank (2007) identify another barrier to mental health treatment that is often associated with rural areas—many people who live in these rural communities do not feel as if they actually need mental health treatment. A study by Fox, Blank, Berman, and Rovnyak (1999) found that of the rural Southerners who screened positive for a mental health concern (and were given educational materials about where to find help), 81% reported that they did not think that they needed treatment and 90% had not sought help within a month. Fox and colleagues (1995) suggest that some of these attitudes could result from self-efficacious and individualistic values that are common in rural areas. In addition, people living in rural areas are more likely to have a high sense of personal responsibility for their own (and their family’s) health (and mental health). These feelings of personal responsibility for one’s own problems are central to the attitude displayed by many people living in these areas that outside assistance is not needed (Judd et al., 2006).
Stigma

Stigma is often cited as one of the most important barriers to treatment-seeking and follow-through (Bray, Enright, & Easling, 2004; Corrigan, 2004; Jameson & Blank, 2007; Judd et al., 2006). Stigma is characterized as fear, distrust (U.S. Department of Health and Human Services, 1999), discrimination, prejudice, and stereotyping that often results from the act of labeling (Corrigan, 2004). Stigmatization is thought to begin as the negative labeling and stereotyping of one person (or group) by another (person or group). This labeling and stereotyping eventually results in the separation and devaluation of the individual (or group) by the other individual (or group). As a result, the individual or group that was initially labeled becomes discriminated against (Link & Phelan, 2001).

According to Corrigan (2004) the direct discrimination of one person or group by another is called public-stigma. Another form of stigma is self-stigma, which occurs when individuals in the stigmatized group begin to internalize the discrimination and stigma resulting in feelings of guilt, shame, and fear. In other words, members of the stigmatized group begin to devalue themselves, which has a negative effect on their behavior and values. For example, a person experiencing self-stigma resulting from a mental health diagnosis may convince himself or herself that he or she is unable to work or live successfully or independently (Corrigan, Watson, & Barr, 2006). Only one study has examined stigma around mental illness in children (The National Stigma Study; e.g., see Pescosolido et al., 2008). Results show that negative public attitudes regarding mental health disorders in children are very prevalent (Mukolo it al., 2010; Pescosolido et al., 2007; Pescosolido et al., 2008).

In order to avoid labeling, discrimination, and exclusion (resulting from public stigma) and feelings of guilt, shame, and fear (resulting from self-stigma), many people may simply choose not to seek out mental health treatment (Corrigan, 2004). For example, in one study 60%
of those with mental health concerns who had not sought treatment identified stigma as the reason why (Issakidis & Carter, 2001). Other studies have also demonstrated a positive relationship between perceived stigma and avoidance of help-seeking (e.g., Komiya, Good, & Sherrod 2000; Vogel, Wade, & Haake, 2006). To date, however, there has only been one study that has shown evidence of this relationship in a rural setting. A study by Rost, Smith, and Taylor (1993) found that greater levels of stigma regarding the label of depression was correlated with lower rates of treatment utilization in rural communities. Rost et al. (1993) suggests that this disparity may stem from the fact that information travels quickly and efficiently through the tight-knit the social networks in rural communities, resulting the decision not to seek treatment for fear of being labeled as “mentally ill”.

Rural communities are often characterized as having strong social support networks, more conservative values, and a greater lack of privacy, thus, it is postulated that the people who inhabit them may perceive greater stigma around mental illness and seeking mental health services (Bray, Enright, & Easling, 2004; Jameson & Blank, 2007). This is particularly true in the rural South and Appalachia, where conservative religious beliefs, traditional values, and self-reliance are emphasized (Fox et al., 1995). Indeed, recent epidemiological research in Appalachia shows that residents cite stigma as one of the top three reasons why they did not receive mental health treatment or counseling and that this reason was cited more often among residents of rural Appalachia (28%) than in a comparison sample outside the region (22%; Zhang et al., 2008).

“De Facto” Care for Rural Children’s Mental Health Concerns

Mental Health Treatment in Primary Care

Given the significance of the above stated barriers, rural parents who have concerns about their child’s behavior or emotional well-being are likely to seek services outside of specialty
mental health. In fact, Kelleher, McInerny, Gardner, Childs, and Wasserman, (2000) found that pediatric primary care is currently the chief delivery setting for child mental health care nationwide. Unfortunately, in primary care, time constraints (Cooper et al., 2005), lack of training (in mental health assessment, diagnosis, and treatment; Geller & Muus, 2000; deGruy, 1997) and poor reimbursement (deGruy, 1997) all affect the quality of the mental health treatment that is provided. For example, surveys collected from a sample of primary care physicians suggests that many doctors do not feel that they have the time, training, or support to adequately address mental health problems in young children (Cawthorpe, 2005).

These shortcomings often foster a lack of emphasis on standardized screening and diagnostic measures in primary care that could result in higher rates of undiagnosed and misdiagnosed patients (Fox et al., 1995). Studies have indicated that pediatricians typically identify a mental health need in anywhere between 1% and 16% of the children that they see (Wells, Kataoka, & Asarnow, 2001), while prevalence data taken in primary care settings suggests that mental health needs actually exist in 17% to 27% of children (Wells, Kataoka, & Asarnow, 2001). Further, Kelleher et al. (1997) found that a large number of pediatricians failed to recognize children with psychosocial problems as identified by the Pediatric Symptom Checklist. Moreover, it is well documented that psychosocial problems in children have been consistently under-identified in primary care (Kelleher et al., 1997; Wells, Kataoka, & Asarnow, 2001).

Another problem with the treatment of children’s mental health problems in primary care is the increasing over-prescription of psychotropic medication and the underuse of psychotherapy (Voss Horrell, 2008). For example, the American Academy of Child and Adolescent Psychiatry (AACAP) suggests that antidepressant medication should only be prescribed to children who fail to make adequate progress in psychotherapy (AACAP, 2007).
However, in primary care visits by a child diagnosed with depression between 1995 and 2002, the number of antidepressant prescriptions written increased from 47% to 52%. During this same time period, psychotherapy referrals for this population significantly decreased from 83% to 68% (Ma, Lee, & Stafford, 2005). Given these decreasing rates of referrals for psychotherapy, it is even more disturbing that 59% of the people who received a primary care referral to a mental health specialist failed to attend even one appointment (Axelrad, Pendley, Miller, & Tynan, 2008). Furthermore, of those families that do attend their initial outpatient mental health appointment, between 40% and 60% drop out of treatment after only one or two sessions (Armbruster & Fallon, 1994; Kazdin, Holland, & Crowley, 1997; U.S. Department of Health and Human Services, 1999).

Mental Health Treatment in Schools

The public school system is another setting that is known for providing mental health assessment and intervention services to children in rural areas (Burns et al., 1995). In a survey of both rural and urban Appalachian residents (ie. The Great Smokey Mountain Study of Youth), Burns and colleagues (1995) found that, among the approximately 16% of children who were actively receiving mental health services, 75% were receiving services provided by their schools. The successes that schools have had in providing children with increased access to mental health services can be traced back to the fact that all children are required to attend school, and thus are more likely to be available for treatment and less likely to terminate treatment early (Hoagwood & Erwin, 1997). Also, with the enactment of the Education of All Handicapped Children Act (PL 94-142), education systems became legally responsible to make provisions for children with emotional and physical disabilities (United States Congress, 1975). Unfortunately, however, there is continued confusion (and differing opinions) regarding the role of both schools and community mental health services in the provision of treatment to children, thus leading to
neglected mental health needs (Jacob & Coustasse, 2008). Because of training and funding inadequacies, schools typically only address children’s mental health needs in the context of increasing academic performance. As a result, children whose problems are not manifest in such a way as to cause academic impairment are not eligible to receive treatment under the current school-based mental health system. (Kutash, Duchnowski, & Lynn, 2006; Weist, Lowie, Flaherty, & Pruitt, 2001)

**Alternative Models of Care**

Between the education system and the primary care setting, children in all areas have at least some access to mental health services. Unfortunately, as discussed above, both of these settings have innate inadequacies associated with the provision of these services (Burns et al., 1995). While the primary care setting can provide population based access to basic mental health services, time constraints (Cooper et al., 2005), lack of training (Geller & Muus, 2000; deGruy, 1997) and poor reimbursement (deGruy, 1997) all greatly reduce the quality of mental health treatment that can be provided. Similarly, while the education system has far reaching access to provide children with certain services, a lack of funding, training, and time prevents problems from being addressed that do not directly impact academic functioning, thus leaving many children without access to appropriate care (Kutash et al., 2006).

In order to address these concerns and increase rates of mental health treatment seeking, it is imperative that mental health professionals begin to: 1) work collaboratively with other professionals and organizations (ie. schools; Jacob & Coustasse, 2008) and consider integration with primary health care providers (i.e. primary care physicians, social workers, and health administrators); 2) broaden treatment accessibility by using a variety of technological services (such as telehealth technologies); and 3) actively research, develop, and implement innovative methods to continue to increase rural mental health treatment use (Jameson & Blank, 2007). This
section outlines three innovative service-delivery models hypothesized to increase treatment
seeking and use by circumventing many of the aforementioned barriers typically faced by
families seeking mental health treatment in rural communities.

**Integrated Primary Care**

Integrating mental health treatment into the primary care setting has been identified as a
promising practice for rural health (Jameson & Blank, 2007). According to Byrd, O’Donohue,
and Cummings (2005), integrated care is “the process and product of the medical and mental
health professionals working collaboratively and coherently toward optimizing patient health
through biopsychosocial modes of prevention and intervention” (p. 2). This integration could
take many forms, including the colocation of behavioral health providers in primary care clinics;
the provision of quick access to behavioral consultation services for primary care providers; and
the provision of targeted chronic disease management protocols and treatments by behavioral
health specialists (O’Donohue, Cummings, Cucciare, Runyan, & Cummings, 2006). The goals of
such integration include improved patient outcomes, increased patient satisfaction, more efficient
use of manpower and resources, and increased access to appropriate services through a reduction
in treatment seeking barriers such as stigma (Blount, 2003; James & O’Donohue, 2009).

This model may have particular advantages for rural communities because it has the
potential to address several of the key barriers to service-seeking in these areas. Initially,
integrated practice may be able to help decrease stigma associated with seeking mental health
services (James & O’Donohue, 2009). Specifically, families may experience greater privacy
because they don’t risk the visibility associated with visiting an establishment solely associated
with the provision of mental health services (i.e., community noticing one’s truck parked outside
the mental health center; deGruy, 1997). Second, because of the increased job satisfaction and
reduced stress of healthcare providers practicing in an integrated setting experience, they are
more likely to stay in their jobs (thus increasing accessibility; deGruy, 1997). Finally, because nearly 80% of people visit a primary care practitioner during any given year, the provision of mental health services in this setting greatly increases the likelihood that those in need of treatment will actually contact or access services (Strosahl, 1998). In fact, several studies have found that when referred by a physician to a behavioral health provider integrated into the primary care setting, 81%-90% of patients attended their first appointment (Katon et al., 1995; Valleley et al., 2007;) compared to only 41% of patients referred to outpatient mental health services (Axelrad, Pendley, Miller, & Tynan, 2008).

In addition to helping address traditional mental health concerns, integrated care could also provide a variety of services tailored specifically to the unique “whole health” needs of rural children. More specifically, integration of care could help better address multi-faceted concerns that include medical needs related to health disparities (e.g., obesity, increased risk for smoking) that co-occur with psychosocial concerns (e.g., depression, family discord). Such innovative programming could include vertically integrated models (e.g., collaboration between multiple levels of mental health services; Strosahl, 1998), group visits (Terry, 1997), and/or multi-pronged programs that include prevention and anticipatory guidance (e.g., Sanders, 1999).

Integrated primary care has been shown in multiple studies involving various adult populations to increase followthrough with mental health referrals; provide efficacious treatment and better outcomes; and help patients feel more satisfied with the services that they receive (Blount, 2003). In one study, Katon and colleagues (1995) found that patients presenting with major depression in an integrated primary care environment showed significant improvements in clinical symptoms, showed greater compliance with medication regimens, and followed through with mental health referrals at a higher rate than those referred to a traditional outpatient mental health setting. Similarly, Orden, Hoffman, Haffmans, Spinhoven, and Hoencamp (2009) found
that people attending an integrated primary care clinic spent less time in treatment, scheduled fewer follow-up appointments, and reported similar levels of satisfaction as patients undergoing usual care. The results of these studies suggest that adults are more likely to be willing to follow through with referrals and begin mental health treatment if they are offered integrated primary care services. It may be possible that parents of children and adolescents living in rural areas will also have increased willingness to use mental health treatment provided in an integrated environment, to date none have been done.

**School-Based Mental Health Care**

As stated above, a lack of funding, training, and time often prevents the education system from being able to address problems that do not directly impact academic functioning, thus leaving many children without access to appropriate mental health care in the school setting (Kutash et al., 2006). As a result, the provision of more extensive school-based mental health services is becoming more accepted as an important strategy for addressing the disparity between treatment need and treatment usage among children living in rural areas (Satcher, 2004). This service, which encourages the collaboration of professionals from various systems, could reduce barriers as well as ensure greater continuity of care (Jacob & Coustasse, 2008).

One strategy for offering these services is through a school-based health center. School-based health centers typically employ physicians, nurses, and psychologists who provide primary care and mental health services to students within the school setting. Common services provided include episodic care and well-child checks, preventative services, dental services, chronic condition counseling, and behavioral and mental health assessment and treatment (Wade et al., 2008).

One of the most popular comprehensive models of mental health service provision in schools uses vertically integrated levels of service (Jacob & Coustasse, 2008). At the first level,
services are “universal.” This level entails the use of social and emotional support programs for most, if not all, of the children attending a school. The second level of service involves “targeted” mental health treatment. This level involves the use of an independent mental health specialist working in the school to help students presenting with mild to moderate mental health needs (targeted problems could include depression, anxiety, maladaptive or disruptive behaviors, substance use, or adjustment difficulties). The final level of service provides “intensive.” This level of service involves the coordination of by several professionals and/or agencies (i.e. special education services, individual and family therapy, pharmacotherapy, and community services; The Center for Community Solutions, 2008; Jacob & Coustasse, 2008; Satcher, 2004).

The most compelling reason to offer more comprehensive school-based mental health services in rural areas is that it can help make mental health services more accessible to those who need it (Fox et al., 1995; Hauenstein et al., 2006; Hoagwood & Erwin, 1997). By offering services where students already spends much of their time, these services automatically become easier to access by reducing cost and travel time (Jacob & Coustasse, 2008). Additionally, school-based health centers help students avoid health and mental health related absences, thus further assisting their successes in the classroom (North, 2008). Finally, offering mental health services in tandem with physical health services in the schools encourages collaboration and coordination between educators, physicians, families, and mental health professionals and helps reduce the risk of duplicate treatments (Satcher, 2004; Weist et al., 2001).

Additionally, there is a strong evidence base regarding patient, parent, and teacher satisfaction with the provision and outcome of school-based mental health interventions. For example, one study involving urban children presenting with psychosocial concerns such as anxiety, depression, attention, conduct, and other clinical pathology showed that 95.6% of parents were happy with the school-based mental health services provided, while 95.7% felt that
their child was doing better since starting the program (Hussey, Guo, & Schaegelmilch, 1999). Additionally, 50% of teachers felt that the program helped improve student attendance, 44% felt that student academic performance was enhanced, and 39% identified decreases in disruptive behavior (Hussey et al., 1999). Another study involving urban youth found that 80% of the participants in a school-based mental health program were highly satisfied with the services (Nabors & Prodente, 2002).

**Tele-Behavioral Health**

Tele-behavioral health has been studied for over 40 years as an alternative method of delivering mental health services to people living in rural areas (Brown, 1998; Hilty, Nesbitt, Kuenneth, Cruz, & Hales, 2007; Richardson, Frueh, Grubaugh, Egede, & Elhai, 2009). This service uses telecommunication technology to diagnose, monitor, and treat medical and mental health conditions (Hersh et al., 2006; Hyler & Gangure, 2003). Traditionally, tele-behavioral health involves videoconferencing (Brown, 1998). One videoconferencing unit is located in the rural community (i.e. a school, a physician’s office, or a community clinic), while the other unit is located in the office of a mental health provider (Hilty et al., 2007). Services that may be provided via two-way videoconferencing include assessment (Hilty et al., 2009; O’Reilly et al., 2007), individual and group therapy, and primary care consultation (Hilty et al., 2009).

One particular advantage to telemental health in rural areas is increased areas access to services (Hilty et al., 2004). Additionally, providing telehealth services in rural areas has the possibility of reducing the amount of stigma that is often experienced as a result of accessing mental health services (Richardson et al., 2009). Because mental health services are routinely held in standalone mental health clinics, the anonymity provided by being able to access these services in alternative settings (eg. school, primary care, or community clinic) can provide users
of these services with some assurance that others in the community will not find out about the fact that they are actively seeking mental health services (Kruger & Gray, 2005).

Over a decade of research has resulted in an evolving evidence base for telemental health (Richardson et al., 2009). For example, O’Reilly and colleagues (2007) found in a randomized control trial comparing the outcomes of psychiatric consultations provided via telehealth and face-to-face contact, that clinical outcomes of the two services were equivalent. Other controlled trial studies have shown that CBT can be effectively used over telehealth to treat various common mental health concerns (Bouchard et al., 2004; Frueh et al., 2007) including for children (Nelson, Bernard, & Cain, 2006) and that time-limited therapies such as behavior therapy are particularly well suited for tele-mental health treatment (Richardson et al., 2009).

**Summary**

Researchers have identified some common obstacles to accessing mental health services in rural areas (Hauenstein, 2007), including shortages of qualified mental health professionals (Campbell et al., 2006; Fox et al., 1995; Jameson & Blank, 2007), economic disparities (Fox et al., 1995; Heflinger & Christens, 2006; Roberts et al., 1999), lack of knowledge regarding mental health problems (Heflinger & Christens, 2006; Hill & Fraser, 1995), and increased stigma regarding mental health disorders and treatments in rural communities (Judd et al., 2006; Rost et al., 1993; Rost et al., 2002). Because of these barriers, rural residents are less likely to use mental health services and have an increased likelihood of suffering the negative consequences of inadequate care (Hauenstein et al., 2006).

It may be possible, however, for psychologists to begin to address the barriers that parents living in rural areas face when seeking mental health treatment for their children through the implementation of alternative methods of service delivery such as integrated primary care (James & O’Donohue, 2009), school-based services (Fox et al., 1995; Hauenstein et al., 2006;
Hoagwood & Erwin, 1997; Jacob & Coustasse, 2008), and tele-behavioral health (Brown, 1998; Hilty et al., 2007). All three of these innovative services have an emerging evidence base including high patient satisfaction following treatment (see above review). However, effective services and high satisfaction rates may not be sufficient in extending the “reach” of these services in real world settings. Parents of children living in rural areas must initially be willing to seek treatment from—or try—these innovative methods of service delivery. To date, however, there have been no studies that focus on rural parents’ willingness to use these services; nor have there been studies that have examined parents’ perceived barriers to seeking them..

**Specific Aims**

The present study examined parents’ perceptions of barriers to receiving mental health treatment in the context of their attitudes toward seeking help via four service delivery models: traditional private practice or community services, school-based services, integrated primary care services, and tele-behavioral health services. The specific aims of this project were to determine: 1) rural parents’ overall willingness to seek treatment for their children via four service delivery models; 2) the barriers that parents perceive to seeking treatment in each of the four service delivery models; and 3) the relationship between perceived barriers and parents’ willingness to seek help in the context of each of the four service delivery models. Hypotheses were: 1) parents would express increased willingness to seek treatment in innovative settings (e.g., tele-behavioral health) versus traditional settings (i.e., private practice or community mental health); 2) parents would report fewer barriers to treatment seeking in innovative settings than in traditional settings, and 3) barriers will have a greater impact on parents’ willingness to seek treatment in traditional settings relative to innovative settings.
CHAPTER 2

METHOD

Participants

Parents from public schools in the rural Appalachian Mountains of East Tennessee and Western North Carolina were recruited to participate. The targeted school districts were Mitchell County Public Schools in North Carolina and Carter County Public Schools in Tennessee. Mitchell County Public Schools had a total enrollment of approximately 2,200 students (kindergarten through 12th grade) attending eight different schools (one high school, two middle schools, four elementary schools, and one primary school). All schools in the Mitchell County system pulled from areas that were considered extremely rural by several measures of rurality. On the Rural-Urban Continuum Code (RUCC) scale developed by the United States Department of Agriculture, all Mitchell County schools measured “9” (with 1 being most urban and 10 being the most rural; USDA, 2004). Similarly, on the Rural-Urban Commuting Area (RUCA) scale also developed by the United States Department of Agriculture, all Mitchell county schools measured “10” (with 1 being most urban and 10 being the most rural; USDA, 2005).

Participation for this study was solicited from 1,639 children in first through ninth grades attending all nine Mitchell County Schools.

Carter County Public Schools had a total enrollment of approximately 6,000 students (kindergarten through 12th grade) attending 16 schools (participants were only recruited from the three most rural schools in Carter County—Cloudland High School, Cloudland Elementary School, and Little Milligan Elementary). While Carter County as a whole is not considered rural according to the RUCC scale (it measures “3” on the RUCC scale), the specific schools from which participants were recruited are considered rural according to the more precise RUCA scale.
Participation for this study was solicited from 742 children in first through ninth grades attending the three most rural public schools in Carter County.

The participants were parents of children in kindergarten through ninth grades who responded to a survey that was sent home with their child through the school. For ease of recruitment, all parents (with children in kindergarten through ninth grades) were recruited, but only those with children ages 4-16 were retained in the study (due to norms on study measures).

**Materials**

Measures were: 1) demographic and services questions, and 2) Acceptability and Barriers to Care (adapted from Barriers to Care, Brannan & Heflinger, 2006). The complete set of measures can be found in Appendix A.

**Demographics and Service Use**

This brief measure asked questions regarding the child’s age, child’s sex, school attended, respondent’s relationship to the child, and parents’ highest level of education. Additionally, the measure included questions regarding prior mental health treatment seeking, a question regarding the child’s participation in special education services at school, and a question about the child’s current use of medication for behavioral and emotional difficulties.

**Acceptability and Barriers to Care (A&BC)**

This measure was adapted from “Barriers to Care (Brannan & Heflinger, 2006)” and “Treatment Evaluation Inventory – Short Form (TEI-SF) (Kelley, Heffer, Gresham, & Elliott, 1989).” Initially, the A&BC assesses parents’ willingness to seek mental health treatment in traditional mental health integrated care, school-based mental health, and tele-behavioral health settings. For each service delivery model, parents were provided a single question about which they could respond on a six-point Likert-type scale ranging from ‘Definitely Would Not [be willing seek treatment]’ to ‘Definitely Would [be willing to seek treatment].’ For example, one
of the questions reads: “If you were concerned about your child’s behavior or emotions, would you seek help from a counselor, therapist, or psychologist working in a private practice or community mental health clinic?” These questions were adapted from the TEI-SF (Kelley et al., 1989).

The A&BC also consists of 10 questions regarding whether parents would expect specific barriers to affect their accessing these services. Participants were given directions to place a check mark beside difficulties (barriers) that they might have in seeking help for their child in the specified setting. Examples of items include: 1) The available appointment times would not be convenient in a private practice or community clinic; 2) I would be afraid that my child would be teased by friends if he or she went to see a psychologist private practice or community mental health clinic; and 3) I do not have the money to pay for my child to see a psychologist in a private practice or community mental health clinic. These questions were adapted from Barriers to Care (Brannan & Heflinger, 2006).

This study used four different forms for the A&BC, each focusing on a different proposed mental health service delivery mechanism including: 1) traditional mental health services, 2) primary care-based mental health services, 3) school-based mental health services, 4) integrated school-based psychological services via telehealth. Each form began with a short description of the mental health service delivery mechanism that it measured. Following each description, respondents were directed to answer several questions regarding the acceptability and perceived barriers for that mechanism. Each of the four forms consisted of the same set of questions.
Procedure

School Panel Discussions

Prior to distributing the surveys, study staff organized meetings in both Carter and Mitchell County School districts to solicit feedback from school administrators and teachers regarding the study’s premise and procedures. School staff: 1) offered suggestions regarding questionnaire length, content, reading level, and formatting; 2) provided suggestions and support for survey distribution and collection procedures; and 3) provided ideas for future directions of research.

Data Collection and Consent

The survey was distributed to all of the children kindergarten through ninth grade in Mitchell County Schools and to those students (kindergarten through ninth grade) attending the three most rural schools in Carter County. The schools received packets of surveys divided and labeled for each teacher at the participating schools. Because there are four different survey forms, the teacher packets contained the surveys in rotating order (ie. Form 1, Form 2, Form 3, Form 4, Form 1, Form 2...etc). The surveys were distributed in this way in an attempt to randomize the distribution process and ensure that each form was distributed equally. The packets of surveys were placed in each teacher’s mailbox by study staff with instructions to distribute the surveys during the homeroom class period. The teachers distributed the surveys to the children and adolescents prior to dismissal. The students were instructed to place the surveys in their backpacks and were encouraged to give them to their parents when they arrived at home.

Parents and guardians gave implied consent to participate in the study by reading a cover letter attached to the survey packet (see Appendix B) and subsequently filling out and submitting the packet. Parents participating in the study placed the completed packet in a self-addressed and
stamped envelope (included in the initial survey packet) and mailed it directly to the ETSU Psychology Department. This method was chosen to ensure confidentiality and anonymity.

**Power Analysis**

G*Power 3 power analysis software was used to conduct an a priori power analysis calculation based on alpha value of 0.05, a beta value of 0.05, and a medium effect size of 0.15. The calculation yielded a recommended sample size of 168. The sample collected in this study exceeded this minimum value.
CHAPTER 3

RESULTS

Of the 2,371 survey packets distributed across Mitchell and Carter counties, 239 surveys were returned completed (i.e., 10.1% return rate). The return rates for individual schools varied from 12.8% at Greenlee Primary to 4.5% at Tipton Hill Elementary (see Table 1 for all return rates). Of the surveys returned, 55% (N = 132) were completed about a male student and 45% (N = 107) were completed about a female student. The students had a mean age of 9.86 years (SD = 2.81) with a range from 5 years to 15 years. Of the surveys that were returned, 82% (N = 193) were completed by the child’s mother, 8% (N = 19) were completed by the child’s father, 6% (N = 14) were completed by someone other than the child’s parents, and 4% (N = 10) failed to report this information. The largest majority of mothers in the sample had completed at least 2 years of college education (N = 81; 31%) while the largest majority of fathers had only completed high school (N = 88, 37%).

Descriptive statistics were conducted on the demographic information collected from all respondents. Of the parents responding, 38% reported having talked with a family member about their child’s behavior or emotions, 35% reported having talked to their child’s teacher, 23% reported having talked with their doctor, 15% reported having talked with a counselor, therapist or psychologist, 5.5% reported having talked with their pastor, and 5% reported having talked with someone else. Additionally, 28% of the children had a family member who had received help from a psychologist or counselor for a behavioral or emotional concern, 26% of the children had a family member who had previously received behavioral or emotional help from a physician, 8.5% had a family member who had received help from a pastor or minister, and 1% had a family member who had received help from some other source. Fifty-three percent of the
Table 1

*Number of Surveys Distributed and Returned By School*

<table>
<thead>
<tr>
<th>School</th>
<th>County</th>
<th>Surveys Distributed</th>
<th>Surveys Returned</th>
<th>Return Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenlee Primary (K-2)</td>
<td>Mitchell</td>
<td>320</td>
<td>42</td>
<td>13.1%</td>
</tr>
<tr>
<td>Buladean Elementary (K-8)</td>
<td>Mitchell</td>
<td>69</td>
<td>8</td>
<td>11.6%</td>
</tr>
<tr>
<td>Gouge Elementary School (K-5)</td>
<td>Mitchell</td>
<td>264</td>
<td>33</td>
<td>12.5%</td>
</tr>
<tr>
<td>Deyton Elementary (3-5)</td>
<td>Mitchell</td>
<td>299</td>
<td>26</td>
<td>8.7%</td>
</tr>
<tr>
<td>Tipton Hill Elementary (K-8)</td>
<td>Mitchell</td>
<td>88</td>
<td>4</td>
<td>4.5%</td>
</tr>
<tr>
<td>Harris Middle School (6-8)</td>
<td>Mitchell</td>
<td>279</td>
<td>23</td>
<td>8.2%</td>
</tr>
<tr>
<td>Bowman Middle School (6-8)</td>
<td>Mitchell</td>
<td>200</td>
<td>15</td>
<td>7.5%</td>
</tr>
<tr>
<td>Mitchell High School (9-12)</td>
<td>Mitchell</td>
<td>160</td>
<td>7</td>
<td>4.4%</td>
</tr>
<tr>
<td>Cloudland Elementary (K-6)</td>
<td>Carter</td>
<td>395</td>
<td>45</td>
<td>11.4%</td>
</tr>
<tr>
<td>Cloudland High School (7-12)</td>
<td>Carter</td>
<td>165</td>
<td>21</td>
<td>13.1%</td>
</tr>
<tr>
<td>Little Milligan Elementary (K-8)</td>
<td>Carter</td>
<td>132</td>
<td>11</td>
<td>8.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>2,371</strong></td>
<td><strong>239</strong></td>
<td><strong>10.1%</strong></td>
</tr>
</tbody>
</table>
children’s families had not received any help at all. Finally, 13.2% of children were “currently enrolled in the special education program at [their] school” and 7.3% were “currently [taking] medications to help with behavioral and emotional difficulties.”

Of the four survey forms, 57 were returned regarding seeking treatment in a private practice or community mental health center, 50 regarding a primary care clinic, 57 regarding school-based services, and 63 regarding telehealth (see Table 2). Only one significant difference was found between the four groups in regards to the above noted demographic information. Significant variation was found between groups regarding parents having spoken to a family member about their child’s behavior or emotions (F (3, 235) =3.370, p=.019). Specifically, a greater proportion of parents completing the survey regarding telehealth services identified that they had spoken to a family member (53%) than parents completing the survey regarding school-based services (28%).

Prior to hypotheses testing, descriptive statistics were conducted on the main study variables. Parents’ willingness to seek services in each of these settings is depicted in Table 2. Across forms, parents generally reported they are willing to seek help from a counselor, therapist, or psychologist if the need were to arise (M=4.81, SD=1.56, N=227; willingness was measured on a scale from 1 to 6 with 1 being ‘definitely not willing’ and 6 being ‘definitely willing’). Descriptive statistics indicated that the parents who were asked about getting services from private practice or community mental health centers expressed the most willingness (M=5.21, SD=1.15, N=57), followed by those asked about videoconferencing (M= 5.05, SD=1.34, N=63). Parents asked about getting help in a school setting expressed willingness to do so, but their ratings were the lowest of the four groups (M= 4.19, SD= 1.89, N= 57).
Table 2

*Willingness to Seek Help From a Counselor, Therapist, or Psychologist by Service Delivery Model*

<table>
<thead>
<tr>
<th>Service Delivery Model</th>
<th>Willingness to Seek Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Private Practice or Community Mental Health</td>
<td>5.21</td>
</tr>
<tr>
<td>Integrated Primary Care</td>
<td>4.74</td>
</tr>
<tr>
<td>School-based Mental Health Services</td>
<td>4.19</td>
</tr>
<tr>
<td>Tele-Behavioral Health</td>
<td>5.05</td>
</tr>
</tbody>
</table>

Overall                                                                 | 4.81 | 1.56| 1-6   | 227 |

*Note.* Parents’ willingness to seek help from a counselor, therapist, or psychologist was determined on the Acceptability and Barriers to Care (A&BC) measure. Parents rated their willingness on a scale of 1 to 6 with 1 being “definitely would not [be willing]” and 6 being “definitely would [be willing].”
The barriers to seeking treatment that parents endorsed the most were: “I do not have the money to pay for a counselor, therapist, or psychologist” (36%, N=82); “I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist” (31%, N=71); and “I would be afraid my child might be labeled as a problem child by the system (people like a teacher, doctor, or juvenile court) if s/he went to a counselor, therapist, or psychologist” (30%, N=69). Parents’ least endorsed barriers to treatment seeking were: “I don’t have a way to get to a counselor, therapist, or psychologist” (8%, N=18); and “I would be afraid of what my family or friends would think if I sought help for my child from a counselor, therapist, or psychologist” (7%, N=15; see Table 3 for endorsement rates for all barriers).

Table 3

*Parents’ Overall Endorsement of Barriers to Mental Health Treatment Seeking*

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Percentage</th>
<th>Number of Endorsements</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>There would not be space available for my child or there would be long waiting lists to get help from a counselor, therapist, or psychologist.</td>
<td>21%</td>
<td>49</td>
<td>231</td>
</tr>
<tr>
<td>I would be afraid of what my family or friends would think if I sought help for my child from a counselor, therapist, or psychologist.</td>
<td>6%</td>
<td>15</td>
<td>231</td>
</tr>
<tr>
<td>I do not have the money to pay for a counselor, therapist, or psychologist.</td>
<td>35%</td>
<td>82</td>
<td>231</td>
</tr>
<tr>
<td>I would think my child’s problems are not so serious or I could handle them on my own.</td>
<td>17%</td>
<td>40</td>
<td>231</td>
</tr>
<tr>
<td>Barrier</td>
<td>Percentage Endorsing Barrier</td>
<td>Number of Endorsements</td>
<td>Total N</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>I would be afraid my child might be labeled as a problem child by the system (people like a teacher, doctor, or juvenile court) if s/he went to a counselor, therapist, or psychologist.</td>
<td>30%</td>
<td>69</td>
<td>231</td>
</tr>
<tr>
<td>I don’t have a way to get to a counselor, therapist, or psychologist.</td>
<td>8%</td>
<td>18</td>
<td>231</td>
</tr>
<tr>
<td>I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist.</td>
<td>31%</td>
<td>71</td>
<td>231</td>
</tr>
<tr>
<td>I would be afraid that my child would be teased by friends if he or she went to see a counselor, therapist, or psychologist.</td>
<td>25%</td>
<td>57</td>
<td>231</td>
</tr>
<tr>
<td>The available appointment times would not be convenient.</td>
<td>12%</td>
<td>28</td>
<td>231</td>
</tr>
<tr>
<td>I would not think that treatment with a counselor, therapist, or psychologist would help.</td>
<td>12%</td>
<td>28</td>
<td>231</td>
</tr>
</tbody>
</table>
Aim 1: To Determine Rural Parents’ Overall Willingness to Seek Treatment for Their Children Via Four Service Delivery Models

In order to test parents’ overall willingness to seek treatment for their children via the four service delivery models, a one-way analysis of variance (ANOVA) was used. The one-way ANOVA was conducted in order to determine the relationship between mental health service delivery location (e.g. private practice) and parents’ willingness to seek treatment for their child (as reported on question 1 of the Acceptability and Barriers to Care measure). Levene’s test for equal variance among residuals was performed in order to check the validity of the equal variance assumption. Levene’s test revealed a p-value that was highly significant (Levene = 9.235, p < .001), thus, there is ample evidence to suggest that this assumption may be violated. To correct for this, the Brown-Forsythe test (a robust test of equality of means that does not assume equal variances) was used to calculate an alternative F statistic. The results of the Brown-Forsythe showed that parents’ overall willingness to seek mental health treatment for their children significantly varies by service location [F(3, 190) = 4.929, p = .003].

The Games-Howell post hoc test was chosen to perform multiple comparisons of means to determine where the significant differences lie. This test was chosen because equality of variances is not assumed in its calculation. The results show that parents asked about a private practice/community mental health center were significantly more willing to seek help for their child from a psychologist working in that setting (M = 5.21, SD = 1.15) than parents asked about seeking help in a school setting (M = 4.19, SD = 1.89, p = .004). Additionally, parents who were asked about tele-mental health were significantly more willing to seek help (M = 5.05, SD = 1.34) than parents asked about seeking help in a school setting (M = 4.19, SD = 1.89, p = .028). No other groups significantly differed by willingness to seek treatment (see Table 2 and Table 4).
Table 4

*Parents’ Willingness to Seek Treatment Based on Type of Service Delivery: Games – Howell*

*Post Hoc Comparisons Table*

<table>
<thead>
<tr>
<th></th>
<th>Primary Care</th>
<th>School-based</th>
<th>Telehealth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Diff.</td>
<td>St. Error</td>
<td>Sig.</td>
</tr>
<tr>
<td>Private Practice/</td>
<td>.471</td>
<td>.277</td>
<td>.331</td>
</tr>
<tr>
<td>Community Clinic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School-based</td>
<td>-.855*</td>
<td>.301</td>
<td>.028</td>
</tr>
<tr>
<td>Telehealth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Levene = 9.235, p < .001

F(3, 190) = 4.929, p = .003

* p < .05        ** p < .01
Aim 2: To Determine The Barriers That Parents Perceive to Seeking Treatment in Each of the Four Service Delivery Models

In order to determine the barriers that parents perceive to seeking treatment in each of the four service delivery models, 10 Pearson’s $\chi^2$ tests for independence were performed. Specifically, these tests were performed to determine if parental endorsement of the 10 barriers differed from what would be expected in each of the four service delivery settings. These tests revealed that parental endorsement of 3 of the 10 barriers differed depending on the service delivery model being asked about (See Table 5 for $\chi^2$ values). These barriers were: “I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist” [$\chi^2(3, N = 230) = 22.46, p < .001$], “I would be afraid that my child would be teased by friends if he or she went to see a counselor, therapist, or psychologist” [$\chi^2(3, N = 231) = 15.94, p = .001$], and “I would not think that treatment with a counselor, therapist, or psychologist...would help” [$\chi^2(3, N = 231) = 18.56, p < .001$].

By analyzing cross-tabulation results it was possible to examine more specifically how parent-reported barriers differed across service delivery models. These data are depicted in Table 6. The barrier—“I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist”—was identified as a barrier by parents rating the school setting at a much higher rate than would be expected based on overall endorsement rates for this barrier [actual= 29 (46%), expected= 17.6 (31%), N=57]. The barrier—“I would be afraid that my child would be teased by friends if he or she went to see a counselor, therapist, or psychologist”—was identified as a barrier by parents rating the school setting at a much higher rate than would be expected based on overall endorsement rates for this barrier [actual= 25 (45%), expected= 14.1 (25%), N=58]. Finally, the barrier—“I would not think that treatment with a counselor, therapist, or psychologist...would help”—was identified as a barrier by parents
rating the school setting at a much higher rate than would be expected based on overall endorsement rates for this barrier [actual= 15 (28%), expected= 6.9 (12%), N=58].

Table 5

\( \chi^2 \) Values Describing the Relationships Between Service Location and Perceived Barriers to Service Delivery

<table>
<thead>
<tr>
<th>Barrier</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>There would be no space available or long waiting lists</td>
<td>1.96</td>
<td>3</td>
<td>.58</td>
</tr>
<tr>
<td>Would be afraid of what family and friends would think</td>
<td>5.35</td>
<td>3</td>
<td>.15</td>
</tr>
<tr>
<td>Would have no money to pay</td>
<td>4.44</td>
<td>3</td>
<td>.22</td>
</tr>
<tr>
<td>Would think child’s problems were not so serious</td>
<td>1.32</td>
<td>3</td>
<td>.73</td>
</tr>
<tr>
<td>Would think child would be labeled a “problem child”</td>
<td>7.53</td>
<td>3</td>
<td>.057</td>
</tr>
<tr>
<td>Would have no way to get to psychologist</td>
<td>2.56</td>
<td>3</td>
<td>.46</td>
</tr>
<tr>
<td>Would not think treatment would be confidential</td>
<td>22.46**</td>
<td>3</td>
<td>.001**</td>
</tr>
<tr>
<td>Would be afraid child would be teased by friends</td>
<td>15.94**</td>
<td>3</td>
<td>.001**</td>
</tr>
<tr>
<td>Would think appointment times would not be convenient</td>
<td>3.08</td>
<td>3</td>
<td>.38</td>
</tr>
<tr>
<td>Would think that treatment would not help</td>
<td>18.56**</td>
<td>3</td>
<td>.001**</td>
</tr>
</tbody>
</table>

** p < .001
Table 6

Cross-tabulation Results Describing the Significant Relationships between Service Location and Perceived Barriers to Service Delivery

<table>
<thead>
<tr>
<th>Barrier: I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist working in a:</th>
<th>No (N)</th>
<th>Yes (N)</th>
<th>Total (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Practice or Community Clinic-actual</td>
<td>43 (95%)</td>
<td>13 (5%)</td>
<td>56</td>
</tr>
<tr>
<td>-expected</td>
<td>38.7 (69%)</td>
<td>17.3 (31%)</td>
<td></td>
</tr>
<tr>
<td>Primary Care</td>
<td>32 (98%)</td>
<td>20 (2%)</td>
<td>52</td>
</tr>
<tr>
<td>-expected</td>
<td>35.9 (69%)</td>
<td>16.1 (31%)</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>28 (54%)</td>
<td>29 (46%)</td>
<td>57</td>
</tr>
<tr>
<td>-expected</td>
<td>39.4 (69%)</td>
<td>17.6 (31%)</td>
<td></td>
</tr>
<tr>
<td>Telehealth</td>
<td>56 (86%)</td>
<td>9 (14%)</td>
<td>65</td>
</tr>
<tr>
<td>-expected</td>
<td>44.9 (69%)</td>
<td>20.1 (31%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>159 (69%)</td>
<td>71 (31%)</td>
<td>230</td>
</tr>
</tbody>
</table>

Barrier: I would be afraid that my child would be teased by friends if he or she went to see a counselor, therapist, or psychologist working in a:

<table>
<thead>
<tr>
<th>Private Practice or Community Clinic-actual</th>
<th>No (N)</th>
<th>Yes (N)</th>
<th>Total (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-expected</td>
<td>47 (82%)</td>
<td>10 (18%)</td>
<td>57</td>
</tr>
<tr>
<td>Primary Care</td>
<td>40 (77%)</td>
<td>12 (23%)</td>
<td>52</td>
</tr>
<tr>
<td>-expected</td>
<td>39.2 (75%)</td>
<td>12.8 (25%)</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>32 (55%)</td>
<td>25 (45%)</td>
<td>58</td>
</tr>
<tr>
<td>-expected</td>
<td>42.9 (75%)</td>
<td>14.1 (25%)</td>
<td></td>
</tr>
<tr>
<td>Telehealth</td>
<td>55 (85%)</td>
<td>10 (15%)</td>
<td>65</td>
</tr>
<tr>
<td>-expected</td>
<td>49 (75%)</td>
<td>16 (25%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>174 (75%)</td>
<td>57 (25%)</td>
<td>231</td>
</tr>
</tbody>
</table>
Table 6 (Continued)

*Cross-tabulation Results Describing the Significant Relationships between Service Location and Perceived Barriers to Service Delivery*

<table>
<thead>
<tr>
<th>Barrier: I would not think that treatment with a counselor, therapist, or psychologist would help in a:</th>
<th>No (N)</th>
<th>Yes (N)</th>
<th>Total (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Practice or Community Clinic</td>
<td>54 (95%)</td>
<td>3 (5%)</td>
<td>57</td>
</tr>
<tr>
<td>-expected</td>
<td>50.1 (88%)</td>
<td>6.9 (12%)</td>
<td></td>
</tr>
<tr>
<td>Primary Care</td>
<td>51 (98%)</td>
<td>1 (2%)</td>
<td>52</td>
</tr>
<tr>
<td>-expected</td>
<td>45.7 (88%)</td>
<td>6.3 (12%)</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>42 (72%)</td>
<td>15 (28%)</td>
<td>58</td>
</tr>
<tr>
<td>-expected</td>
<td>50.1 (88%)</td>
<td>6.9 (12%)</td>
<td></td>
</tr>
<tr>
<td>Telehealth</td>
<td>56 (86%)</td>
<td>9 (14%)</td>
<td>65</td>
</tr>
<tr>
<td>-expected</td>
<td>57.1 (88%)</td>
<td>7.9 (12%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>203 (88%)</td>
<td>28 (12%)</td>
<td>231</td>
</tr>
</tbody>
</table>
Aim 3: To Determine the Relationship Between Parents’ Perceived Barriers and Their Willingness to Seek Help in the Context of Each of the Four Service Delivery Models

The effect of specific barriers on parents’ willingness to seek treatment for their children was measured by using hierarchical multiple regression. Specifically, ‘willingness to seek treatment’ was regressed on ‘treatment seeking barriers’ and ‘venue of service delivery.’ A cross-product term was added to the model to test for a possible interaction between the proposed barriers and the four service delivery venues; and to further determine the possible interaction’s independent effect on parents’ willingness to seek treatment for their children. Ten possible barriers to treatment seeking were tested in this study, thus, in order to examine the independent and interaction effects of these barriers on parental willingness to seek treatment it was necessary to run 10 separate sets of regression analyses. A preliminary regression analysis was performed to determine if there were relationships between other collected variables (e.g., parents’ highest education level, prior familial contact with mental health services, talk about problems with child’s behavior or emotions, county of residence, enrollment in special education services, child’s sex, child’s school, child’s age, etc.) and parental willingness to seek help for their child.

The analysis revealed that child’s age was the only tested variable that had a significant effect on parental willingness to seek treatment (B = -0.094, se = 0.037, p = .01). That is, the older a child was, the less willing that the child’s parents were to seek mental health treatment. In order to control for this effect in the current analyses, “child’s age” was added in the initial step on the regression analyses. In the second step of the regressions, the barriers and the location of services were entered to identify the main effects of the analysis. Because there were four distinct service locations measured in this study, it was necessary to dummy code the service location variable, thus creating four separate dichotomous variables. In order to test the main
effect and interaction relationships between all four of the location dummy variables it was necessary to run three separate regression analyses for each of the 10 barriers examined. In the third step of the regression analyses, cross-product terms were entered to measure the interaction between perceived barrier and service location.

Barrier 1—“There would not be space available for my child or there would be long waiting lists to get help from a counselor, therapist, or psychologist.”

- Main Effects: After controlling for age ($R^2 \Delta = .029, p = .01$), barrier 1 and service location together accounted for 7.9% ($R^2 \Delta = .079$) of the variance in parental willingness to seek treatment for their child ($p = .001$). Specifically, increased endorsement of barrier 1 was associated with increased willingness to seek treatment ($\beta = .129, p = .046$).

- Interaction: Nonsignificant

Barrier 2—“I would be afraid of what my family or friends would think if I sought help for my child from a counselor, therapist, or psychologist.”

- Main Effects: After controlling for age ($R^2 \Delta = .029, p = .01$), barrier 2 and service location together accounted for 10.2% ($R^2 \Delta = .102$) of the variance in parental willingness to seek treatment for their child ($p < .001$). Specifically, increased endorsement of barrier 2 was associated with decreased willingness to seek treatment ($\beta = -.203, p = .002$).

- Interaction: Nonsignificant

Barrier 3—“I do not have the money to pay for a counselor, therapist, or psychologist.”

- Main Effects: After controlling for age ($R^2 \Delta = .029, p = .01$), barrier 3 and service location together accounted for 6.2% ($R^2 \Delta = .02$) of the variance in parental willingness
to seek treatment for their child (p = .004). However, increased endorsement of barrier 3 was not associated with significant changes in willingness to seek treatment (β = .056, p = .387).

- Interaction: Nonsignificant

Barrier 4—“I would think my child’s problems were not so serious, or I could handle them on my own.”

- Main Effects: After controlling for age (R² Δ = .029, p = .01), barrier 4 and service location together accounted for 9.8% (R² Δ = 0.098) of the variance in parental willingness to seek treatment for their child (p < .001). Specifically, increased endorsement of barrier 4 was associated with decreased willingness to seek treatment (β = -.189, p = .003).

- Interaction: Nonsignificant

Barrier 5—“I would be afraid my child might be labeled as a problem child by the system (people like a teacher, doctor, or juvenile court) if s/he went to a counselor, therapist, or psychologist.”

- Main Effects: After controlling for age (R² Δ = .029, p = .01), barrier 5 and service location together accounted for 8.1% (R² Δ = .081) of the variance in parental willingness to seek treatment for their child (p = .001). Specifically, increased endorsement of barrier 5 was associated with decreased willingness to seek treatment (β = -.139, p = .034).

- Interaction: Nonsignificant

Barrier 6—“I don’t have a way to get to a counselor, therapist, or a psychologist.”

- Main Effects: After controlling for age (R² Δ = .029, p = .01), barrier 6 and service location together accounted for 6.3% (R² Δ = .063) of the variance in parental willingness
to seek treatment for their child \( (p = .005) \). However, increased endorsement of barrier 3 was not associated with significant changes in willingness to seek treatment \( (\beta = -.016, p = .801) \).

- Interaction: Nonsignificant

Barrier 7—“I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist.”

- Main Effects: After controlling for age \( (R^2 \Delta = .030, p = .01) \), barrier 7 and service location together accounted for 16.0\% \( (R^2 \Delta = .16) \) of the variance in parental willingness to seek treatment for their child \( (p < .001) \). Specifically, increased endorsement of barrier 7 was associated with decreased willingness to seek treatment \( (\beta = -.334, p < .001) \).

- Interaction: The change in variance following the addition of the interaction terms for barrier 7 and service location to the regression was significant \( (R^2 \Delta = .032, p = .032) \). In order to more clearly see the nature of the relationship between the interaction of barrier 7 and service location, and parental willingness to seek treatment it was necessary to decompose the interaction. This was done by regressing parental willingness on barrier 7 (while controlling for the effect of age) in four different analyses — one for each service location. The results suggest that barrier 7 accounts for 19.2\% \( (R^2 \Delta = .192, p = .001) \) of the variance in parental willingness to seek treatment for their child in a school setting \( (\beta = -.466, p = .001) \), 16.8\% \( (R^2 \Delta = .168, p = .003) \) of the variance in parental willingness to seek treatment for their child in a primary care clinic \( (\beta = -.411, p = .003) \), 10.0\% \( (R^2 \Delta = .100, p = .011) \) of the variance in parental willingness to seek treatment for their child in over telehealth \( (\beta = -.319, p = .011) \), and 0\% \( (R^2 \Delta = 0.0, p = n. s.) \) of the variance in parental willingness to seek treatment for their child in a private practice or community clinic \( (\beta = -.003, p = n. s.) \).
Barrier 8—“I would be afraid that my child would be tease by friends if he or she went to see a counselor, therapist, or psychologist.”

- Main Effects: After controlling for age ($R^2 \Delta = .029, p = .01$), barrier 8 and service location together accounted for 7.0% ($R^2 \Delta = .070$) of the variance in parental willingness to seek treatment for their child ($p = .003$). However, increased endorsement of barrier 8 was not associated with significant changes in willingness to seek treatment ($\beta = -.089, p = .183$).

- Interaction: Nonsignificant

Barrier 9—“The available appointment times would not be convenient.”

- Main Effects: After controlling for age ($R^2 \Delta = .029, p = .01$), barrier 9 and service location together accounted for 8.5% ($R^2 \Delta = 0.085$) of the variance in parental willingness to seek treatment for their child ($p < .001$). Specifically, increased endorsement of barrier 7 was associated with decreased willingness to seek treatment ($\beta = -.152, p = .020$).

- Interaction: Nonsignificant

Barrier 10—“I would not think that treatment with a counselor, therapist, or psychologist would help.”

- Main Effects: After controlling for age ($R^2 \Delta = .030, p = .01$), barrier 10 and service location together accounted for 16.8% ($R^2 \Delta = 0.168$) of the variance in parental willingness to seek treatment for their child ($p < .001$). Specifically, increased endorsement of barrier 7 was associated with decreased willingness to seek treatment ($\beta = -.340, p < .001$).
- Interaction: The change in variance following the addition of the interaction terms for barrier 10 and service location to the regression was significant ($R^2 \Delta = .037$, $p = .016$).

In order to more clearly see the nature of the relationship between the interaction of barrier 10 and service location, and parental willingness to seek treatment it was necessary to decompose the interaction. This was done by regressing parental willingness on barrier 10 (while controlling for the effect of age) in four different analyses – one for each service location. The results suggested that barrier 10 accounts for 35.9% ($R^2 \Delta = 0.359$, $p = .001$) of the variance in parental willingness to seek treatment for their child in a school setting ($\beta = -.602$, $p < .001$), 3.6% ($R^2 \Delta = 0.036$, $p = \text{n. s.}$) of the variance in parental willingness to seek treatment for their child in over telehealth ($\beta = -.189$, $p = \text{n. s.}$), 1.8% ($R^2 \Delta = 0.018$, $p = \text{n. s.}$) of the variance in parental willingness to seek treatment for their child in a private practice or community clinic ($\beta = -.137$, $p = \text{n. s.}$) and 0% ($R^2 \Delta = 0$, $p = \text{n. s.}$) of the variance in parental willingness to seek treatment for their child in a primary care clinic ($\beta = .005$, $p = \text{n. s.}$).
CHAPTER 4
DISCUSSION

The first aim of the present study was to determine rural parents’ overall willingness to seek mental health treatment for their children via four service delivery models including traditional (i.e., private practice or community mental health settings) and innovative settings (i.e., telehealth, integrated primary care, school). The results showed that across all four service delivery models rural parents reported high willingness to seek treatment. More specifically, parents who completed surveys regarding private practice or community mental health and telehealth settings expressed the most willingness to seek treatment, while parents who completed surveys regarding school based mental health expressed significantly lower willingness. These data could be interpreted that parents of children living in rural Appalachia are most willing to seek services in traditional and telehealth formats and least willing (although still willing) to seek services in the school.

One potential explanation for this difference emerges in examining the results of analyses for the second and third aims of the study. The second aim was to determine the barriers that parents perceive to seeking treatment in each of the four service delivery models. Overall, parents endorsed not having the money to pay, not thinking it would be confidential (private), and being afraid their child might be labeled as a problem child by the system (people like a teacher, doctor, or juvenile court) as being the greatest barriers to mental health treatment seeking. However, analysis results showed that parents’ perceptions of barriers significantly differed across service delivery models for 3 of the 10 barriers proposed. These barriers included, not thinking it would be confidential (private); being afraid that the child would be teased by friends; and, thinking that treatment with a counselor, therapist, or psychologist would not help. These three barriers were endorsed at high rates by parents considering school-based mental
health services and at low rates for those considering services in traditional settings (private practice or community mental health) or telehealth.

The third aim of this study was to determine the relationship between parents’ perceived barriers to mental health treatment and parents’ willingness to seek help in the context of the four service delivery models. The study showed that in 2 of the 10 barriers studied, the strength of the relationship between parents’ endorsement of the barrier and parents’ willingness to seek treatment differed by service delivery model. The two barriers for which parental willingness differed across models were: “I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist” and “I would not think that treatment with a counselor, therapist, or psychologist would help.” These findings showed that increased endorsement of these two barriers was associated with decreased willingness to seek treatment by parents who responded about the school setting than those who responded about other settings.

Taken together, these findings show that, contrary to the hypotheses, parents who responded about traditional services (i.e., private practice or community mental health services) were just as or more willing to seek treatment than parents who responded about innovative services (i.e., telehealth, integrated primary care, and school based services). While it is possible that this unexpected finding was influenced by the study’s low response rate (causing a biased or unrepresentative sample), it may also be evidence that parents living in rural Appalachia are generally comfortable seeking mental health treatment for their children in traditional settings (e.g., private practice or community mental health). However, as suggested in previous research, provider shortages (Jameson & Blank, 2007) and lacking specialized mental health providers may impede rural parents’ ability to access these traditional services (Campbell et al., 2006; Simmons et al., 2007). The present study supports these findings in that many parents
responding about traditional treatment settings endorsed accessibility concerns as barriers to their treatment seeking (i.e., 23% endorsed thinking that there would not be space available; 14% endorsed thinking appointment times would not be convenient; and 5% endorsed not being able to get to an appointment). As such, regardless of the increased willingness to seek help that parents report feeling towards traditional services, to increase access it may still be beneficial to consider offering services via innovative settings.

Previous research has suggested that one way to help mental health treatment in rural areas become more accessible and convenient is to offer comprehensive school-based services (Fox et al., 1995; Hauenstein et al., 2006; Hoagwood & Erwin, 1997). The present findings, however, show no significant differences in endorsement rates for accessibility concerns between parents asked about school based mental health and traditional mental health settings. In other words, parents asked about school based mental health also reported thinking that they would experience accessibility difficulties in that setting. One possible reason for this discrepancy between the previous research and parent report (in the current study) is that, in the current study, only a small portion of respondents (15%) reported having spoken with a counselor, therapist, or psychologist about their child in the past. As such, parents responding about seeking help in traditional settings likely have not had contact with the few services that are available in these counties (both Carter and Mitchell counties have existing, but limited, traditional community mental health services) and thus do not have an accurate frame regarding their accessibility. Further, parents responding about school based services may have been reflecting on prior difficulties they had in scheduling and meeting with school staff and administration. Therefore, parents living in Carter and Mitchell counties may perceive that traditional mental health services are more accessible than they actually are as well as perceive school based services as less accessible.
Parents asked about school-based services were significantly less willing to seek treatment than parents asked about services in traditional settings were. Further, parental endorsement of 2 of the 10 barriers (i.e., thinking services would not be confidential and thinking services would not help) resulted in significantly greater reductions in willingness to seek treatment than in any other setting. These findings may suggest that rural Appalachian parents: 1) may or may not perceive school based mental health services as being more accessible than traditional services; 2) are not as willing to seek mental health treatment in the school setting as they would in traditional settings; and 3) express a greater reduction in willingness to seek treatment in the school setting (over other settings) when endorsing certain barriers (i.e., those involving confidentiality and helpfulness).

These findings could have significant implications for the translation and implementation of school-based mental health services in rural areas (especially in rural Appalachia). Specifically, without augmentation of the school-based mental health model and efforts to reduce perceived barriers regarding seeking services in the school, parents may be less apt to seek help for their children in that setting. One possible way to improve willingness and reduce barriers to treatment seeking in schools may be to provide parents with more detailed information about who would be providing the services in that setting. Parents may have had prior experiences with guidance counselors, special education programs, or traditional school psychologists (who often primarily conduct testing) and interpreted the description of school-based services on the surveys as referring to these services. These professionals typically do not provide extensive behavioral health or psychological services. For example, in one county surveyed in this study, a single school psychologist provided services for all 2,200 students attending public school in that county, thus leaving him little time to intervene with individual behavioral or psychological interventions.
Concerns (barriers) that parents raised that were specific to seeking help in the school involved confidentiality concerns, being afraid that the child would be labeled by the school, being afraid that the child would be teased by friends, and concerns that treatment would not work. Confidentiality and labeling concerns may be addressed through parent education regarding the fact that counselors, therapists, and psychologists in school-based practice work and keep records independently from other school services and programs. Further, concerns that treatment would not work may be addressed through parent education regarding the competence based licensure process that all mental health professionals must navigate.

One further innovation that may serve to reduce barriers and increase willingness to seek treatment in the school setting is to combine the use of service delivery models. For example, the school could offer behavioral health services as an adjunct to school-based primary care services over a tele-mental health network. In the present study, parents reported high levels of willingness to seek treatment for their children through tele-mental health and integrated primary care services and only moderate willingness to seek help in their child’s school. Tele-mental health emerged as the innovative service for which parents perceived the least barriers to access. Additionally, parents perceived few barriers to integrated primary care services.

Though untested in this study, it is possible that the use of tele-mental health services in tandem with school-based services could both reduce the impact of perceived barriers on parents’ willingness to seek treatment in the school and increase the availability of mental health services to rural children and adolescents. Specifically, parents’ reduced concerns about confidentiality, labeling, and teasing over tele-mental health may serve to offset the impact of similar concerns reported in relation to school-based services on willingness to seek treatment. Similarly, parents increased perceptions of helpfulness of treatment (see barrier 10) in an integrated primary care setting may serve to offset the impact of parents’ reduced perceptions of
helpfulness in the school setting. Currently, programs incorporating tele-mental health and tele-psychiatric services into rural school systems have been piloted in Kentucky (Miller et al., 2003) and Kansas (Burke, Bynum, Hall-Barrow, Ott, & Albright, 2008). However, at this time the impact of barriers on parents’ willingness to seek treatment has not been measured. Additionally, a demonstration project incorporating both primary care services and tele-mental health into the school setting is currently being piloted in Mitchell and Yancey counties in the mountains of North Carolina. Again, however, parents’ willingness to use this combination of services has not been measured.

**Limitations and Future Directions**

While the results of this study provide insight into the interplay between parental willingness to seek mental health treatment for a child, proposed treatment location, and barriers to treatment seeking, certain design weaknesses limit interpretation. Initially, the current study used a between-subjects design. Four different groups of parents were asked to respond regarding one service delivery method each. In order to compare parents’ willingness and perceived barriers to seeking treatment across modes of service delivery, it was necessary to compare responses produced by respondents from different groups. This design was chosen because a survey containing all four measures was determined by a panel of school administrators to be too lengthy for parents to complete and return at high rates. A within-subjects design, however, would have meant that every participant completed every measure provided. The use of such a design would have eliminated random between-group variance and would have allowed for more specific conclusions to be drawn from the analyses. Future research in this area should employ within-subjects designs in order to enable the use of more powerful statistical methods and allow for more decisive interpretation of results.
Another problem limiting the interpretation of these results is that in the analysis of the third aim similar variables were used in a large number of regression analyses. Such repetition of variables and tests increases the likelihood of committing a type 1 error (receiving a false positive result). One way, however, to correct for this increased likelihood of error is to decrease the threshold for significance. After employing a reduced alpha level (0.01), all but one beta value remained significant. Future research in this area, however, should employ a standardized alpha correction procedure (e.g. Bonferroni correction) in order to allay the chances of error.

An additional problem that could limit the interpretation of this study is its response rate of 10.1%. Current research suggests a broad range of response rates for mailed surveys, ranging from 8.7% to 90% with an average rate of 26% (Larson & Poist, 2004). Several recent studies employing similar research designs as the present study (i.e., teachers provide surveys to students; student deliver surveys to their parents; parents complete measures and return to researchers by mail) showed similar variance in response rates with one achieving a 3% rate (Wood, 2006) and another achieving a 47% rate (Snell-Johns, 2004). One notable difference between the two studies is that the latter survey was distributed by a state board of education while the former was distributed by a third party researcher associated with a university. The current study’s response rate of 10.1%, while within the expected range in comparison to previous research, is at the low end of that range.

Return rates this low often result in a bias in which the sample does not accurately represent the population. In the present study in both Mitchell and Carter counties the parents responding to the survey had higher levels of education than did the general population. For example, in Carter County 91.4% of the parents responding to the survey had competed high school, while the percentage of graduates in the general population was only 76.2% (see Table 7 for further comparisons; U.S. Census Bureau, 2011). Past research suggests that people with
lower education levels are more likely to express negative attitudes towards mental health service use, as such, it is possible that this discrepancy in education level biased participants in this study towards increased willingness to seek treatment (Jagdeo, Cox, Stein, & Sareen, 2009).

Table 7

Comparison of Adult Education Levels of Respondents of this Study to those of the General Population

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Mitchell County Sample</th>
<th>Mitchell County Population</th>
<th>Carter County Sample</th>
<th>Carter County Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did Not Finish High School</td>
<td>17.0%</td>
<td>24.7%</td>
<td>8.6%</td>
<td>23.8%</td>
</tr>
<tr>
<td>Completed High School or Some College</td>
<td>59.1%</td>
<td>60.7%</td>
<td>74.9%</td>
<td>62.4%</td>
</tr>
<tr>
<td>Completed Bachelor’s Degree (at least)</td>
<td>23.9%</td>
<td>14.6%</td>
<td>16.5%</td>
<td>13.8%</td>
</tr>
</tbody>
</table>


There are several reasons why the return rate for this study may have been so low. Initially, the survey may have been composed at a reading level above that of many parents who received it. The average adult reading level is between a fourth and a sixth grade level (Pothier & Pothier, 2009). However, the Flesch-Kincaid Reading Grade Level score (Flesch, 1973; calculated by Microsoft Word 2007) showed that the questionnaires distributed in this research were written on a 7.5 grade level. Given this elevated reading level, it is likely that some parents
with lower education levels were unable to read or understand the questionnaires, thus making it more difficult to respond.

Several additional problems that may have contributed to the low response rate are the survey’s length (two pages front and back) and the fact that they were distributed very close to the end of the school year at a time that overlapped with state testing procedures. In order to increase survey return rates, future research in this area should use surveys composed at a lowered reading level, use surveys visibly endorsed by the school system, offer multiple avenues for parents to respond (e.g., web-based survey), distribute surveys early in the school year, and offer incentives for survey completion (Feil et al., 2007).

Finally, both the collection of ethnic background information and the distribution of non-English versions of the survey were omitted from this study after consulting with a panel of school administrators and teachers. These professionals suggested that because of low rates of non-Caucasian students attending school in these rural Appalachian districts (5.9% in Mitchell County and 4.5% in Carter County), the use of these techniques could unintentionally serve to identify student participants. Collection of ethnic background information, however, could help determine whether non-Caucasian parents perceive unique barriers to mental health treatment seeking. Further, the distribution of non-English versions of the survey could serve to increase return rates among parents who do not speak English in the home, thus increasing return rate and reducing the sample bias. Future research in this area should collect ethnic background information on the sample and offer non-English versions of surveys and other materials to increase applicability of the findings and to decrease the sampling bias.

One of the more interesting findings of this study was that increased endorsement of two barriers (i.e., “I do not think [treatment] would be confidential” and “I would not think that [treatment] would help”) were associated with greater decreases willingness to seek treatment by
parents who responded about the school setting than in any other setting. This finding is interesting because in no other setting did endorsed barriers have a uniquely negative effect on parents’ willingness to seek treatment. The reasons behind this relationship are unclear; however, as described above, one explanation may be that some parents may have misinterpreted the description provided for school-based services. The survey in this study was designed to imply that a child would see an independent psychologist, counselor, or therapist working in the school, instead of working for the school. Parents, however, may have misinterpreted the term “school-based services” as referring to services already provided by the school. This is a subtle distinction, but it is one that not only has implications for the interpretation of the results of the current study but it could have an impact rural parents’ willingness to seek treatment for their children. Future research in the area should clarify whether or not there is truly reduced willingness by rural parents to seek help in the school setting; whether or not rural parents perceive increased barriers to seeking school-based services; and whether or not endorsed barriers uniquely affect willingness to seek treatment in the school setting. Further questioning should answer whether these findings are the result of misinterpretations of the provided questionnaires or whether they are indicative of a deeper mistrust of rural public schools. Finally, before implementing school based services to increase the access that rural children and adolescents have to quality mental health care, future research should seek to elucidate innovative ideas to address barriers that parents perceive and increase parents willingness to seek mental health treatment in the school setting (i.e., the integration of other innovative models such as tele-mental health and/or primary care services into the school setting; the use of an advertising and education campaign to help parents better understand the services that are provided; and the addition of updated curriculum content training school psychologists to administer evidence based treatments in the school setting). The results of such research is
greatly needed and could help to pave the way for the implementation of innovative treatment models that result in improved mental health care provision to children living in rural areas across the United States.

**Conclusion**

Researchers have identified some common barriers that prevent parents in rural areas from seeking and receiving mental health services for their children (i.e., shortages of mental health professionals, economic disparities, lack of knowledge regarding mental health problems, and increased stigma regarding mental health disorders and treatments in rural communities). Alternative methods of service delivery such as integrated primary care, school-based services, and tele-mental health have been proposed (and have an emerging evidence base) to begin to address these barriers to treatment. The findings of the present study suggest that parents living in rural Appalachia reported equally high willingness and equally few barriers to seeking mental health services for their children over tele-mental health and integrated primary care services as they do for traditional services. As such, tele-mental health and integrated primary care may serve as acceptable alternatives for mental health service provision where traditional services are either unavailable or inaccessible. Parents asked about school-based services, however, reported reduced willingness and increased barriers to seeking mental health treatment in that setting. It is unclear whether this finding is indicative of parents’ true perceptions regarding seeking help in the school, or if it is reflective parents’ misinterpretation of survey items. As such, future research should be done to clarify whether school-based services would also serve as an acceptable alternative to traditional mental health.
REFERENCES


Appendix A: Study Measures – Private Practice or Community Clinic (Form 1)

Demographics

Directions: We are interested in learning about you and your family. Please answer the following questions about your family and the child that brought this survey home.

Child’s sex: _____ Male _____ Female

Child’s age: _____________________________________

Child’s school: ______________________________________

What is your relationship to the child? _____ Mother _____ Father _____ Other

Mother’s highest level of education:
____ did not complete high school
____ high school
____ 2-year college or technical school
____ 4-year college
____ post college degree

Father’s highest level of education:
____ did not complete high school
____ high school
____ 2-year college or technical school
____ 4-year college
____ post college degree

Have you ever talked about behavioral or emotional concerns that you have for this child with any of the following people? (Check all that apply)
____ my child’s teacher
____ our pastor or minister at church
____ close family members or friends
____ my child’s doctor
____ counselor or therapist
____ other __________________

Is your child currently enrolled in the special education program at his/her school? _____ Yes _____ No

Does your child currently take medication to help with behavioral or emotional difficulties? _____ Yes _____ No

Have you, or anyone in your immediate family ever sought help for a mental or behavioral health concern?
____ Yes, from a physician
____ Yes, from a psychologist or counselor
____ Yes, from a pastor or minister
____ Yes, from (Other) __________________
____ No, no one in my family has ever sought mental health treatment

Have you filled this survey for another child or adolescent living in your household? _____ Yes _____ No
Private Practice or Community Clinic

Instructions: When parents are concerned about their child’s development, behavior, or emotional well-being, they have different options for getting help. One option is to see a counselor, therapist, or psychologist working in a private practice or community mental health clinic. Parents have different feelings about getting help in these places and we are interested in knowing how you really feel. Please answer the following questions about this treatment option.

<table>
<thead>
<tr>
<th></th>
<th>Definitely Would</th>
<th>Not</th>
<th></th>
<th>Definitely Would</th>
<th></th>
</tr>
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<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Sometimes parents want to get help for their child but have difficulty doing so. If you decided you wanted to get help from a counselor, therapist, or psychologist for your child’s behavior or emotions in a private practice or community mental health clinic, which of these difficulties might you have? **Check all that apply.**

1. There would not be space available for my child or there would be long waiting lists to get help from a counselor, therapist, or psychologist in a private practice or community mental health clinic.
2. I would be afraid of what my family or friends would think if I sought help for my child from a counselor, therapist, or psychologist working in a private practice or community mental health clinic.
3. I do not have the money to pay for a counselor, therapist, or psychologist working in a private practice or community mental health clinic.
4. I would think my child’s problems are not so serious or I could handle them on my own.
5. I would be afraid my child might be labeled as a problem child by the system (people like a teacher, doctor, or juvenile court) if s/he went to a counselor, therapist, or psychologist working in a private practice or community mental health clinic.
6. I don’t have a way to get to a counselor, therapist, or psychologist working in a private practice or community mental health clinic.
7. I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist working in a private practice or community mental health clinic.
8. I would be afraid that my child would be teased by friends if he or she went to see a counselor, therapist, or psychologist in a private practice or community mental health clinic.
9. The available appointment times would not be convenient in a private practice or community mental health clinic.
10. I would not think that treatment with a counselor, therapist, or psychologist in a private practice or community mental health clinic would help.
Appendix B: Study Measures – Primary Care (Form 2)

Demographics

Directions: We are interested in learning about you and your family. Please answer the following questions about your family and the child that brought this survey home.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s sex:</td>
<td>_____ Male  _____ Female</td>
</tr>
<tr>
<td>Child’s age:</td>
<td>_____________________________________</td>
</tr>
<tr>
<td>Child’s school:</td>
<td>_____________________________________</td>
</tr>
<tr>
<td>What is your relationship to the child?</td>
<td>_____ Mother  _____ Father  _____ Other</td>
</tr>
<tr>
<td>Mother’s highest level of education:</td>
<td>_____ did not complete high school</td>
</tr>
<tr>
<td></td>
<td>_____ high school</td>
</tr>
<tr>
<td></td>
<td>_____ 2-year college or technical school</td>
</tr>
<tr>
<td></td>
<td>_____ 4-year college</td>
</tr>
<tr>
<td></td>
<td>_____ post college degree</td>
</tr>
<tr>
<td>Father’s highest level of education:</td>
<td>_____ did not complete high school</td>
</tr>
<tr>
<td></td>
<td>_____ high school</td>
</tr>
<tr>
<td></td>
<td>_____ 2-year college or technical school</td>
</tr>
<tr>
<td></td>
<td>_____ 4-year college</td>
</tr>
<tr>
<td></td>
<td>_____ post college degree</td>
</tr>
</tbody>
</table>
| Have you ever talked about behavioral or emotional concerns that you have for this child with any of the following people? (Check all that apply) | _____ my child’s teacher  
_____ our pastor or minister at church  
_____ close family members or friends  
_____ my child’s doctor  
_____ counselor or therapist  
_____ other __________________________________ |
| Is your child currently enrolled in the special education program at his/her school? | _____ Yes  _____ No |
| Does your child currently take medication to help with behavioral or emotional difficulties? | _____ Yes  _____ No |
| Have you, or anyone in your immediate family ever sought help for a mental or behavioral health concern? | _____ Yes, from a physician  
_____ Yes, from a psychologist or counselor  
_____ Yes, from a pastor or minister  
_____ Yes, from (Other) ____________  
_____ No, no one in my family has ever sought mental health treatment |
| Have you filled out this survey for another child or adolescent living in your household? | _____ yes  _____ No |
Primary Care

Directions: When parents are concerned about their child's development, behavior, or emotional well-being, they have different options for getting help. One option is to see a counselor, therapist, or psychologist working in their child's doctor's office. In this case, your child's regular doctor would introduce you to a counselor, therapist, or psychologist while you were at the doctor's office and you would get your help from that person in that office. Your doctor and counselor would work as a team. Parents have different feelings about getting help this kind of help in the doctor's office and we are interested in knowing how you really feel. Please answer the following questions about this treatment option.

1. If you were concerned about your child's behavior or emotions, would you seek help from a counselor, therapist, or psychologist working in your child’s doctor’s office?

<table>
<thead>
<tr>
<th>Definitely Would</th>
<th>Not</th>
<th>Definitely Would</th>
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<td>3</td>
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<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Sometimes parents want to get help for their child but have difficulty doing so. If you decided you wanted to get help from a counselor, therapist, or psychologist working in your child’s doctor’s office, which of these difficulties might you have? Check all that apply.

2. There would not be space available for my child or there would be long waiting lists to get help from a counselor, therapist, or psychologist in my child’s doctor’s office.

3. I would be afraid of what my family or friends would think if I sought help for my child from a counselor, therapist, or psychologist in my child’s doctor’s office.

4. I do not have the money to pay for a counselor, therapist, or psychologist working in my child’s doctor’s office.

5. I would think my child’s problems are not so serious or I could handle them on my own.

6. I would be afraid my child might be labeled as a problem child by the system (people like a teacher, doctor, or juvenile court) if s/he went to a counselor, therapist, or psychologist working in my child’s doctor’s office.

7. I don’t have a way to get to a counselor, therapist, or psychologist working in my child’s doctor’s office.

8. I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist working in my child’s doctor’s office.

9. I would be afraid that my child would be teased by friends if he or she went to see a counselor, therapist, or psychologist in my child’s doctor’s office.

10. The available appointment times would not be convenient at my child’s doctor’s office.

11. I would not think that treatment with a counselor, therapist, or psychologist in my child’s doctor’s office would help.
### Appendix C: Study Measures – School (Form 3)

**Demographics**

**Directions:** We are interested in learning about you and your family. Please answer the following questions about your family and the child that brought this survey home.

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child's sex:</td>
<td>_____ Male       _____ Female</td>
</tr>
<tr>
<td>Child's age:</td>
<td>_____________________________________</td>
</tr>
<tr>
<td>Child's school:</td>
<td>______________________________________</td>
</tr>
<tr>
<td>What is your relationship to the child?</td>
<td>_____ Mother       _____ Father       _____ Other</td>
</tr>
<tr>
<td>Mother's highest level of education:</td>
<td>_____ did not complete high school</td>
</tr>
<tr>
<td></td>
<td>_____ high school</td>
</tr>
<tr>
<td></td>
<td>_____ 2-year college or technical school</td>
</tr>
<tr>
<td></td>
<td>_____ 4-year college</td>
</tr>
<tr>
<td></td>
<td>_____ post college degree</td>
</tr>
<tr>
<td>Father's highest level of education:</td>
<td>_____ did not complete high school</td>
</tr>
<tr>
<td></td>
<td>_____ high school</td>
</tr>
<tr>
<td></td>
<td>_____ 2-year college or technical school</td>
</tr>
<tr>
<td></td>
<td>_____ 4-year college</td>
</tr>
<tr>
<td></td>
<td>_____ post college degree</td>
</tr>
<tr>
<td>Have you ever talked about behavioral or emotional concerns that you have for this child with any of the following people? (Check all that apply)</td>
<td>_____ my child’s teacher</td>
</tr>
<tr>
<td></td>
<td>_____ our pastor or minister at church</td>
</tr>
<tr>
<td></td>
<td>_____ close family members or friends</td>
</tr>
<tr>
<td></td>
<td>_____ my child’s doctor</td>
</tr>
<tr>
<td></td>
<td>_____ counselor or therapist</td>
</tr>
<tr>
<td></td>
<td>_____ other ___________________________________</td>
</tr>
<tr>
<td>Is your child currently enrolled in the special education program at his/her school?</td>
<td>_____ Yes       _____ No</td>
</tr>
<tr>
<td>Does your child currently take medication to help with behavioral or emotional difficulties?</td>
<td>_____ Yes       _____ No</td>
</tr>
<tr>
<td>Have you, or anyone in your immediate family ever sought help for a mental or behavioral health concern?</td>
<td>_____ Yes, from a physician</td>
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<td></td>
<td>_____ Yes, from a psychologist or counselor</td>
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<td></td>
<td>_____ Yes, from a pastor or minister</td>
</tr>
<tr>
<td></td>
<td>_____ Yes, from (Other)</td>
</tr>
<tr>
<td></td>
<td>_____ No, no one in my family has ever sought mental health treatment</td>
</tr>
<tr>
<td>Have you filled out this survey for another child or adolescent living in your household?</td>
<td>_____ yes       _____ No</td>
</tr>
</tbody>
</table>
Directions: When parents are concerned about their child’s development, behavior, or emotional well-being, they have different options for getting help. One option is to see a counselor, therapist, or psychologist working in their child’s school. Usually, school counselor or psychologists administer tests or provide career guidance but this would be someone trained to help you and your child with the concerns you have and would work with you in the school your child attends. Your child’s school teachers and counselor would work as a team. Parents have different feelings about getting this kind of help in the school and we are interested in knowing how you really feel. Please answer the following questions about this treatment option.

1. If you were concerned about your child’s behavior or emotions, would you seek help from a counselor, therapist, or psychologist working in your child’s school?

<table>
<thead>
<tr>
<th>Definitely Would Not</th>
<th>Definitely Would</th>
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</table>

Sometimes parents want to get help for their child but have difficulty doing so. If you decided you wanted to get help from a counselor, therapist, or psychologist for your child’s behavior or emotions, which of these difficulties might you have? Check all that apply.

2. There would not be space available for my child or there would be long waiting lists to get help from a counselor, therapist, or psychologist in my child’s school.

3. I would be afraid of what my family or friends would think if I sought help for my child from a counselor, therapist, or psychologist in my child’s school.

4. I do not have the money to pay for a counselor, therapist, or psychologist working in my child’s school.

5. I would think my child’s problems are not so serious or I could handle them on my own.

6. I would be afraid my child might be labeled as a problem child by the system (people like a teacher, doctor, or juvenile court) if s/he went to a counselor, therapist, or psychologist working in my child’s school.

7. I don’t have a way to get to a counselor, therapist, or psychologist working in my child’s school.

8. I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist working in my child’s school.

9. I would be afraid that my child would be teased by friends if he or she went to see a counselor, therapist, or psychologist in his or her school.

10. The available appointment times would not be convenient in my child’s school.

11. I would not think that treatment with a counselor, therapist, or psychologist in my child’s school would help.
Appendix D: Study Measures – Telehealth (Form 4)

Demographics

Directions: *We are interested in learning about you and your family. Please answer the following questions about your family and the child that brought this survey home.*

---

Child’s sex: _____ Male _____ Female

Child’s age: _____________________________________

Child’s school: ______________________________________

What is your relationship to the child? _____Mother _____Father _____Other

Mother’s highest level of education:
- _____ did not complete high school
- _____ high school
- _____ 2-year college or technical school
- _____ 4-year college
- _____ post college degree

Father’s highest level of education:
- _____ did not complete high school
- _____ high school
- _____ 2-year college or technical school
- _____ 4-year college
- _____ post college degree

Have you ever talked about behavioral or emotional concerns that you have for this child with any of the following people? (Check all that apply)
- _____ my child’s teacher
- _____ our pastor or minister at church
- _____ close family members or friends
- _____ my child’s doctor
- _____ counselor or therapist
- _____ other __________________

Is your child currently enrolled in the special education program at his/her school? _____Yes _____No

Does your child currently take medication to help with behavioral or emotional difficulties? _____Yes _____No

Have you, or anyone in your immediate family ever sought help for a mental or behavioral health concern?
- _____ Yes, from a physician
- _____ Yes, from a psychologist or counselor
- _____ Yes, from a pastor or minister
- _____ Yes, from (Other) ______________
  _____ No, no one in my family has ever sought mental health treatment

Have you filled out this survey for another child or adolescent living in your household? _____yes _____No
Telehealth

Directions: When parents are concerned about their child’s development, behavior, or emotional well-being, they have different options for getting help. One option is to see a counselor, therapist, or psychologist by telehealth. In this situation, you and your child could talk with a counselor over a television in which each of you could see and hear the other. Often times with telehealth, your child’s teachers, doctor, and counselor can work as a team. Parents have different feelings about getting this kind of help with videoconferencing and we are interested in knowing how you really feel. Please answer the following questions about this treatment option.

1. If you were concerned about your child’s behavior or emotions, would you seek help from a counselor, therapist, or psychologist working in a private practice or community mental health clinic?

| Definitely | Would Not | Definitely | Would
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</table>

Sometimes parents want to get help for their child but have difficulty doing so. If you decided you wanted to get help from a counselor, therapist, or psychologist for your child’s behavior or emotions by telehealth, which of these difficulties might you have? Check all that apply.

2. There would not be space available for my child or there would be long waiting lists to get help from a counselor, therapist, or psychologist by telehealth.

3. I would be afraid of what my family or friends would think if I sought help for my child from a counselor, therapist, or psychologist by telehealth.

4. I do not have the money to pay for a counselor, therapist, or psychologist by telehealth.

5. I would think my child’s problems are not so serious or I could handle them on my own.

6. I would be afraid my child might be labeled as a problem child by the system (people like a teacher, doctor, or juvenile court) if s/he went to a counselor, therapist, or psychologist by telehealth.

7. I don’t have a way to get to a counselor, therapist, or psychologist by telehealth.

8. I do not think it would be confidential (private) if my child were to see a counselor, therapist, or psychologist by telehealth.

9. I would be afraid that my child would be teased by friends if he or she went to see a counselor, therapist, or psychologist by telehealth.

10. The available appointment times would not be convenient by telehealth.

11. I would not think that treatment with a counselor, therapist, or psychologist by telehealth would help.
VITA

JEFFREY H. ELLISON

Personal Data:
Date of Birth: May 17, 1981
Place of Birth: Greenwood, South Carolina

Education:
Master of Arts in Psychology, August 2011
East Tennessee State University, Johnson City, TN

North Carolina Teaching Licensure, May, 2008
University of North Carolina Charlotte, Charlotte, NC
East Carolina University, Greenville, NC

Bachelor of Science in Psychology, August 2003
Appalachian State University, Boone, NC

Professional Experience:
Behavioral Health Consultant/ Pediatric Primary Care Externship,
Fall 2010/Spring 2011
Mountain View Pediatrics, Marion VA

Behavioral Health Consultant/ Pediatric Primary Care Externship,
Fall 2010/Spring 2011
ETSU Pediatrics, Johnson City, TN

Graduate Research Assistant, August 2008- August 2010
Dept. of Clinical Psychology
East Tennessee State University, Johnson City, TN

Special Education Teacher, Adapted Curriculum, August 2005- May 2008
Gardner Park Elementary School
Gaston County Schools, Gastonia, NC

Psycho-educational Counselor, Summer 2007 – Summer 2008
Dreamweavers Inc., Gastonia, NC

Psycho-educational Counselor, Summer 2004 – Spring 2005
True’s Kids Inc., Gastonia, NC

Therapeutic Wilderness Camp Counselor, Fall, 2003 – Summer 2004
Timber Ridge Treatment Center, Salisbury, NC
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Graduate Student Association in Psychology (GSAP) at ETSU
American Psychological Association (APA)
National Association of Rural Mental Health (NARMH)
Collaborative Family Healthcare Association (CFHA)
Tennessee Psychological Association (TPA)

Presentations:


Poster Presentations:

Xie, W., Ellison, J., & Polaha, J. (April, 2010). *Mental Health Seeking and Related Stigma of International Students at ETSU*. Poster presented at the Appalachian Student Research Symposium, Johnson City, TN.


**Grants:**

Polaha, J. & Ellison, J. *Parents’ Perceived Stigma Regarding Mental Health Services for Children: a Rural-Non-Rural Comparison Pilot Study.* Hayward Research Grant, ETSU Psychology Dept., October, 2008 ($1,250)