PRIMARY HEALTH CARE PROVIDER DIFFERENCES IN THE MANAGEMENT OF

PRESCHOOL AGED CHILDREN'S MENTAL HEALTH ISSUES

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The Supervisory Committee certifies that this *disquisition* complies with North Dakota State University's regulations and meets the accepted standards for the degree of

MASTER OF SCIENCE

ABSTRACT

Erickson, Kendra Nicole, M.S., Department of Sociology, Anthropology, and Emergency Management, College of Arts, Humanities, and Social Sciences, North Dakota State University, November 2010. Primary Health Care Provider Differences in the Management of Preschool Aged Children's Mental Health Issues. Major Professor: Dr. Richard W. Rathge.

This thesis examined health care providers' methods of identification and treatment of preschool aged children's (age 0 to 5) mental health issues and barriers to those methods in the Fargo-Moorhead metropolitan area. I used a quantitative approach and utilized secondary data from a 2007 Community Access to Child Health (CATCH) Study. The conceptual framework of the domains of expertise guided this thesis. The purpose of this study was to determine whether there were significant differences by type of health care providers' methods to identify and treat preschool aged children's mental health issues; to identify how barriers to indentifying and treating children's mental health issues differ by type of health care provider; and to investigate the possible contextual characteristics that influence the methods used by health care providers to identify and treat preschool aged children's mental health issues.

Findings from this research suggested that there is limited support for the theoretical framework of the socialization of physicians and non-physicians: domains of expertise, which indicated that differences should exist regarding the identification and treatment of children's mental health issues based on the type of health care provider (i.e., physician and non-physician). However, there were several notable exceptions. There were several differences based on the type of providers' treatment methods. There also were a number of differences based on health care providers' type of practice (i.e.,

pediatric group practice and walk-in practice) regarding their identification level of sensitivity and treatment methods.

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CHAPTER I. INTRODUCTION

As with any problem, the first step towards a solution is the recognition of its importance and the influence it may have on individuals in society (FPG Child Development Institute: University of North Carolina-Chapel Hill [FPG CDI: UNC-Chapel Hill], 2008). Research has clearly documented the underrecognition of mental health issues in primary health care settings (Rushton, Clark, & Freed, 2000). In fact, increased national attention has been drawn to the scope of children's mental health issues through the United States Department of Health and Human Services Report of the Surgeon General's Conference on Children's Mental Health (Ringeisen, Anderson Oliver, & Menvielle, 2002). Today there is an increasing need to improve methods used to identify and treat preschool aged children's (age 0 to 5) mental health issues (Lambing, Adams, Fox, & Divine, 2004). Therefore, one of the next steps in preschool aged children's mental health research is to recognize the potential factors in the health care system that obstructs successful identification and treatment of mental health issues. One such complicating factor that could influence the identification and treatment of preschool aged children's (age 0 to 5) mental health issues is the wide variety of health care providers (e.g., physicians, nurse practitioners, and physician assistants) who are tasked with monitoring and treating children in the health care setting (Lambing et al., 2004).

Historically, mental health disorders were viewed as an adult problem. However, over the last 50 years, awareness of child and adolescent mental health issues (e.g., behavioral disorders, attention deficit hyperactivity disorder, anxiety, and depression) has evolved from the denial of the problem, to comparisons with adults, and finally to the realization and recognition that there are in fact differences in mental health issues among

various age groups of children. For instance, infants and toddlers are not simply small school-aged children in regards to mental health. Compared to older children or adolescents, infants and toddlers have a unique set of behaviors and reactions to life events, because they are at a different stage in their social, physical, emotional, and cognitive development. With this information it is clear that younger children require a separate classification specifically relevant to infants', toddlers', and preschoolers' mental health issues (Struner, Albus, Thomas, & Howard, 2007; United States Department of Health & Human Services [HHS], 1999).

Compared to a century ago, children's health threats have taken a new avenue. Health care providers who were once concerned with infection and nutrition are now worried about a "new morbidity" which revolves around children's "behavior problems, learning difficulties, family dysfunction, child abuse, and environmental violence" (Struner et al., 2007, p.7). As of 2005, 20.0% of children suffer from mental health issues (Miller, Johnston, Klassen, Fine, & Papsdorf, 2005; United States Department of HHS, 1999; United States Department of Health & Human Services [HHS], Substance Abuse and Mental Health Services Administration [SAMHSA] & Center for Mental Health Services, 2003). Looking to the future, the World Health Organization (WHO) expects that by 2020 one of the five most common causes of children's morbidity, mortality, and disability worldwide will be childhood mental health issues (Ringeisen et al., 2002).

It has been recommended that to combat this problem, mental health services for children will need to be improved. Specifically, one way to improve the health of preschool aged children who have mental health issues is to distinguish whether the identification and treatment methods differ by the type of health care provider. Therefore,

different types of primary health care providers should be studied because similar care should be provided to preschool aged children whether they see a pediatrician, family practice physician, physician assistant, or nurse practitioner (Ringeisen et al., 2002). Furthermore, if primary health care providers do differ, the factors associated with differences must be explored. For that reason, there is a need to explain the differences by identifying the associated barriers that influence the health care providers' identification and treatment methods (Butler, Oyewole, & Pitt, 2000; Rushton et al., 2000).

Research has shown that health care providers overlook possible mental health indicators (Ell, 2006; Gazalle, Hallal, & Silva de Lima, 2004). In particular, Simonian, Tarnowski, Stancian, Friman, and Atkins (1991) found that physicians under-identify children with mental health issues. They also reported that physicians' approaches to identifying issues could be considered insufficient. The consequences of not addressing mental health issues are serious, costly, and can affect the way individuals see themselves, think, and feel (United States Department of Health & Human Services [HHS], Substance Abuse and Mental Health Services Administration [SAMHSA] & Center for Mental Health Services, 1999a). It has been noted that mental health issues can also impede children's quality of life by negatively influencing everyday activities, behaviors, and relationships with friends, family, and community, which are important components of their social, emotional, and behavioral wellbeing (Ringeisen et al., 2002; United States Department of HHS, 1999). Children's mental health issues can also lead to young children having difficulty in programs that focus on school readiness, such as public preschool or daycare, followed later in life by the possibility of school failure, drug abuse, violence, and suicide

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(FPG CDI: UNC-Chapel Hill, 2008; United States Department of HHS,SAMHSA & Center for Mental Health Services, 1999a).

Saarela and Engestrom (2003) studied mental health identification issues and found that primary health care providers identified only 37.0% of patients who were confirmed to have a psychiatric disorder by a specialist. A more recent study by FPG CDI: UNC-Chapel Hill (2008) found that only 21.0% of children and adolescents who would have benefited from the identification of mental health issues actually received mental health screenings. Additionally, in that same study, of the children who were identified as having a mental health issue, only 20.0% of those who needed treatments actually receive the services. These and other studies call into question the effectiveness and adequacy of the current efforts to address preschool aged children's (age 0 to 5) mental health issues, specifically identification and treatment. The segment of preschool aged children who require attention, due to risk of an unidentified mental health issue, are those children who have not been seen by a mental health specialist and/or whose parents or guardians are unaware of the mental health issue. For that reason, a compelling need exists to improve primary health care providers' methods of identification and treatment.

Preschool aged children are more likely to receive general health care from a primary health care provider, than they are to receive mental health services from a specialist. Supplying the majority of health care for children, primary health care providers see infants, toddlers, and preschool aged children more often than their older counterparts on a regular basis. For instance, according to the American Academy of Pediatrics, to monitor children's development, wellbeing, and health after birth, children are

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recommended to see a primary health care provider seven scheduled times within the first year and three scheduled times during the second year alone (Mozingo, 2010).

With the responsibility of identification and treatment of children's mental health issues largely on the shoulders of primary health care providers, the identification and treatment of children's mental health issues are a growing challenge for these professionals (Saarela & Engestrom, 2003; Simonian et al., 1991). The identification of mental health issues has proved to be more challenging in children than in adults for a number of reasons. Addressing mental health issues among the infant, toddler, and preschool population requires an additional and extraordinary set of demands on health care providers. For instance, health care providers must work not only with the infant, toddler, or preschooler, but they also must work with the child's family or guardian (Weston, 2005).

Purpose of the Study

There is a growing awareness of the need to improve the identification and treatment of preschool aged children's mental health issues. Equally important is the need to determine whether differences exist in the successful identification and treatment of mental health issues among children (age 0 to 5) by type of health care provider. Therefore, the purpose of this research study was 1) to determine whether there are significant differences by type of health care providers' (i.e., physicians and non-physician [nurse practitioners/physician assistants]) methods to identify and treat preschool aged children's (age 0 to 5) mental health issues; 2) to detect if barriers to indentifying and treating children's mental health issues differ by type of health care provider; and 3) to investigate the possible contextual characteristics that influence the methods used by health care providers to identify and treat children's mental health issues. This study took a

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quantitative approach to address these three issues and to explore the effect and influence of primary health care providers' and their contextual characteristics on children's mental health management.

For purposes of clarity, when I use the term *health care providers* throughout this paper, I am referring to all health care providers, which include physicians, nurse practitioners, and physician assistants. When I use the term *physician*, I am referring to medical doctors (MD). Additionally, when referring to *non-physician*, it includes nurse practitioners and physician assistants. Furthermore, I chose to separate the respondents and create two groups (i.e., physician and non-physician) based upon the type of provider variable. The reason why I collapsed the three health care provider groups into two groups was due largely in part to small sample size. The makeup of the two health care provider groups also was based on the similarities and differences in health care providers' educational degrees and specialty areas.

CHAPTER II. REVIEW OF LITERATURE

Within the medical setting, there are multiple types of health care providers (e.g., certified nursing assistants, registered nurses, nurse practitioners, physician assistants, and physicians). Although primary health care providers fulfill a variety of medical roles, many take on similar patient responsibilities (Lambing et al., 2004). Some examine and provide treatment to children, adolescents, adults, and older adults.

Theoretical Approach: Socialization of Physicians and Non-Physicians

Although tasked with similar responsibilities, health care providers come from diverse disciplines, which each have a unique way of socializing, training, and educating the individual on the normative language, behavior, thinking, dress, and demeanor (Carpenito-Moyet, 2008; Clark, 1997). Therefore, health care providers' professional socialization differs based upon their particular occupation and discipline (Clark, 1997). Health care providers develop knowledge bases and skill sets through their medical education, specialty training, backgrounds, and experiences that serve as central starting points to observe, identify, and frame challenging medical situations (Weston, 2005).

Literature regarding the socialization of physicians indicated that physicians' attitudes toward their patients are shaped during their medical education. While conducting their residency, it has been noted that physicians go through a "desensitizing and dehumanizing" phase (Clark, 1997).

Domains of expertise

As a result of the variety of medical backgrounds, researchers hypothesized that different types of health care providers have distinct methods to identification of health issues and treatment of their patients (Carpenito-Moyet, 2008; Lambing et al., 2004). As a

sub-theory of the socialization of physicians and non-physicians, Carpenito-Moyet (2008) captured this viewpoint in her conceptual framework of the *domains of expertise*. Carpenito-Moyet (2008) uses her domains of expertise to explain why different types of health care providers (e.g., physicians and nurse practitioners) have distinct and diverse insight relevant to the identification of the patient's illness and treatment of their patients. Her theoretical framework makes a distinction between discipline-specific expertise using three fields or "domains" of practice: *advanced practice of nursing, medical practice*, and *shared practice* (Carpenito-Moyet, 2008).

The first domain, the advanced practice of nursing, was defined as a domain comprised of advanced nurses, such as nurse practitioners, certified registered nurse anesthetists, clinical nurse specialists, and certified midwives (Carpenito-Moyet, 2008). Advanced nurses check for high-risk patients, in addition to high-risk families and/or communities. They educate patients on preventative health care approaches and tend to use a range of non-drug interventions (e.g., counseling and non-traditional therapy methods). Although advanced nurses are accountable for diagnosing and treating medical issues, they consult physicians for more complex medical issues (Carpenito-Moyet, 2008).

The second domain, medical practice, was defined as a domain that includes all physicians (e.g., family practice physicians, general practitioners, pediatricians, and emergency physicians). Physicians manage complicated medical issues, as well as acute and chronic diseases with high death rates (Carpenito-Moyet, 2008).

The third domain was the shared practice domain. Carpenito-Moyet defined this category as a shared domain of expertise which combines both the specific domains of the advanced practice of nursing and the medical practice. This interdependent domain

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includes health care providers whose practice overlaps and fills a flexible role between the advanced practice of nursing and the medical practice. Health care providers who occupy this shared practice domain, focus on cooperative or integrated disease prevention, patient assessment, medical diagnosis, management education, management using medicine, and interventions (Carpenito-Moyet, 2008). Health care units using this integrating approach encourage the nursing and medical staff to interdependently identify health issues and treat patients. This shared practice domain is not typical, rather physicians most frequently reside in the domain of medical practice and advanced nurses stick to the advanced practice of nursing domain (Lambing et al., 2004).

Health Care Provider Differences

The literature pertaining to the domains of expertise suggests that there are practice differences between health care providers (Carpenito-Moyet, 2008). Following this framework, physicians and nurse practitioners will approach the identification and treatment of children mental health issues differently, due to differences in education, professional background, and practice duties and abilities (Carpenito-Moyet, 2008; Lambing et al., 2004; Saarela & Engestrom, 2003).

Case management

Some of these differences have been outlined within the scientific literature. For example, Ramsay, McKenzie, and Fish (1982) noted that nurse practitioners were able to create enhanced patient health outcomes relative to physicians in a weight reduction study. Patients treated by nurse practitioners lost more weight and had significantly lower blood pressure than those patients treated by physicians, which could imply that a successful medical outcome may not be attributed solely to technical skills. This study found that the

difference may be attributed to nurse practitioners' preference to manage their own patients when they have a knowledge base in the issue being addressed, while physicians refer out for specialized help. For nurse practitioners, managing their own patients and following them more closely by scheduling more appointments, allowed for more personal contact. Additionally, this gave nurse practitioners a greater opportunity to observe and monitor their patients, which helps with the control and management of health issues (Ramsay et al., 1982).

Consultation and communication

Seale, Anderson, and Kinnersley (2006) also found significant differences among nurse practitioners and physicians in their approach to consultation and communication with their patients regarding self-reporting care activity. In their research, they found nurse practitioners had better communication with patients because of a perceived closer social status relative to physicians (Seale et al., 2006). Another study conducted by Mishler (1984), which studied the medical interview through methods of language analysis, found that there was a large "cultural gap" between the methodical and technical domain of the physician and the life of the patient (Clark, 1997, p. 445). Several research studies also found that nurse practitioners more commonly have been shown to engage in "social, emotional, and patient-centered talk" with patients and their families during a consultation which increases the nurse practitioners' successful management of care (Lambing et al., 2004; Ramsay et al., 1982; Seale et al., 2006, p. 539). Communication between health care providers, their patients, and patients' family members has been noted to be important in the identification process of mental health issues, because information pertaining to the

infant, toddler, and preschooler patients' health is needed to be easily exchanged (Seale et al., 2006).

The consultation time with young patients and their families also plays a role in the identification and treatment of mental health issues, because the length of consultation time is linked to the amount of detailed information that can be observed, exchanged, or communicated to and from health care providers (Rushton et al., 2000). Differences have been found between health care providers' consultation time. One explanation for the difference in consultation time between nurse practitioners and physicians is their role expectations. Nurse practitioners typically see fewer patients, provide longer lasting consultations, schedule more appointments, and follow their patients more closely compared to physicians (Ramsay, et al., 1982; Seale et al., 2006). There is also evidence that suggested that physicians are less successful at recognizing symptoms of a disease during a medical visit than nurse practitioners and physician assistants (Running, Kipp, & Mercer, 2006; Rushton et al., 2000).

The transmission of educational materials between health care providers, child patients, and their families has been linked to the length of consultation time and communication. Simborg, Starfield and Horn (1978) found that nurse practitioners and physician assistants tended to further stress patient education compared to that of physicians. Parallel to the Simborg et al. study (1978), Running and colleagues (2006) established that nurse practitioners were more concerned with teaching and educating their patients rather than prescribing medication. When comparing physicians' and nurse practitioners' consultations, the length of time that nurse practitioners spend on

consultations has been linked to more detailed patient discussions and advice regarding the potential side effects of treatments and treatment directions (Seale et al., 2006).

The concern regarding effective communication between patient and health provider is especially vital given the stigma related to mental health issues. Studies documented that parents tend to not divulge their concerns pertaining to their children's mental health (Simonian et al., 1991). Many parents do not want to have their child labeled or stigmatized by the diagnosis (Rushton et al., 2000). Estimates from one study found that of mothers who were at a pediatrician appointment, 70.0% had a concern related to their children's behavioral, developmental, and emotional wellbeing; however, only 28.0% of these mothers expressed their concern for their children's mental health to the pediatrician (Simonian et al., 1991).

Care activities

Lambing and colleagues (2004) compared the care activities and clinical outcomes of an inpatient geriatric population treated by nurse practitioners and physicians. Significant differences were found between nurse practitioners and physicians in several self-reporting categories. For example, nurse practitioners spent a higher percentage of time completing progress notes and care planning than physicians. In contrast, physicians spent significantly more time on literature reviews than did nurse practitioners. The study also demonstrated significant differences between the two types of health care providers when asked to prioritize care activities. Nurse practitioners ranked prioritizing advanced directive discussion activities with a patient higher than physicians. However, physicians ranked attention to functional status as a higher priority than nurse practitioners (Lambing et al., 2004).

<u>Treatment management</u>

Other studies have found differences in treatment management decisions. When prescribing drug therapies, physicians have been shown to be less cautious than nurse practitioners (Simborg et al., 1978). A contradictory study conducted by Ladd (2005) found no significant difference in the prescription of antibiotics between physician and nurse practitioner visits. Still other studies found that nurse practitioners prefer to manage their own patients while physicians tend to refer out to other specialized professionals (Badger, Lookinland, Tiedeman, Anderson, & Eggett, 2002; Ramsay et al., 1982; Simborg et al., 1978).

Influences on the Barriers in the Identification and Treatment Process

The domains of expertise literature suggested that health care providers will have differing methods to identify and treat children, due to differences in education, professional background, and practice duties and abilities (Carpenito-Moyet, 2008; Lambing et al., 2004; Saarela & Engestrom, 2003). Therefore, there is a need to recognize what differences exist and why there is a difference in the methods used to identify and treat infant, toddler, and preschool patients between physicians and nurse practitioners. The literature pertaining to the barriers of identification and treatment pointed out four categories of barriers: reimbursement and financial issues, time constraints, external issues, and training.

<u>Reimbursement and financial issues</u>

One barrier that has been noted to impact health care providers' identification and treatment of mental health issues is reimbursement and financial difficulties (Rushton, Fant, & Clark, 2004). Health care providers' reimbursement for services from insurance

companies can prove to be difficult, because there is limited mental health coverage provided by insurance companies (Rushton et al., 2004). Typically insurance companies do not cover mental health care as fully as general health care (United States Department of Health & Human Services [HHS], Substance Abuse and Mental Health Services Administration [SAMHSA] & Center for Mental Health Services, 1999b). Additionally, the lack of mental health coverage, the lack of prescription drug coverage, and the high cost of medications (e.g., psychotropic medications) results in financial strain on children's families (Ringeisen et al., 2002). Consequentially, when insurance reimbursement falls short and family resources are scarce, health care providers incur the cost of the service, which eventually leads to fewer mental health screenings for children (Ell, 2006; HHS, SAMHSA & Center for Mental Health Services, 1999b; MacReady, 2004; United States Department of Health & Human Services [HHS], 2009).

Furthermore, a study found that financial obstacles that face children's families are the inability to afford a mental health screening, test, and/or treatment. A study conducted by Gulitz, Bustillo-Hernandez, and Kent (1998) found that health care providers did not use screening tests to identify an illness, due to the high cost of the procedure. Other studies suggest that insufficient reimbursements could deter the mental health treatment within a health care practice (Ell, 2006).

Time constraints

The literature pointed out a second barrier for health care providers, time constraints. The amount of office time that a health care provider spends with a patient averages between 11 and 15 minutes (Ringeisen et al., 2002; Simonian et al., 1991). This signifies that health care providers have a limited amount of time that they are able to

observe and communicate with children and their family members (Ringeisen et al., 2002). The lack of patient-provider interaction suggests that open communication with children and their families is an important necessity. If families are reluctant to talk to health care providers about mental health concerns, the detection of mental health issues falls solely on the health care provider. In this type of situation it is much more difficult to identify and treat infant, toddler, and preschooler mental health issues (Simonian et al., 1991).

External issues

Several studies noted that a third barrier for health care providers is external issues. Research conducted by Ell (2006) indicated that one of the leading external barriers to the identification and treatment of mental health issues is the difficulty to gain access to mental health specialists. The number of mental health specialists who are qualified to oversee and treat infant, toddler, and preschooler mental health issues is fairly small; therefore, there are long wait periods and/or a complete lack of a specialist in many areas. Additionally, some health care providers have limited resources to send children to specialists (Wachter, 2006).

Literature stated that traditionally, health care providers have been gatekeepers to specialist services, which is one explanation why researchers attribute the lack of mental health identification to health care providers' underutilization of psychiatric specialist referrals (Butler et al., 2000; Rushton et al., 2000). Gatekeeping was initially established to keep healthcare costs down. The premise behind gatekeeping is for the primary health care providers to manage the majority of their patients' care themselves and only refer patients to the more costly specialist under justified situations (Ferris, Perrin, Manganello, Chang, Causino, & Blumenthal, 2001).

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Another external issue that has been found is the noncompliance of prescribed treatments by patients' families or guardians. Whether the prescribed treatment is medication and/or counseling, patients' families have been shown not to follow through with the prescribed treatment under some circumstances (Ell, 2006). However, treatment compliance has been shown to increase when patients and their families are part of the planning process (Zuckerbrot, Cheung, Jensen, Stein, Laraque, & GLAD-PC Steering Group, 2007).

Training

Lastly, Ell (2006) indicated that one of the foremost barriers to effective mental health identification was lack of specific training and educational support for health care providers. Freund, Moskowitz, Lin, and McKinlay (2003) found that health care providers have difficulty identifying and treating mental health issues. However, with further training, health care providers' identification and treatment rates have been shown to improve.

Seal and colleagues (2006) also found that the training of nurse practitioners may be significantly different from that of physicians. For example, nurse practitioners were "taught to assess patients using nursing models that depict individuals as motivated towards independence when their health is comprised, so that the role of nurse is specifically defined as enabling patients to self-help" (Seale et al., 2006, p. 540). Relating back to the domains of expertise, it is possible that nurse practitioners have retained this prior nursing component of their training while also incorporating another level of medical skills (Seale et al., 2006).

Due to lack of training concerning the use of antidepressant medications in vulnerable populations, health care providers may be reluctant to treat children, even after a positive identification of a mental health issue has taken place (Saarela & Engestrom, 2003). To improve health care providers' confidence in antidepressant treatment, they have been shown to gain knowledge through training and/or continuing education courses (Saarela & Engestrom, 2003).

Research conducted by Clark (1997) compared the socialization of nurse practitioners and physicians and points out that non-physician students have a tendency to have a deeper desire for nurturance and independence. While in medical school, physician students on the other hand, have been shown to form more skeptic and less humanitarian and sympathetic qualities (Clark, 1997).

Contextual characteristics

Literature has shown that there are significant differences in health care providers' management by their contextual characteristics. Rushton and colleagues (2000) conducted a study on the management of children's mental health illness and the role of primary care physicians in the management of children's mental health illness. Significant differences in the management of children's mental health illness were found based on the primary care physicians' characteristics, such as gender, practice type, and practice setting. Additional studies have found significant differences in health care providers based on their specialties, practice type, gender, and appointment status (i.e., full- vs. part-time) (Freund et al., 2003; Rushton et al., 2004)

Methods Used to Identify and Treat Mental Health Issues

Zuckerbrot and colleagues (2007) conducted a study examining identification, assessment, and initial management of mental health issues in a pediatric primary care unit. They indicated that there are methods of identification and treatment that are better than others, thus advocating for a ranking scheme. Six different approaches to identifying mental health issues were most commonly referenced, they included: 1) observations, 2) the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), 3) screening tools/checklists, 4) assessment of comorbidities, 5) discussions with children and their families, and 6) examination of previous documents indicating high risk. Similarly, the common approaches to mental health treatment were prescribed. They included: 1) using referrals to specialists, 2) self management, and 3) collaborate with other health care providers (National Institutes of Mental Health [NIMH], 2010). Several sources indicated that, in order to increase the chance of correctly identifying or treating mental health issues, a combination of methods is the most effective or considered the "golden standard," because it triangulates the best results from each method used. Furthermore, each child and his or her condition are different; therefore, health care providers should use various methods to identify and treat mental health issues in preschool aged children (National Institutes of Mental Health [NIMH], 2009; United States Department of Health & Human Services [HHS], Substance Abuse and Mental Health Services Administration [SAMHSA]: National Mental Health Information Center & Center for Mental Health Services, 1999; Zuckerbrot et al., 2007).

Research Focus

The theoretical framework that was used to guide this study was the socialization of physicians and non-physicians: domains of expertise. It offered a well-informed schema for explaining the workings of the interconnect of health care providers in the health care community. Its flexibility as a research paradigm is illustrated by Lambing and colleagues (2004) who used it to examine an inpatient geriatric hospital unit. They were able to expand the use of the domains of expertise in their study by adapting the framework to explore the care activity and clinical outcome relationships of non-physicians to those of intern/resident physicians. I similarly adapted the framework to explore how differently health care providers approach the identification and treatment of infants', toddlers', and preschoolers' mental health issues.

This study examined two types of primary health care providers, physicians and nurse practitioners. The first type of health care provider, physician, included physicians, such as pediatricians, general practice, family practices, and emergency room physicians. The second type, non-physicians, consisted of nurse practitioners and physician assistants. Mental health specialists were not used, because few children's families actively seek out mental health services on their own without a primary health care provider referral (Simonian et al., 1991). Children also see primary health care providers (e.g., family practitioners, nurse practitioners, and physician assistants) more often for checkups, examinations, and the treatment of illness (Simonian et al., 1991).

I added to the body of knowledge regarding preschool aged children's mental health issues by examining results of a survey of health care providers in a Midwestern metropolitan area. Specifically, I assessed whether there were differences between two

types of health care providers (e.g., physicians and non-physicians) in the methods used to identify and treat preschool children's mental health issues. Differences were explained by identifying the associated barriers that influence health care providers' methods of identification and treatment, while controlling for health care providers' contextual characteristics (i.e., type of practice, type of appointment, age, gender, and years of expertise experience). Contradictions in the literature regarding the approaches taken by different types of health care providers to successfully identify and treat patients' illnesses led me to use a two-tailed test in my hypothesis testing. This meant that I was not predicting the direction of the differences; rather I simply believed differences would exist.

Hypotheses

Similar to the purpose of the study, the following hypotheses guided the execution of the study's objectives:

1. There is a significant difference in the methods used in the *identification* of children's (age 0 to 5) mental health issues by type of health care provider.

2. There is a significant difference in the methods used in the *treatment* of children's (age 0 to 5) mental health issues by type of health care provider.

3. There is a difference in the barriers of the methods used in the *identification* and *treatment* of children's (age 0 to 5) mental health issues by type of health care provider.

    a) There is a difference in the barriers related to *training* by type of health care provider.

    b) There is a difference in the barriers related to *time constraints* by type of health care provider.

c) There is a difference in the barriers related to *external issues* by type of health care provider.

d) There is a difference in the barriers related to *reimbursement/financial issues* by type of health care provider.

4. Health care providers' contextual characteristics influence the methods used in the *identification* of children's (age 0 to 5) mental health issues.

5. Health care providers' contextual characteristics influence the methods used in the *treatment* of children's (age 0 to 5) mental health issues.

CHAPTER III. METHODS

The Data Set

The data I used for my analysis came from a 2007 *Community Access to Child Health (CATCH) Study* conducted by staff at the North Dakota Data Center (NDSDC) at North Dakota State University (NDSU) in Fargo, North Dakota. This research project was funded through a planning grant from the American Academy of Pediatrics. The purpose of the project was to assist pediatricians with planning initiatives aimed at increasing access by children to specific health care services. The major goal of this project was to investigate barriers to preventing preschool aged children from receiving mental health care services.

The NDSU Institutional Review Board (IRB) granted approval for the original project and for this study (see Appendix A for letter of approval). The CATCH project was given an exempt status from the NDSU IRB. Although I was not the principal investigator, I was a co-investigator.

The CATCH survey was divided into the following sections: patient base, identification and treatment of mental health issues, barriers to identifying and treating mental health issues, future opportunities, and respondent profile. The survey was comprised mostly of closed-ended responses; however, several questions contained an "other" response and allowed for open-ended responses. A screening question was used to identify health care providers who saw preschool aged children (ages 0 to 5 years) in their practice.

A list containing 232 practicing Cass County, North Dakota, and Clay County, Minnesota, health care providers (e.g., pediatricians, family practice physicians, physician

assistants, and nurse practitioners) was obtained from Clay County Public Health. After conducting a literature review, the NDSDC designed the survey with feedback from the CATCH Grant Advisory Committee. The survey was conducted as a mail-out questionnaire and was sent to the comprehensive list of Cass County, North Dakota, and Clay County, Minnesota, pediatricians, family practice physicians, physician assistants, and nurse practitioners. Data collection for the project started in July 2007 and was completed in September 2007. To improve the response rate, a reminder and second wave of surveys were mailed out to the health care providers who had not responded as of early September.

A total of 96 of the 232 surveys were returned to the NDSDC for a response rate of 41.0%. However, after eliminating 44 surveys from health care providers who indicated they did not see preschool aged children, the usable sample for health care providers who could possibly see preschool aged children was calculated to be 188. A total of 52 of the returned surveys were from health care providers who indicated that they see preschool aged children in their practice. Therefore, these 52 health care providers served as the data set for this study. The usable response rate for those health care providers who indicated that they see preschool aged children was 27.7%. The response rate was fairly low, due to the time demands placed on health care providers. Given the relatively low response rate, I recognized the limitations imposed by not being able to assess non-response bias. Nonetheless, the 52 responses provided useful insight for a pilot study. I performed a secondary analysis (i.e., conducting analysis on a previously collected data set) from these data.

Defining the Variables

<u>Dependent variables</u>

I focused on three specific dependent variables. The first centered on methods used in the identification of children's mental health issues. It was derived from question 6 in the survey, which asked respondents to select all methods that they utilize in the identification of mental health issues in preschool aged children. The seven response categories from the question, in what is generally accepted as the priority techniques for identifying mental health issues, is shown in Table 1. These techniques were cumulative, thus the best overall identification approach included all seven responses. In contrast, the least effective was a single approach (i.e., response categories 1 through 4) outside a formal assessment (i.e., response categories 5 and 6), such as evaluation tools and the DSM-IV. The last category was an open-ended "other," but it had too few responses, thus it was not used in the analysis. I created an index from these responses that measured the level of sensitivity used in identification. This was accomplished by assigning 1 point to each of the first four identification methods, to indicate that each is a simple probing method of identification. I did this to be conservative in my assessment. I assumed the information gained from the probing methods were limited, including the method of using previous documentation by other providers, thus I gave them a score of one. The fifth identification method was valued at 2 points, since it is a form of formalized assessment and viewed as much more sensitive than the previous four. Lastly, the sixth method was assigned 4 points, because it is the recognized standard for formalized assessment. Respondents were asked to select each method they used in the identification process, thus a cumulative score was calculated. This resulted in a mental health index that ranged from 0 to 11, where 0

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meant that no identification method was used and implies a very low level of sensitivity to recognize preschool aged children's mental health issues. In contrast, an 11 meant that all identification methods were used suggesting a very high level of sensitivity to recognize preschool aged children's mental health issues.

Table 1

Methods used in the identification of mental health issues index

Question: Please select the methods that you utilize in identifying mental health issues. Circle the letters of the options that apply to you.

a) Observation in the office by myself or nursing staff
b) Pervious documentation by other providers of mental health issues in patients' medical records
c) Information from or questions asked by parents/guardians (parents voiced concerns)
d) Probing/screening process done by myself to "tease" out mental health issues of patient or other family members
e) Assessment of co-existing conditions
f) Using DSM criteria
g) Other

Note. DSM = Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. In the original data set each "methods used in identification of mental health issues" was operationalized as no=0 and yes=1. For purposes of this analysis, it was recoded, combined, and operationalized as components a=1, b=1, c=1, d=1, e=2, f=4, and g=1.

My second dependent variable centered on the methods used in the treatment of mental health issues. It was derived from question 7, which asked respondents to select all methods that they use in treating mental health issues in preschool aged children. There were five possible response categories (see Table 2) and an open-ended "other" category. The open-ended "other" had too few responses, thus it was not used in the analysis. These categories were independent approaches; therefore, they were viewed separately.

Table 2

Methods used in the treatment of mental health issues

Question: Please select the methods that you utilize in treating mental health issues. Circle the letters of the options that apply to you.

a) Evaluate and manage the problem myself
b) Evaluate and begin management myself, then refer out for consultation
c) Evaluate myself then refer out for management
d) Refer out for evaluation and management
e) Refer out for evaluation and take over management
f) Other

Note: In the original data set each "methods used in the treatment of mental health issues" was operationalized as no=0 and yes=1.

My third dependent variable focused on barriers to identification and treatment of mental health issues. It was derived from questions 8 through 11 and consisted of four barrier subcategories relating to training, time constraints, external issues, and reimbursement/financial issues (see Table 3). In the survey, respondents were asked to select all the options that they experience when identifying and treating mental health issues in preschool aged children relating to the barriers of training, time constraints, external issues, and reimbursement/financial issues. Originally, each response category within each barrier subcategory was coded as yes or no.

I created an index that depicted the overall amount of barriers that respondents feel they need to overcome in order to successfully identify and treat mental health issues in preschool aged children. This index was calculated by summing the number of response categories selected by each respondent over the four subcategories. There were six possible barriers in training, three barriers in time constraints, six in external issues, and five in reimbursement/financial issues, totaling 20. Thus, this index ranged from 0 to 20, where 0 meant no barriers and 20 meant all listed barriers. In addition, separate analyses

Table 3

Question: What are the barriers relating to training, time constraints, external issues, and reimbursement/financial issues that you experience when identifying and treating mental health issues in children ages 0 to 5. Please circle the letters of the options that apply to you in each other four areas.

Barriers relating to training
 a) Lack of training in identifying mental health problems
 b) Lack of training in ability to diagnose mental health problems
 c) Lack of training in the treatment of mental health problems
 d) Lack of confidence in ability to treat mental health problems
 e) Lack of confidence in ability to treat mental health with counseling
 f) Lack of confidence in ability to treat mental health with medication

Barriers relating to time constraints
 a) Lack of time during appointment to accurately diagnose
 b) Lack of time in overall schedule to treat mental health problems
 c) Long waiting periods for mental health providers to see the referred child

Barriers relating to external issues
 a) Unaware of a place to send them if mental health issues are identified
 b) Lack of providers with expertise to refer to
 c) Language barriers
 d) Cultural barriers
 e) Non-compliance of family members/guardians
 f) Lack of interaction between family members/guardians and providers

Barriers relating to reimbursement/financial issues
 a) Inadequate reimbursement for treating child mental health problems
 b) Concern about liability coverage for treating child mental health problems
 c) Unfamiliarity with CPT codes that reimburse for treating child mental health problems
 d) Restrictions of managed care
 e) Other barriers (specify)

Note: In the original data set each "barriers to identifying and treating mental health issues" was operationalized as no=0 and yes=1. For purposes of this analysis, all subcategories were combined and operationalized as a=1, b=1, c=1, d=1, e=1, and f=1, and then combined to create the overall barriers dependent variable.

were conducted on the four barrier subcategories. Therefore, a separate index was created

for each barrier subcategory by summing the possible responses within each subcategory

and creating an index for each. The sub-index of training was calculated by summing the

six possible response categories, the sub-index of time constraints was calculated by

summing the three possible response categories, the sub-index of external issues was calculated by summing the six possible response categories, and the sub-index of reimbursement/financial issues was calculated by summing the five possible response categories.

Independent variables

The independent variables used in this analysis were drawn from the respondent profile section of the survey (see Appendix C for survey). Overall, six independent variables were used in the analysis. The primary independent variable was type of provider and was associated with the first through third hypotheses. The remaining independent variables were contextual measures and included type of practice, type of appointment, provider's age, provider's gender, and number of years practicing in the area of expertise. These were mainly associated with the last two hypotheses.

Type of provider was derived from question 13 and included four possible response categories: a = MD (medical doctor/ [physician]), b = physician assistant, c = nurse practitioner, and d = other. I collapsed the original four categories into two so that my independent variable, type of provider was operationalized as 1 = physician (MD) and 2 = non-physician (nurse practitioner/physician assistant).

The remaining five independent variables were considered contextual characteristics. In the initial survey, the second independent variable, question 14 - type of practice, instructed respondents to choose all response categories that applied to their type of practice. The response categories consisted of a = one to five physician setting, b = pediatric group practice, c = multi-specialty health system, d = independent practice, e = walk-in, f = satellite, and g = other. Originally, each response category was coded as yes or

no. The third independent variable, question 16 - type of appointment, included the response categories of a = full-time and b = part-time. Initially in the survey, the fourth independent variable, question 17 - provider's age, was made up of the response categories a = younger than 25, b = 25 to 34, c = 35 to 44, d = 45 to 54, e = 55 to 64, and f = 65 years or older. For purposes of analysis, I collapsed the original six categories into two categories. Thus the variable, provider's age, was operationalized as 1 = younger than 45 years old and 2 = 45 years old and older. The fifth independent variable, question 18 - provider's gender, had the response categories of a = male and b = female. The final independent variable, question 19 - number of years practicing in the area of expertise, had the response categories of a = less than 1 year, b = 1 to 2 years, c = 3 to 4 years, d = 5 to 10 years, and e = more than 10 years. For purposes of analysis, I collapsed the original five categories into two categories. Thus the variable, number of years practicing in the area of expertise, was operationalized as 1 = 10 years or less and 2 = more than 10 years.

The analysis was conducted in two phases due to limited sample size. The first phase focused specifically on the type of provider, without any attempt to control for the contextual characteristics of those health care providers. The second phase focused on contextual characteristics in general to assess if characteristics alone influenced selection of mental health screening or treatment approaches. A series of t-tests and chi-square tests were conducted. T-tests were conducted when the dependent variable was interval level data (i.e., continuous measure data), such as indices, and the independent variable was dichotomous (i.e., variables that have only two categories). Chi-square tests were conducted when both the independent and dependent variables were either nominal or

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ordinal level data (i.e., categorical data). Many of the independent variables that were used in the analysis were dichotomous variables, such as type of provider and gender.

CHAPTER IV. RESULTS

Descriptive Statistics

In the identification process of children's mental health issues, the largest

proportion of health care providers indicated that they use observation in the office by

themselves or their nursing staff (96.2%), followed closely by the use of previous mental

health issue documentation by other providers of in-patients' medical records (94.2%), and

the use of information from or questions asked by parents/guardians (92.3%) (see Table 4).

Table 4

Descriptive statistics for methods providers use in identifying mental health issues in children ages 0 to 5

Identification methods	Providers (N=52)	
	n	%*
Observation in the office by myself or nursing staff	50	96.2
Previous documentation by other providers of mental health issues in patients' medical records	49	94.2
Information from or questions asked by parents/guardians (parents voiced concerns)	48	92.3
Assessment of co-existing conditions	38	73.1
Probing/screening process done by myself to "tease" out mental health issues of patient or other family members	35	67.3
Using DSM (Diagnostic Screening Manual) criteria	20	38.5
Other	8	15.4
All of the above	2	
Consultations	1	
Pre-school/daycare observations	2	
Reports from social services and other agencies	1	
Screening tools (Vanderbilt, M-CHAT)	1	
Vanderbilt scales, teacher reports, school testing	1	

*Percentages do not equal 100.0 due to multiple responses.

Regarding the treatment process of mental health issues, the largest proportion of

health care providers indicated that they conduct the evaluation of the child, and then refer

the child out for management (71.2%) (see Table 5). This approach was followed closely

by refer the child out for evaluation and management (69.2%) and next, by evaluating the

child and directly proceeding to the management, then refer the child out for consultation

(55.8%). The least used approaches were to directly conduct the evaluation and

management of the child themselves (40.4%) and refer the child out for evaluation and then

directly take over management (38.5%).

Table 5

Descriptive statistics for methods providers use in treating mental health issues in children ages 0 to 5

	Providers (N=52)	
Treatment methods	n	%*
Evaluate myself and then refer out for management	37	71.2
Refer out for evaluation and management	36	69.2
Evaluate and begin management myself, then refer out for Consultation	29	55.8
Evaluate and manage the problem myself	21	40.4
Refer out for evaluation and then take over management	20	38.5
Other	1	1.9
I do all of the above, depending on the severity	*1*	

*Percentages do not equal 100.0 due to multiple responses.

Nearly 80% of health care providers cited time constraints - long waiting periods

for mental health providers to see the referred child as a barrier to identifying and treating

mental health issues in preschool aged children (78.8%) (see Table 6). The second most

frequently cited barrier was related to external issues - lack of providers with expertise to

refer the child to (67.3%). The next three most frequently cited barriers referred

specifically to time constraints - lack of time in overall schedule to treat mental health

Table 6

Descriptive statistics for barriers providers experience while identifying and treating mental health issues in children ages 0 to 5

Barriers	Providers (N=52)	
	n	%*
Training Barriers		
Lack of training in the treatment of mental health problems	30	57.7
Lack of confidence in ability to treat mental health problems with counseling	28	53.8
Lack of confidence in ability to treat mental health problems with medication	25	48.1
Lack of confidence in ability to treat mental health problems	22	42.3
Lack of training in ability to diagnose mental health Problems	21	40.4
Lack of training in identifying mental health problems	17	32.7
Time Constraint Barriers		
Long waiting periods for mental health providers to see the referred child	41	78.8
Lack of time in overall schedule to treat mental health Problems	31	59.6
Lack of time during appointment to accurately diagnose	24	46.2
External Issue Barriers		
Lack of providers with expertise to refer to	35	67.3
Non-compliance of family members/guardians	30	57.7
Cultural barriers	15	28.8
Language barriers	15	28.8
Lack of interaction between family members/guardians and Providers	12	23.1
Unaware of a place to send them if mental health issues are Identified	11	21.2
Reimbursement/Financial issue Barriers		
Unfamiliarity with CPT codes that reimburse for treating child mental health problems	17	32.7
Concern about liability coverage for treating child mental health problems	13	25.0
Inadequate reimbursement for treating child mental health Problems	13	25.0
Restrictions of managed care	5	9.6
Other barriers	2	3.8
Medications are expensive, often not covered by Insurance	*1*	
No insurance for medication	*1*	

*Percentages do not equal 100.0 due to multiple responses.

problems (59.6%), training - lack of training in the treatment of mental health problems

(57.7%), and external issues - non-compliance of family members/guardians (57.7%).

Three-fourths of health care providers were physicians (75.0%) and 56.0% were

male (see Table 7). Half of the providers belonged to a multi-specialty health system

practice (51.9%). The vast majority of providers were appointed to full-time status

(85.4%). Nearly two-thirds of health care providers had been practicing for more than 10

years (64.7%) and 58.9% belonged to the category of 45 years old and older.

Table 7

Descriptive statistics for health care providers' contextual characteristics

Contextual characteristics	Providers (N=52)	
	n	%
Type of provider		
Physician	36	75.0
Non-physician	12	25.0
Type of practice*		
1 to 5 physician setting	10	19.2
Pediatric group practice	3	5.8
Multi-specialty health system	27	51.9
Independent practice	6	11.5
Walk-in	8	15.4
Satellite	4	7.7
Appointment status		
Full-time	41	85.4
Part-time	7	14.6
Age		
Younger than 45 years old	21	41.2
45 years old and older	30	58.8
Gender		
Male	28	56.0
Female	22	44.0
Years practicing		
10 years or less	18	35.3
More than 10 years	33	64.7

*Percentages do not equal 100.0 due to multiple responses.

After reviewing the descriptive statistics, it appeared as if health care providers may use a type of triangulation process to identify children's mental health issues, because the vast majority of health care providers in this study indicated that they use more than one method to identify children's mental health issues. Using several methods to approach the identification of a mental health issue suggests that health care providers may be more likely to arrive at a positive identification, rather than letting the mental health issue go unrecognized. Additionally, it is worthy to note that during the treatment process, the majority of health care providers in this study indicated that they were inclined to refer a child with mental health issues out for more specialized care, either after they evaluated the child or for both the evaluation and management. This tendency to refer children with mental health concerns to a specialist, most likely contributes to the long waiting periods for mental health providers noted by health care providers as an important barrier. This approach also would greatly increase the demand on specialists, thus exacerbating the problem since the number of health care providers with this expertise is very limited and noted as an important barrier.

Inferential Statistics

Hypothesis one

First I looked at whether there was a difference in the identification of preschool aged children's mental health issues by the type of provider. Since the type of identification method was based on a cumulative index, I used a t-test to compare the mean identification index scores between physicians and non-physicians. The difference in the provider identification index was not statistically significant, (t (46) = 1.70, $p > .05$). This

indicated that health care providers in this investigation use similar methods of identification for children's mental health issues.

Hypothesis two

Second, I continued to explore the effects of type of provider on the treatment methods of preschool aged children's mental health issues. Chi-square tests were calculated comparing providers' (i.e., physicians and non-physicians) type of treatment methods. Two of the variables were found to be statistically significant. Half of the physicians (50.0%) cited that they directly conduct the evaluation and management of the child while none of the non-physicians made that claim (0.0%) (χ^2 (1) = 9.60, $p < .05$). Nearly two-thirds of the physicians (63.9%) compared to 16.7% of non-physicians stated that they evaluated the child and then began his/her management themselves prior to referring the child out for consultation (χ^2 (1) = 8.04, $p < .05$). These results indicated that physicians in this study are more likely than non-physicians to initiate some form of management of preschool aged children after their evaluation. This also suggested that physicians in this study rely less often on outside specialty providers than their non-physician counterparts. The variables that were not statistically significant at $p < .05$ included: a) evaluate the child themselves, and then refer the child out for management; b) refer the child out for evaluation and management; and c) refer the child out for evaluation, and then take over the child's management (see Table 8).

Hypothesis three

Third, I investigated whether there was a difference in the overall barrier index and the barrier sub-indices by the type of provider (i.e., physicians and non-physicians). I used t-tests to compare the mean overall barrier index and the barrier sub-indices of health care

Table 8

Significance test of treatment methods by type of provider

Treatment methods – dependent variables	χ^2	df	Sig
Evaluate & manage the problem themselves	9.60*	1	.00
Evaluate & begin management themselves, then refer out for consultation	8.04*	1	.01
Evaluate themselves, then refer out for management	1.21	1	.27
Refer out for evaluation & management	2.00	1	.16
Refer out for evaluation, then take over management	2.46	1	.12

Note. Sig = significance and χ^2 = chi-square.
* $p < .05$, two-tailed test.

providers. The differences in the health care provider barriers were not found to be statistically significant at $p < .05$ for the overall barrier index and the barrier sub-indices (i.e., training, time constraints, external issues, and reimbursement and financial scores) for the health care providers in this study (see Table 9). This may have meant that the barriers to identifying and treating preschool aged children's mental health issues do not differ markedly by type of health care provider.

Table 9

Significance test of barriers by type of provider

Barriers - dependent variable	t	df	Sig
Training index	-0.08	46	.94
Time constraint index	-0.24	46	.82
External issues index	-0.58	46	.57
Reimbursement & financial index	1.00	46	.32
Overall barrier index	-0.08	46	.94

Note. Sig = significance and t = t-test.

Hypothesis four

Next, I analyzed the contextual characteristics to understand the influence of the

methods used in the identification of preschool age children's mental health issues. T-tests

were used to determine whether there was a difference in the mean score of the

identification index by type of practice (i.e., 1 to 5 physician setting, pediatric group

practice, multi-specialty health system, independent practice, walk-in, and satellite). The

identification index was found to be statistically significant for pediatric group practice (t

$(50) = -2.25, p < .05$) (see Table 10). On average, health care providers who belonged to a

pediatric group practice had a more effective identification approach than those who did

not belong to a pediatric group practice (mean = 10.33 and mean = 6.39, respectively). The

differences in all other types of practices' (i.e., 1 to 5 physician setting, multi-specialty

health system, independent practice, walk-in, and satellite) identification index scores were

not statistically significant at $p < .05$.

Table 10

Significance test of the identification methods index by type of practice

Type of practice - independent variable	t	df	Sig
1 to 5 physician setting	0.47	50	.64
Pediatric group practice	-2.25 *	50	.03
Multi-specialty health system	1.05	50	.30
Independent practice	-1.93	50	.06
Walk-in	0.99	50	.33
Satellite	0.75	50	.46

Note. Sig = significance and t = t-test.
* $p < .05$, two-tailed test.

I continued my investigation into the effects of contextual variables by examining

their impact on the methods used to identify mental health issues. T-tests were used to

examine the mean difference in methods of identification of type of appointment (i.e., full and part-time), age (i.e., younger and older), gender (i.e., male and female), and years of experience (i.e., 10 years or less and more than 10 years). I found no statistically significant differences for any of these characteristics at $p < .05$ (see Table 11). This indicated that personal characteristics of the health care providers in this study did not seem to influence the methods used to identify mental health issues, rather it was their type of practice.

Table 11

Significance test of the identification methods index by contextual characteristics

Contextual variables - independent variables	t	df	Sig
Type of appointment	-0.95	46	.35
Age	-0.92	49	.36
Gender	1.75	48	.09
Years of practice	-1.98	49	.05

Note. Sig = significance and *t* = t-test.

Hypothesis five

Next, I examined the contextual characteristics to see if they influenced the methods used in the treatment of preschool aged children's mental health issues. First I looked at the effect that type of practice (i.e., one to five physician setting, pediatric group practice, multi-specialty health system, independent practice, walk-in, and satellite) had on each of the five treatment methods. Chi-square tests were conducted comparing type of practice with treatment method. Of all the treatment methods, five variables were found to be statistically significant by several types of practice variables (i.e., pediatric group and walk-in practices) (see Table 12).

Table 12

Significance test of treatment methods by type of practice

Variables	χ^2	df	Sig
Evaluate & manage the problem themselves			
1 to 5 physician setting	0.48	1	.49
Pediatric group practice	4.70*	1	.03
Multi-specialty health system	0.00	1	.96
Independent practice	1.95	1	.16
Walk-in	3.05	1	.08
Satellite	0.43	1	.51
Evaluate & begin management themselves, then refer out for consultation			
1 to 5 physician setting	0.17	1	.68
Pediatric group practice	2.53	1	.11
Multi-specialty health system	0.28	1	.60
Independent practice	0.33	1	.57
Walk-in	7.18*	1	.01
Satellite	1.66	1	.20
Evaluate themselves, then refer out for management			
1 to 5 physician setting	0.01	1	.93
Pediatric group practice	0.03	1	.86
Multi-specialty health system	0.23	1	.63
Independent practice	0.49	1	.48
Walk-in	5.22*	1	.02
Satellite	0.03	1	.86
Refer out for evaluation & management			
1 to 5 physician setting	0.67	1	.41
Pediatric group practice	0.01	1	.92
Multi-specialty health system	0.17	1	.68
Independent practice	3.01	1	.08
Walk-in	0.20	1	.65
Satellite	1.93	1	.17
Refer out for evaluation, then take over management			
1 to 5 physician setting	0.01	1	.91
Pediatric group practice	5.09*	1	.02
Multi-specialty health system	0.12	1	.73
Independent practice	0.38	1	.54
Walk-in	5.91*	1	.02
Satellite	0.24	1	.62

Note. Sig = significance and χ^2 = chi-square.

* $p < .05$, two-tailed test.

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The variable treatment method - evaluate and manage the child directly was statistically significant by pediatric group practice (χ^2 (1) = 4.70, $p < .05$). All of the health care providers who belonged to a pediatric group practice indicated that they directly conduct the evaluation and management of the child (100.0%) compared to 36.7% of health care providers who did not belong to a pediatric group practice. The treatment – evaluate and manage the child directly was not statistically significant at $p < .05$ by the remaining type of practice variables.

The variable treatment method – evaluate and begin the child's management, and then refer the child out for consultation was statistically significant by walk-in practices (χ^2 (1) = 7.18, $p < .05$). A much smaller proportion of health care providers who belonged to walk-in practices compared to health care providers who did not belong to walk-in practices indicated that they conduct the evaluation and began the child's management, before they referred the child out for consultation (12.5% and 63.6%, respectively). The treatment – directly evaluate and begins management, and then refers the child out for consultation was not statistically significant at $p < .05$ by the remaining type of practice variables.

The variable treatment method – directly evaluate the child, and then refer the child out for management was statistically significant by walk-in practice (χ^2 (1) = 5.22, $p < .05$). A much smaller proportion of health care providers who belonged to walk-in practices compared to health care providers who did not belong to walk-in practices indicated that they directly conduct the child's evaluation and then refer the child out for management (37.5% and 77.3%, respectively). The treatment – evaluate the child themselves, and then

refers out for management was not statistically significant at $p < .05$ by the remaining type of practice variables.

The variable treatment method - refer out for evaluation, and then take over management was statistically significant by pediatric group practice (χ^2 (1) = 5.09, $p < .05$) and by walk-in practice (χ^2 (1) = 5.91, $p < .05$). All of the health care providers who belonged to pediatric group practices compared to only 34.7% of the health care providers who did not belong to pediatric group practices indicated that they refer the child out for evaluation, and then they take over management. In contrast, none of the health care providers who belonged to walk-in practices compared to 45.5% of the health care providers who did not belong to walk-in practices indicated that they refer the child out for evaluation, and then take over management. The treatment – refer out for evaluation, and then take over management was not statistically significant at $p < .05$ by the remaining type of practice variables. The treatment method - refer the child out for evaluation and management, was not statistically significant at $p < .05$ by any of the types of practice variables.

A review of the relationship between type of practice and treatment method revealed several intriguing findings. First, health care providers who practiced in pediatric group settings were much more likely to take full responsibility of evaluating and managing mental health care issues of preschool aged children than their counterparts in other settings. Interestingly however, they also were more likely than their counterparts to manage preschool age children's mental health issues after referring the child out for the initial evaluation. This bimodal distribution of practice suggested that health care providers in this study who were in pediatric group settings were much more involved in

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the management of mental health issues of preschool age children than their counterparts, regardless of how the child's illness was initially identified. Second, health care providers in walk-in settings were least likely to manage mental health care issues of preschool age children. This finding was consistent with the notion that walk-in clinics offer temporary health care assistance, thus it is suggested that management of something as critical as a mental health issue is unlikely in such facilities.

I next investigated the effects of appointment status on the methods used in the treatment of children's mental health issues. Chi-square tests were conducted comparing treatment methods by appointment status (i.e., full- and part-time). All treatment methods variables were not statistically significant at $p < .05$ by appointment status (see Table 13). Thus, my results indicated that the treatment methods used by health care providers for mental health issues among preschool aged children does not differ based on the full or part-time status of the provider. This contradicted the notion that part-time health care providers may not be as fully engaged in health care practice as their full-time counterparts.

Table 13

Significance test of treatment methods by appointment status

Treatment methods - dependent variables	χ^2	df	Sig
Evaluate & manage the problem themselves	1.35	1	.25
Evaluate & begin management themselves, then refer out for consultation	1.23	1	.27
Evaluate themselves, then refer out for management	3.37	1	.07
Refer out for evaluation & management	1.34	1	.25
Refer out for evaluation, then take over management	0.20	1	.66

Note. Sig = significance and χ^2 = chi-square.

I turned my attention next to the effects of age of provider on the methods used in the treatment of children's mental health issues. Chi-square tests were conducted comparing treatment methods by the age of the provider (i.e., younger and older). All treatment method variables were not statistically significant at $p < .05$ by age of the provider (see Table 14). Therefore, there was no difference between younger than 45 years old and 45 years old and older health care providers' treatment methods.

Table 14

Significance test of treatment methods by age of provider

Treatment methods - dependent variables	χ^2	df	Sig.
Evaluate & manage the problem themselves	1.06	1	.30
Evaluate & begin management themselves, then refer out for consultation	0.09	1	.76
Evaluate themselves, then refer out for management	0.01	1	.91
Refer out for evaluation & management	2.52	1	.11
Refer out for evaluation, then take over management	0.48	1	.49

Note. Sig = significance and χ^2 = chi-square.

I investigated the effects of health care providers' gender on the methods used in the treatment of children's mental health issues. Chi-square tests were conducted comparing treatment methods by gender of the provider (i.e., male and female). Similarly, all treatment method variables were not statistically significant at $p < .05$ by gender of the provider (see Table 15). Therefore, there was no difference between male and female health care providers' treatment methods.

I investigated the effects of number of years practicing on the methods used in the treatment of children's mental health issues. Chi-square tests were conducted comparing treatment methods by number of years of practicing (i.e., 10 years or less and more than 10

Table 15

Significance test of treatment methods by gender

Treatment methods - dependent variables	χ^2	df	Sig.
Evaluate & manage the problem themselves	1.10	1	.30
Evaluate & begin management themselves, then refer out for consultation	0.57	1	.45
Evaluate themselves, then refer out for management	0.06	1	.80
Refer out for evaluation & management	1.55	1	.21
Refer out for evaluation, then take over management	0.30	1	.59

Note: Sig = significance and χ^2 = chi-square.

years). Once again, all treatment method variables were not statistically significant at $p <$ .05 by number of years of practicing (see Table 16). Therefore, there was no difference between health care providers with 10 years or less and providers more than 10 years of experience's treatment methods.

Table 16

Significance test of treatment methods by number of years practicing

Treatment methods - dependent variables	χ^2	df	Sig.
Evaluate & manage the problem themselves	0.40	1	.53
Evaluate & begin management themselves, then refer out for consultation	0.27	1	.60
Evaluate themselves, then refer out for management	1.20	1	.27
Refer out for evaluation & management	0.05	1	.82
Refer out for evaluation, then take over management	0.18	1	.67

Note: Sig = significance and χ^2 = chi-square.

An overview of my findings offer limited support for my initial position that differences would exist between the physicians and non-physicians regarding identification and treatment methods. This might have been a consequence of a limited sample size. For example, the number of health care providers, who were in a pediatric group practice, that I

was able to analyze was less than five, which can be problematic. Therefore, caution should be observed when interpreting my results. Nonetheless, given these limitations, the differences that emerged between physician and non-physician were isolated to the types of treatment methods and not the identification of mental health issues.

From these findings, I concluded that physicians and non-physicians used similar methods to identify mental health issues and for that reason, had similar barriers to the identification and treatment of preschool aged children's mental health issues. Physicians were more likely to directly conduct the evaluation and manage the child's mental health issues. In addition, they were more likely to evaluate and begin the management themselves, and then refer the child out for consultation relative to non-physicians. Thus it appeared that physicians were more likely to tend to preschool aged children's mental health issues on their own, and/or with minimal help from outside specialty providers (i.e., referrals) than non-physicians.

Although I was surprised with several results, there were others that I was not as surprised to see differences in, such as in the case of pediatric group and walk-in practices. Health care providers belonging to a pediatric group practice may have a more effective identification approach than those who do not belong. Health care providers who belonged to pediatric group practices in this study were more fully engaged in the evaluation and management of children with mental health issues than their counterparts; they were also more likely to refer the child out for evaluation, and then take over management of the child than those who do not belong to pediatric group practices. The actions of health care providers who belonged to pediatric group practices were logical, because it is suggested

that those who specialize in pediatric medicine are more specialized in and sensitive to children's health and wellbeing than other more generalized health care providers.

I also found differences by walk-in practice. Health care providers belonging to a walk-in practice in this study were less likely than those who do not belong to a walk-in practice to conduct the evaluation and begin the child's management, and then refer the child out for consultation. Health care providers in this study belonging to walk-in practices were less likely than those who do not belong to walk-in practices to conduct the evaluation and then refer the child out for management, in addition to being less likely to refer the child out for evaluation, and then take over management than those who do not belong to a walk-in practice. This may be due in part to the makeup of the walk-in practitioners' patient-base. It appears that typically walk-in practitioners are not an individual's primary health care provider. Additionally, the premise behind walk-in practices is that walk-in practitioners' treat patients who need to be seen by a practitioner without an appointment due to the onset of illness.

CHAPTER V. DISCUSSION

Summary of Findings

My study explored the mental health concerns in children ages 0 to 5, in the Fargo-Moorhead metropolitan area, which consisted of two counties: Cass County, North Dakota, and Clay County, Minnesota. I used the 2007 Community Access to Child Health (CATCH) survey to study health care providers and examine whether there were differences in the methods used in the identification and treatment of mental health issues in preschool aged children based on type of health care provider (i.e., physician and non-physician). Next, I tried to identify whether barriers to indentifying and treating preschool aged children's mental health issues differed by type of health care provider. Furthermore, I explored whether the health care providers' contextual characteristics (i.e., type of practice, appointment status, age, gender, and number of years practicing) influenced the providers' methods of identification and treatment of mental health issues in preschool aged children. I used the socialization of physicians and non-physicians: domains of expertise theory to guide my research.

Overall, I found limited support in this study for the socialization of physicians and non-physicians: domains of expertise theory, which suggested that differences should exist regarding the identification and treatment of children's mental health issues based on the type of health care provider (i.e., physician and non-physician). However, there were several notable exceptions. First, differences were seen in the treatment methods by type of provider. In this study, health care providers who were physicians differed from those who were non-physicians based on whether they evaluate and manage the child themselves and whether they evaluate and begin the child's management, and then refer the child out

for consultation. These results were important, because it appeared as if physicians in this study were more likely than non-physicians to directly attend to the evaluation and management of children's mental health issues and/or with minimal referrals/assistance from outside specialty providers. Physicians' education, training, and/or continuing education units may have provided the needed assurance and tools to carry out the appropriate evaluation and management after a positive identification of a mental health issue.

When I examined differences in identification methods, I found that those health care providers in this study who belonged to a pediatric group practice where more likely to use much more sensitive measures to identify mental health issue than their counterparts. Similarly, providers who belonged to a pediatric group practice were more likely to evaluate and manage the child themselves than their counterparts in this study. They also were more likely to take over the management of the child after they referred the child out for evaluation. These findings indicate that those who specialize in pediatric medicine were more likely to be more proficient in and responsive to children's health and wellbeing than other areas of more generalized medicine. It is important to note that these differences may exist, because health care providers in pediatric group practices may be more apt to recognize the signs or correctly determine whether a child has a mental health issue.

My investigation of treatment methods found that, health care providers who belong to walk-in practices differ from those who do not belong to walk-in practices. Health care providers in this study who belonged to a walk-in practice were less likely than those who did not belong to a walk-in practice to evaluate and begin the child's management themselves, and then refer the child out for consultation; to evaluate the child themselves,

and then refer them out for management; and also to refer the child out for evaluation, and then take over the child's management. I believe that this difference may be due in part to the makeup of the walk-in practitioners' patient-base. Walk-in practitioners typically are not an individual's primary health care provider. Walk-in practitioners' tend to treat individuals who have uncomplicated minor illnesses, without an appointment. It was important to note these differences, because walk-in practice providers in this study appeared to not provide treatment and/or management of children's mental health issues, but rather refer out the treatment for closer management from another practitioner.

Future Research

There were several important limitations to the study which should be addressed in future research. First and foremost, although a complete listing of health care providers in the Fargo-Moorhead metropolitan area was used, a fairly small proportion of health care providers actually responded. The resulting small sample size restricted my ability to conduct a detailed exploratory analysis. The small number of respondents restricted the usefulness of significance tests and greatly limited my opportunity to uncover factors that help distinguish differences in practices and approaches of health care providers. The limited sample size may be one of the reasons why there were few tests that were found to be statistically significant. A larger number of respondents would possibly demonstrate more variance in the respondents answers.

Furthermore, the initial sampling frame was relatively small, which further contributed to the small number of respondents in this study. Lower response rates among health care providers is typical, thus a large initial sampling frame should be encouraged in future studies. Although two waves of the survey were used in this study to improve the

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response rate of health care providers, the survey still had a somewhat low response rate. To encourage participation, an alternative method of surveying may be a better fit for this type of respondent. In the electronic age, using an internet survey, such as Survey Monkey, may increase health care provider participation. A notice of the study and links to the survey can be sent through email to remind individuals, especially this busy population, at a fraction of the cost of mail postage.

In addition, I used a secondary data set, which in itself creates several drawbacks and restrictions. Changes in the approach regarding how they identify barriers and treatment methods may improve one's ability to discern difference by type of health care provider. For instance, it might be useful to separate the barriers by type of identification and treatment. Separating the barriers by identification and treatment methods would allow the researcher to see whether the barrier is specific to the identification and/or treatment process. When more information is known about the context of the barriers', then more can be gained and therefore a better approach to the issue may be considered. Additionally, in order to increase variance in response, it would be useful to employ scales when asking about the types of methods the health care provider uses in identifying and treating mental health issues. For example, under the "methods you use in treating mental health issues" section of the survey, rather than a check all that applies, one could ask the health care providers to select their response on a 1 to 5 scale, where 1 = do not use and 5 = use with all children, how often they employ the following treatment methods when treating children's mental health issues. This type of approach increases variances relative to the current dichotomous response category of yes or no.

Policy Implications

The results from this study indicate a larger pilot program may be necessary to more fully understand differences in the approach to identifying and treating mental health issues among our youth by health care providers. Although this study offered preliminary insight, it should be viewed as only one piece of a larger strategic initiative that promotes the original goal of the CATCH grant. If successful, the CATCH initiative has the possibility of placing a medical home and other essential services in every community to achieve optimal health and wellbeing for all children (North Dakota State Data Center, 2007). This goal may be accomplished by creating and continuing funding for programs, such as the Children's Health Insurance Program (CHIP), which was designed to cover uninsured children in families with earnings that are fairly small however still too high to be eligible for Medicaid (United States Department of Health and Human Services, Centers for Medicare & Medicaid Services, 2010). Additionally, providing comprehensive and efficient primary care, by planning appropriate length visits and asking for the specific needs of the patient and family, has the ability to possibly aid the cause.

Subsequently, it is suggested that one of the next steps would be to take the information gained from studies such as this and advance in the direction of a restructuring of the children's health care system. Moving forward, an increase in early identification and quality treatment must be seen as fundamental, especially by primary health care providers. It is extremely important to note that the penalty of not identifying and/or treating children's mental health issues are serious, costly, and has the ability to affect children's health and quality of life by negatively influencing their everyday lives with family, peers, and community (HHS, SAMHSA & Center for Mental Health Services,

1999a; Ringeisen et al., 2002; United States Department of HHS, 1999). Mental health issues that go unrecognized and/or untreated have the capacity to lead to preschool aged children having issues in public preschool, daycare, etc., which can possibly be followed by school failure, drug abuse, violence, and suicide later in life (FPG CDI: UNC-Chapel Hill, 2008; United States Department of HHS, SAMHSA & Center for Mental Health Services, 1999a).

Moreover, children's access to the essential services has been suggested as another crucial element in the fight to improve the children's mental health system (Minnesota Department of Human Services, 2010). Without the needed services and encouragement that promote health and positive wellbeing, it has been suggested that children with mental health issues are not as likely as those without the issues to grow up healthy with the ability to make the most of their potential. While keeping on track and combating children's mental health issues, I believe that it would be prudent for policy makers to conform to what the World Health Organization believes, which is that "children are our future. Through well-conceived policy and planning, governments can promote the mental health of children, for the benefit of the child, the family, the community, and society" (2005, p. vii).

I think that the need to address mental health issues among the infant, toddler, and preschool aged population remains an important issue, because it has been suggested that children are more likely to receive general health care from a primary health care provider (i.e., physician, nurse practitioner, or physician assistant) than a specialist. Therefore, I believe that the task of identifying and treating children's mental health issues lies essentially on primary health care providers and requires a special set of demands on health

care providers (Saarela & Engestrom, 2003; Simonian et al., 1991). As mental health issues are becoming more prevalent in all age groups, we may need to revisit the curriculum priorities of our health care providers. To approach this, I propose that greater emphasis be placed on providing primary health care providers with additional, improved education courses, trainings, and guidance for the identification and treatment of children's mental health services.

Closing Thoughts

Infants, toddlers, and preschool aged children, although small and at a different stage in their development than adolescents and adults, still are able to have mental health issues. As a relatively new development, children's mental health can be seen as extremely important. It has been noted that children's mental health issues can hinder children's quality of life and wellbeing by negatively influencing everyday activities, behaviors, and relationships with friends, family, and community (Ringeisen et al., 2002; United States Department of HHS, 1999). The consequence of children's mental health issues if left untreated can accumulate and lead to young children struggling in school readiness programs, followed later in life by the possibility of much greater consequences. Children's mental health is a concern that is very real and requires a great deal more of research, development, public awareness, and policy realization. I believe that this can be achieved with the help of strategic initiatives, such as the CATCH grant, and the creation and distribution of quality materials.

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APPENDIX A. INSTITUTIONAL REVIEW BOARD LETTER

NDSU   NORTH DAKOTA STATE UNIVERSITY

701.231.8908
Fax 701.231.8098

Institutional Review Board

Office of the Vice President for Research, Creative Activities & Technology Transfer
1735 NDSU Research Park Drive
P.O. Box 5756
Fargo, ND 58105-5756

June 14, 2007   NDSU Federalwide Assurance #FWA00002439

Dr. Richard Rathge
Dept. of Agribusiness & Applied Economics
IACC 424B

Re: Application to Conduct Research involving Human Participants - Request for Certification of
           Exempt Status for:

"CATCH Project - Child Mental Health Screening", Protocol # AG07262

Co-investigator(s) and key personnel: **Kendra Erickson, Kay Schwarzwalter, Ramona Danielson**

Study site(s): **Cass and Clay counties**   Funding: **American Acadamy of Pediatrics**

It has been determined that this project qualifies for exempt status (category # <u>2b</u>) in accordance with
federal regulations governing human subjects research (Code of Federal Regulations, Title 45, Part 46,
Protection of Human Subjects). This determination is based on the protocol form dated <u>June 8, 2007</u>, and
the consent/information sheet dated <u>June 14, 2007</u>.

Please also note the following:

- This determination of exemption expires 3 years from this date. If you wish to continue the
  research after June 13, 2010, submit a new protocol several weeks prior to this date.
- The project must be conducted as described in the approved protocol. If you wish to make
  changes, pre-approval is to be obtained from the IRB, unless the changes are necessary to
  eliminate an apparent immediate hazard to subjects. A *Protocol Amendment Request Form* is
  available on the IRB website; the changes may be implemented upon receipt of notification of
  approval.
- Prompt, written notification must be made to the IRB of any adverse events, complaints, or
  unanticipated problems involving risks to subjects or others related to this project.
- Any significant new findings that may affect the risks and benefits to participation will be reported
  in writing to the participants and the IRB.
- Research records may be subject to a random or directed audit at any time to verify compliance
  with IRB policies.

Thank you for complying with NDSU IRB procedures; best wishes for success with your project.

Sincerely,

Teryl Grosz, MS, CIP
IRB Director

APPENDIX B. COVER LETTERS

July 27, 2007

Dear

Dr. Linda Getz-Kleiman of Dakota Clinic has been awarded a 2007 Community Access to Child Health (CATCH) planning grant through the American Academy of Pediatrics. This planning grant allows for pediatricians to plan innovative, community-based initiatives that increase children's access to specific health services not otherwise available. With this grant, we are conducting a research study that will survey pediatricians, family practice physicians, physician assistants and nurse practitioners in Cass and Clay counties about current practices, barriers and opportunities to identify mental health concerns in children ages birth to 5 years.

Partners in this research study include Dr. Richard Rathge and staff of the North Dakota State Data Center who are conducting this survey and Clay County Public Health who will provide fiscal management and coordination by Gina Nolte.

You are invited to participate in this study. The enclosed survey is voluntary and should take no more than 10 minutes to complete. You may leave blank any questions you do not want to answer. The information you provide will be combined with that of other participants and your identity will be kept confidential.

You may return your survey via the envelope provided or you may fax your survey to the North Dakota State Data Center at 701-231-9730. We would very much appreciate having surveys returned by August 17, 2007. A report of the survey findings will be shared early this fall.
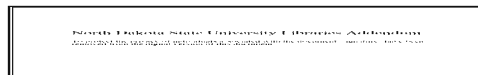
If you have questions about the study, you may call Dr. Richard Rathge at (701) 231-8621. If you have questions about the rights of human research participants or to report a problem, you may call the North Dakota State University Institutional Review Board at (701) 231-8908, or email ndsu.irb@ndsu.edu.

Thank you very much for helping us with this important study.

Sincerely,

Linda Getz-Kleiman, MD
Dakota Clinic – West Acres

Gina Nolte
Clay County Public Health

September 4, 2007

Dear

Dr. Linda Getz-Kleiman of Dakota Clinic has been awarded a 2007 Community Access to Child Health (CATCH) planning grant through the American Academy of Pediatrics.

With this grant, we are conducting a research study that will survey pediatricians, family practice physicians, physician assistants and nurse practitioners in Cass and Clay counties about current practices, barriers and opportunities to identify mental health concerns in children ages birth to 5 years.

A few weeks ago we mailed you a survey. If you have not already done so, please take a few moments to fill it out and return it in the enclosed postage-paid envelope. Your feedback is important – results from this research study will provide insight into identifying and treating mental health issues in children. If you do not see children in your practice, simply check the box indicating this and return the survey.

Partners in this research study include Dr. Richard Rathge and staff of the North Dakota State Data Center at North Dakota State University who are conducting this survey and Gina Nolte of Clay County Public Health who will provide fiscal management and coordination.

You are invited to participate in this study. The enclosed survey is voluntary and should take no more than 10 minutes to complete. You may leave blank any questions you do not want to answer. The information you provide will be combined with that of other participants and your identity will be kept confidential.

You may return your survey via the envelope provided or you may fax your survey to the North Dakota State Data Center at 701-231-9730. It is important that we have all surveys returned by September 14, 2007. A report of the survey findings will be shared early this fall.

If you have questions about the study, you may call Dr. Richard Rathge at (701) 231-8621. If you have questions about the rights of human research participants or to report a problem, you may call the North Dakota State University Institutional Review Board at (701) 231-8908, or email ndsu.irb@ndsu.edu.

Thank you very much for helping us with this important study.

Sincerely,

Linda Getz-Kleiman, MD
Dakota Clinic – West Acres

Gina Nolte
Clay County Public Health

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APPENDIX C. INFORMED CONSENT AND SURVEY INSTRUMENT

Identifying mental health issues in infants and children ages 0 to 5:
Survey of providers in Clay and Cass counties

This research study is sponsored by Clay County Public Health Department and is being conducted by the North Dakota State Data Center at North Dakota State University. Your participation is voluntary and you may quit the survey at any time. The survey will take approximately 10 minutes. The information you provide is strictly confidential and no identifying information is being requested. We would very much appreciate having surveys returned by **August 17, 2007**.

If you have questions about the study, please call Dr. Richard Rathge at the North Dakota State Data Center (701) 231-8621 or Dr. Linda Getz-Kleiman at Dakota Clinic (701) 364-6600. If you have questions about your rights as a human research subject, please call the North Dakota State University Institutional Review Board at (701) 231-8908.

The purpose of this research study is to survey providers (i.e., pediatricians, family practice physicians, physician assistants and nurse practitioners) about current practices, barriers and opportunities in identifying mental health concerns in children ages 0 to 5 years of age. If you do not see children ages 0 to 5, please check the box below and return the survey.

☐ **I do not see children ages 0 to 5. [If you do not see children ages 0 to 5, there is no need to complete the survey. Please <u>check the box</u> and <u>return the survey</u> in the envelope provided].**

PATIENT BASE

Please tell us about the children ages 0 to 5 you see in an AVERAGE MONTH.

1) What is your best estimate of the total number of children ages 0 to 5 you see in an average month? ____(number)
    a) What proportion are infants and toddlers (ages 0 to 2)?_____ percent
    b) What proportion are preschoolers (ages 3 to 5)?_____ percent

2) Of the total number of children ages 0 to 5 you see in an average month...
    a) What proportion have behavioral/social/emotional difficulties?_____ percent
    b) What proportion have behavioral disorders/hyperactivity/possible ADHD?_____ percent
    c) What proportion have mood disorders/possible mood disorders?_____ percent
    d) What proportion have speech and learning issues?_____ percent
    e) What proportion have developmental delays?_____ percent

3) Of the total number of children ages 0 to 5 you see in an average month...
    a) What proportion are refugees/New Americans?_____ percent
    b) What proportion are Native Americans and other minorities?_____ percent

4) Of the total number of children ages 0 to 5 you see in an average month, what proportion are uninsured?_____ percent

5) On a 1 to 5 scale, with 1 being "not at all" and 5 being "a great deal," to what degree do the requirements of the organization to which you are affiliated influence how you screen and/or treat mental health issues in children ages 0 to 5 based on their financial resources (e.g., health insurance)? Please <u>circle your answer</u>.

Not at all-1   2   3   4   5-a great deal

IDENTIFICATION AND TREATMENT OF MENTAL HEALTH ISSUES

Listed below are methods that may be used when IDENTIFYING and TREATING mental health issues in children ages 0 to 5. Please select the methods that you utilize in identifying mental health issues and in treating mental health issues. <u>Circle the letters</u> of the options that apply to you.

6) Methods you use in **identifying** mental health issues
   a) Observation in the office by myself or nursing staff
   b) Previous documentation by other providers of mental health issues in patients' medical records
   c) Information from or questions asked by parents/guardians (parents voiced concerns)
   d) Probing/screening process done by myself to "tease" out mental health issues of patient or other family members
   e) Assessment of co-existing conditions
   f) Using DSM criteria
   g) Other (specify)_____

7) Methods you use in **treating** mental health issues
   a) Evaluate and manage the problem myself
   b) Evaluate and begin management myself, then refer out for consultation
   c) Evaluate myself and then refer out for management
   d) Refer out for evaluation and management
   e) Refer out for evaluation and then take over management
   f) Other (specify)_____

What are the barriers relating to training, time constraints, external issues, and reimbursement/financial issues, that you experience when identifying and treating mental health issues in children ages 0 to 5? Please circle the letters of the options that apply to you in each of the four areas.

8) Barriers relating to **training**
   a) Lack of training in identifying mental health problems
   b) Lack of training in ability to diagnose mental health problems
   c) Lack of training in the treatment of mental health problems
   d) Lack of confidence in ability to treat mental health problems
   e) Lack of confidence in ability to treat mental health with counseling
   f) Lack of confidence in ability to treat mental health with medication

9) Barriers relating to **time constraints**
   a) Lack of time during appointment to accurately diagnose
   b) Lack of time in overall schedule to treat mental health problems
   c) Long waiting periods for mental health providers to see the referred child

10) Barriers relating to **external issues**
   a) Unaware of a place to send them if mental health issues are identified
   b) Lack of providers with expertise to refer to
   c) Language barriers
   d) Cultural barriers
   e) Non-compliance of family members/guardians
   f) Lack of interaction between family members/guardians and providers

11) Barriers relating to **reimbursement/financial issues**
   a) Inadequate reimbursement for treating child mental health problems
   b) Concern about liability coverage for treating child mental health problems
   c) Unfamiliarity with CPT codes that reimburse for treating child mental health problems
   d) Restrictions of managed care
   e) Other barriers
   (specify)_____

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FUTURE OPPORTUNITIES

12) Below is a list of possible future opportunities relating to mental health services for children 0 to 5. On a scale from 1 to 5, where 1 is "not a priority" and 5 is "a high priority," how much of a priority for you is each listing? Please circle your answers.

Future Opportunities	Level of Priority (1=not ... 5=high)
a) A standard screening tool with which to identify mental health issues	1 2 3 4 5 DNK
b) Educational/training opportunities that identify mental health issues	1 2 3 4 5 DNK
c) Educational/training opportunities for treating mental health issues	1 2 3 4 5 DNK
d) A list of providers who identify and treat mental health issues	1 2 3 4 5 DNK
e) Greater access to resources in treating mental health issues	1 2 3 4 5 DNK
f) Access to referrals/referral sources when treating mental health issues	1 2 3 4 5 DNK
g) Information regarding the referral process when identifying mental health issues	1 2 3 4 5 DNK
h) Communication/collaboration with other health providers who treat mental health issues	1 2 3 4 5 DNK
i) Other interests (specify)	1 2 3 4 5 DNK

Note: DNK=Do not know

RESPONDENT PROFILE

Please provide some background information. Please circle the letters of the options that apply to you.

13) What type of provider are you?
   a) MD
   b) Physician Assistant
   c) Nurse Practitioner
   d) Other (specify)_____

14) What is your type of practice (circle the letters of all that apply)?
   a) 1 to 5 physician setting
   b) Pediatric group practice
   c) Multi-specialty health system
   d) Independent practice
   e) Walk-in
   f) Satellite
   g) Other (specify)_____

15) What is your area of expertise?
   a) Pediatrics
   b) Family Practice
   c) Other (specify)_____

16) What is your appointment?
   a) Full-time
   b) Part-time

17) What is your age?
   a) Younger than 25
   b) 25 to 34
   c) 35 to 44
   d) 45 to 54
   e) 55 to 64
   f) 65 years or older

18) What is your gender?
   a) Male
   b) Female

19) How many years have you been practicing in your area of expertise?
   a) Less than 1 year
   b) 1 to 2 years
   c) 3 to 4 years
   d) 5 to 10 years
   e) More than 10 years

20) Have you had additional training, relating to infant/child mental health issues, within the last 5 years?
   a) Yes, I have attended informal seminars/training
   b) Yes, I have attended continuing education (CE) events (specify below-check all that apply)
        __1 to 3 CE events
        __More than 3 CE events
        __Fellowship in mental health
        __Other (specify)_____
   c) No, but I completed a fellowship in mental health more than 5 years ago
   d) No

21) If there are additional comments you would like to add, please include them in the space below.

THANK YOU FOR TAKING THE TIME TO HELP US WITH THIS IMPORTANT STUDY