

Factors Influencing Teacher-Driven Parent-Teacher
Communication About Students With Epilepsy

by

Catherine Gay

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved July 2013 by the
Graduate Supervisory Committee:

Juliet Hart, Chair
David Wodrich
Linda Caterino

ARIZONA STATE UNIVERSITY

August 2013

ABSTRACT

Epilepsy is the most common chronic neurological condition in children and can have a significant negative impact on education. The current study aimed to examine factors that may influence the likelihood that a teacher will contact the parents of a student with epilepsy for information regarding the disorder and its impact within the school environment. Specific variables of interest included teacher knowledge about epilepsy and confidence when teaching at student with epilepsy, parent perceived knowledge about epilepsy, and parent socio-economic status. Variables were assessed through the previously developed Teacher Epilepsy Knowledge and Confidence Scales (TEKCS) as well as case vignettes. Overall findings suggest that teachers provided with a letter from a parent of a student with epilepsy are highly likely to contact the parent for more information regardless of the above mentioned factors. Additional supplemental analyses replicated previous findings indicating that special education teachers and teachers currently teaching a student with epilepsy possess more knowledge and confidence than general education teachers and those teachers who are not currently instructing a student with epilepsy. In addition, this study also examined the specific types of information teachers sought from parents. Study limitations, implications for practice, and future research directions are discussed.

TABLE OF CONTENTS

	Page
LIST OF TABLES	iii
CHAPTER	
1 INTRODUCTION	1
2 LITERATURE REVIEW	8
3 METHOD	23
4 RESULTS	28
5 DISCUSSION	40
REFERENCES	52
APPENDIX	
A CASE VIGNETTES	55
B LIKELIHOOD OF CONTACTING PARENTS SURVEY ITEM	57
C ARIZONA STATE UNIVERISTY IRB APPROVAL LETTER	59
D TEACHER CONSENT LETTER	61

LIST OF TABLES

Table	Page
1. Demographic characteristics of survey sample	63
2. Knowledge item content	64
3. Confidence item content	65
4. Frequency and percentage of current special education and general education teachers across school levels	66
5. Frequency and percentage of current special education and general education teachers across socio-economic levels	67
6. Frequency and percentage of current special education and general education teachers currently teaching a student with epilepsy and not teaching a student with epilepsy	68
7. Correlations between number of correct knowledge overall average confidence, and preference for information from parents	69
8. Key words used to code qualitative responses to the open-ended question regarding the type of information sought from parents	70

Chapter 1

INTRODUCTION

This study will examine the influence of several factors on whether or not teachers choose to seek information from parents regarding a student's diagnosis of epilepsy and its impact in the classroom. Specifically, teacher perception of parental epilepsy knowledge, parent socio-economic status, teacher epilepsy knowledge, and teacher confidence in teaching a student with epilepsy will be the focus of the current study. Chapter 1 provides an introduction to the topic of epilepsy as it relates to the school environment as well as a preview of the current study. Specifically, this chapter will cover the influence of chronic medical conditions in general, eligibility for special education services for children with chronic medical conditions, epilepsy prevalence, seizure classification, and factors of epilepsy such as seizures, cognitive deficits related to seizure locations, and medication side-effects which are likely to impact student performance in educational settings. This information is meant to provide background knowledge necessary to understand the subsequent literature review and rationale for the current study.

Chronic Medical Conditions and School

A chronic medical condition can be defined as an illness that lasts for more than one year and limits functioning and social roles when an individual is compared to his or her peers. Limitations can be physical, cognitive, emotional, or social. The limitations caused by the medical condition may cause dependence on special care including medication, diet, medical technology, assistive technology and personal assistance (Stein

et al., 1997 quoted in Nabors & Lehmkuhl, 2003). Due to medical and technological advances, an increasing number of children with chronic medical conditions are surviving these chronic illnesses and returning to school settings (Brown & DuPaul, 1999; Nabors & Lehmkuhl, 2004). However, chronic medical conditions can still have a significant negative impact on the lives of the affected children as they participate in school. In addition to the obvious physical and medical concerns caused by chronic illnesses, these children may also experience behavioral and social-emotional problems (Baker, et. al., 2008; Bishop, & Boag, 2006; Miller, Palermo, & Grewe, 2003) as well as academic underachievement (Black & Hynd, 1995; Reilly, & Ballantine, 2011). A number of factors related to chronic medical conditions can impact a child's learning. These may include physical consequences of an illness itself, side-effects of medications (Wodrich, & Cunningham, 2008), and social and emotional problems due to stigma resulting from the illness (Reilly, & Ballantine, 2011).

Because chronic medical conditions can negatively impact academic achievement, it may be appropriate to assess educational functioning and intervene to improve the academic experience for the affected child (Brown & DuPaul, 1999). Children with medical conditions may qualify for individualized and specialized services in schools including accommodations through Section 504 of the Americans with Disabilities Act (1973) and special education services through the Other Health Impairment (OHI) category of the Individuals with Disabilities Education Improvement Act (IDEA, 2004). The OHI special education category of IDEA states:

Other health impairment means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the education environment, that (i) is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome and (ii) adversely affects a child's educational performance.

If factors associated with a child's medical condition cause impairment in educational performance a child may qualify for special education services.

Neurological conditions are one group of medical conditions that can impact a child's academics significantly enough that they may qualify for special education services. Neurological conditions include disorders associated with a dysfunction of the central nervous system including the brain, spinal cord, and other nerves. These conditions include sleep disorders, headaches, Multiple Sclerosis, movement disorders, seizure disorders and many others. The most common chronic neurological condition in children is epilepsy. According to the Centers for Disease Control and Prevention (CDC) about 10% of Americans will experience a seizure in their lifetime with nearly 3% receiving an epilepsy diagnosis. The CDC further reports that children under the age of 2 are especially vulnerable to the condition (www.cdc.gov). Among children, the prevalence of seizures is around four to eight in every 1,000 children. The onset of epilepsy most commonly occurs either before the age of two or around the onset of

puberty (Black & Hynd, 1995) with 30% of cases occurring by the age of 5 and 75% occurring by the age of 20 (Barrett & Sachs). Because it often occurs in childhood, epilepsy is likely the most common neurological condition encountered by school professionals including teachers (Barrett & Sachs).

Epilepsy and School

Epilepsy is characterized by abnormal electrical activity in the brain and seizures. A seizure is an instance of abnormal cerebral neuron firing which causes a sudden change in cerebral function. Seizures can be classified as either partial or generalized. A partial seizure typically begins at a specific site and impacts only one side of the brain. Partial seizures may result in impaired consciousness (complex) or not (simple). Unlike partial seizures, generalized seizures affect both hemispheres of the brain. Generalized seizures can be classified as tonic-clonic and absence seizures. Tonic-clonic seizures are associated with repetitive constriction and extension of the extremities while absence seizures involve a lapse in consciousness without significant motor movements. Absence seizures are often described as brief staring episodes and may occur several times throughout the day. All seizure types can result in a period of confusion and semi-consciousness known as the post-ictal period (Barrett & Sachs, 2006). During this period children may especially struggle with tasks involving attention, learning, and memorization (Wodrich, Kaplan, & Deering, 2006).

Three particular characteristics of epilepsy which may disrupt a child's learning process include the seizure activity itself, cognitive deficits associated with the area of the brain affected by the seizures, and side effects of anti-epileptic drugs (Wodrich, Kaplan

& Deering, 2006). Impairments associated with seizure activity can lead to missed instruction, slowed cognitive functioning, limited awareness, and memory problems for events occurring around the time of the seizure which may include instruction if seizures occur at school. Impairments caused by a seizure may differ depending upon which part of the brain is impacted by the seizure. For example, seizures in the hippocampus are more likely to cause problems with memory while seizures in the frontal lobe are more likely to cause problems with executive functions such as planning, organizing and problem solving (Wodrich, et al., 2006). The most common treatment for epilepsy is the use of anti-epileptic drugs (AEDs). The goal of these medications is to prevent seizures with minimal side effects. However, most AEDs are associated with numerous side effects including aggression, irritability, hyperactivity, as well as decreases in intellectual functioning, attention and memory. This is especially true when more than one AED is necessary to control seizure activity which occurs in approximately 10 to 15 percent of patients (Barrett & Sachs, 2006).

In addition to the medical impact of epilepsy, students with epilepsy are likely to experience a variety of social and educational difficulties (Bishop, & Boag, 2006). Social consequences associated with epilepsy include fear of how they will be perceived if others are aware of the diagnosis, difficulty making new friends (Baker, et. al., 2008), emotional problems, mental health problems, and low self-esteem (Miller, Palermo, & Grewe, 2003). Academic achievement can also be significantly impacted by many aspects of epilepsy including seizure activity, coexisting cognitive deficits, AED side effects (Wodrich, & Cunningham, 2008), absenteeism, peer acceptance, and teacher

understanding and expectations (Reilly, & Ballantine, 2011). Academic difficulties are frequently observed in the areas of math, spelling, reading comprehension and word recognition (Black & Hynd, 1995). However, no clear pattern of deficits has been observed and children with epilepsy may experience difficulties across all academic areas (Reilly, & Ballantine, 2011). Additionally, parents report lower academic expectations and students with epilepsy are more likely to qualify for special education services than other low achieving students are (Barrett & Sachs, 2006).

Given the impact that epilepsy can have on academic functioning and specifically on day-to-day performance of a student in the classroom, it is important for teachers to be aware of not only the presence of the disorder but also the possible consequences and appropriate ways to handle the consequences. However, studies examining teacher knowledge about epilepsy have shown that teachers generally possess very little knowledge about the condition (Bishop, & Boag, 2006; Lee, Lee, Chung, Yun, & Choi-Kwon, 2010; Nabors, Little, Akin-Little, & Iobst, 2008; Wodrich, Jarrar, Buchhalter, Levy, & Gay, 2011) and lack confidence in teaching students with the disorder (Nabors, et. al., 2008; Wodrich, et. al., 2011). Teachers possessing minimal knowledge about epilepsy report lower confidence in their abilities to teach students with epilepsy than their more knowledgeable colleagues (Wodrich, et al., 2011). Studies have shown that providing teachers with more information regarding a student's epilepsy diagnosis results in more accurate identification of the cause of classroom problem behaviors (Wodrich, 2005) and an increased likelihood of appropriately and confidently developing and

implementing interventions related to the student's epilepsy diagnosis (Wodrich & Spencer, 2011).

Another concerning finding in the literature is evidence showing that many teachers hold negative perceptions of students with epilepsy. Specifically, teachers report lower perceived academic achievement in students with epilepsy (Katzenstein, Fastenau, Dunn, & Austin, 2007) and an expectation that students with epilepsy will be less successful in general education settings (Bekiroğlu, Özkan, Gürses, Arpacı, & Dervent, 2004). However, improving teacher knowledge about epilepsy facts has shown a reduction in these negative perceptions. Bekiroğlu, et al. found that providing instruction for teachers about epilepsy resulted in fewer negative attitudes including more teachers indicating a belief that students with epilepsy can be successful in the general education setting.

It is clearly important for teachers to be knowledgeable about epilepsy and its impact in school in order to provide students with the most appropriate educational experience. What is less clear, however, is the best way for teachers to gain this knowledge. While many resources providing epilepsy information such as websites, books, and organizations exist, a commonly untapped resource is parents. While parents may be able to provide specific information related to their child which may not be available elsewhere (Kwong, Wong, & So, 2000), teachers commonly report not gaining information from them (Wodrich, et al., 2011). Unfortunately, there is little research examining factors that may serve as barriers to parent-teacher communication regarding epilepsy in students. As such, the current study will examine a number of factors which

may influence the communication between parents and teachers about a student with epilepsy. The following chapter consists of a review of literature related to specific teacher factors including knowledge about epilepsy, and confidence in working with students with epilepsy, as well as parent factors including perceived knowledge about epilepsy, and socio-economic status.

Chapter 2

LITERATURE REVIEW

Chapter 2 provides a review of literature relevant to the current study. Topics reviewed in this chapter include teacher knowledge about epilepsy, teacher perception of epilepsy, teacher confidence in working with students with epilepsy, parents as a potential source of epilepsy information for teachers, parent-teacher communication regarding students with epilepsy, and common barriers to parent-teacher communication. This chapter concludes with an explanation of the purpose of the current study as well as research questions and associated hypotheses.

Teacher Knowledge and Perception of Epilepsy

Children, often including those with chronic medical conditions such as epilepsy, spend a significant amount of time at school. As such, teachers can be key participants in implementing and monitoring possible interventions. This may include monitoring treatment progress or potential negative side-effects of the chronic medical condition. However, in order to assist with these roles, teachers must be knowledgeable about the condition and its possible consequences and must not possess negative stereotypes or perceptions of the student or the condition. With respect to epilepsy, unfortunately many studies have shown that teachers do not possess much knowledge regarding the condition in general or its impact on students in the classroom.

Bishop and Boag (2006) examined teachers' self-reported knowledge about epilepsy in a national sample. Based on responses to a self-report measure, teachers reported having little knowledge. Nearly 70% of teachers rated their epilepsy knowledge

as 3 or lower on a 6 point Likert-type scale (1 = No Knowledge, 6 = Extensive Knowledge). While it is concerning that so many teachers feel they do not possess a large amount of knowledge about epilepsy, it is encouraging to note that more than 90% of these teachers reported a desire for more information about school related factors of epilepsy including the impact of treatment on school performance, seizure management in the classroom, how to help other students understand epilepsy, and effective parent-teacher communication.

In an effort to more closely examine teachers' factual knowledge about epilepsy, Wodrich, et al. (2011) provided teachers with 25 multiple choice questions about epilepsy and its impact in school. On average, teachers answered approximately 9 of the 25 knowledge questions correctly. There was a significant difference in knowledge scores between teachers who were currently teaching a student with epilepsy (average number correct = 10.6) and those who were not (average number correct = 8.7). In addition, almost 20% of teachers currently teaching a student with epilepsy and almost 35% of teachers in general were classified as "extremely unknowledgeable" (correctly answering ≤ 6 questions; i.e., 24% or less). While some facts such as those about potential special education services and emergency treatment during a seizure were well known by teachers, other facts such as the risk for attention problems, depressed feelings, and learning problems were less likely to be answered correctly. It is especially concerning that teachers, including those who were aware that they currently had a student in their classroom diagnosed with epilepsy, appeared somewhat unaware of the potential attention, learning, and social/emotional problems associated with the disorder.

Many studies have also examined the relationship between teacher knowledge about epilepsy and the perception of students with the disorder. Of particular interest, teacher perception of academic achievement (Katzenstein, Fastenau, Dunn, & Austin, 2007) and attitude about the potential success of students with epilepsy in a general education setting (Bekiroğlu, Özkan, Gürses, Arpacı, & Dervent, 2004) have been examined. With regard to academic achievement, it has been shown that students with epilepsy are perceived to have lower achievement when teachers are aware of the epilepsy diagnosis than when teachers are unaware of such a diagnosis (Katzenstein, Fastenau, Dunn, & Austin, 2007). Katzenstein et al. examined the perceptions of teachers who were instructing 125 children with epilepsy. This sample consisted of 92 teachers who were aware of the student's epilepsy diagnosis and 33 who were not. Teachers completed the Achenbach Teacher Report Form (TRF; Achenbach, 1991). This scale includes an Academic Performance subscale which was used as the dependent variable for teachers' perception of academic achievement. A standardized measure of academic achievement for each child was obtained through the use of the Woodcock-Johnson Tests of Achievement-Revised (WJ-R; Woodcock, & Mather, 1989, 1990). While student achievement as measured by the WJ-R did not differ between groups, teachers' responses on the TRF Academic Performance subscale were significantly lower when teachers were aware of an epilepsy diagnosis than when teachers were unaware of the diagnosis. These lower perceptions of academic achievement based solely on an epilepsy label can have a negative effect on a student's educational experience. Teachers tend to provide more praise, cues, opportunities to answer questions, and attention to

high-expectation students than to low-expectation students (Katzenstein, et. al., 2007). Praise, opportunities to respond, cues, and attention are associated with better academic performance, more correct responses, more on-task behavior, and less disruptive behavior (Kern, & Clemens, 2007). Lower teacher expectations may lead a student to have a lower self-concept, and lower confidence in his or her academic abilities. Katzenstein et al., suggest that these potential negative teacher perceptions can make it difficult for parents to decide whether or not to communicate an epilepsy diagnosis with their child's teacher. On the one hand, the safety of the child is a concern that the teacher should be aware of. On the other hand, the fear that this information may lead to negative perceptions and stereotypes is also a valid concern.

Regarding teacher attitudes, researchers in Turkey examined the relationship between teacher attitude towards epilepsy and teacher knowledge about the condition. Both variables were measured before and after providing information to teachers through a lecture that included videos of common seizures types and also provided information regarding the causes and consequences of epilepsy. This study found that teacher knowledge increased after the lecture while negative perceptions and attitudes towards individuals with epilepsy decreased. Most of the attitudes and perceptions examined in this study were not specifically related to students with epilepsy. However, following the lecture teachers did indicate an increased belief that students with epilepsy can be successful in a general education classroom (Bekiroğlu, et al., 2004). Altogether, this information suggests that teacher knowledge can be improved and that doing so may also have the benefit of improving the perception of students with epilepsy.

Given that teacher knowledge and perception of epilepsy appear to be related, the impact of the relationship in school has been further examined. In particular, the impact of providing differing levels of information about epilepsy to teachers has been explored. Cunningham and Wodrich (2006) examined what impact providing diagnostic information to teachers had on the generation of classroom accommodations. While this study focused on Type-1 Diabetes Mellitus (T1DM) it would be reasonable to expect similar results if replicated with an epilepsy diagnosis. In this study, teachers were provided with either no information about a medical diagnosis (No Knowledge), only the knowledge that the student was diagnosed with T1DM (Diagnosis Only), or were given the diagnosis, facts relevant to the manifestation of the diagnosis in the classroom, and examples of appropriate classroom accommodations for the disorder (Diagnosis + Classroom Implications). All teachers were then asked to generate appropriate classroom accommodation for four different students with different presenting problems. All four students presented with classroom problems which are associated with a diagnosis of T1DM. The proportion of accommodations specifically related to the medical diagnosis was the variable of interest. Teachers provided with either a diagnosis or a diagnosis plus additional information generated significantly more disease specific accommodations than their colleagues who were provided with no information about the medical diagnosis. These results highlight a potential benefit of providing teachers with medical information including but not limited to simply a diagnosis.

In a similar study, Wodrich (2005) studied the impact that providing teachers with increasing amounts of medical information has on the perception of potential causes of

problem behaviors in the classroom. In this study, teachers were told either nothing about a medical diagnosis (No Knowledge), only that the student had a medical diagnosis and what the diagnosis was (Diagnosis Only), or were given the diagnosis and facts relevant to the manifestation of the diagnosis in the classroom (Diagnosis + Facts). This study specifically examined epilepsy and Type-1 Diabetes Mellitus. After being provided with the information about the student, teachers were shown a video of the student's classroom teacher describing problem behaviors that had been observed in the classroom. Within the epilepsy condition, problem behaviors consisted of "the student forgets facts, performs inconsistently, seems inattentive and lethargic, is sometimes hard to motivate, and has relative difficulty with penmanship" (Wodrich, 2005, p. 292). These problems are consistent with symptoms associated with epilepsy and side effects of anti-epilepsy drugs including those related to concentration, memory, work completion, and productiveness. Based on all of the provided information, teachers were asked to indicate what they believed to be the cause of the problem behaviors. Only 5.5% of teachers provided with no diagnosis and 5.3% of teachers provide a diagnosis only indicated that "Health Problems" might be the main contributor to the problem behaviors. By comparison, teachers who were provided with information about how the diagnosis may manifest in the classroom indicated "Health Problems" as the primary concern 64.7% of the time. Teachers who did not indicate medical problems as the potential cause of the problem behaviors indicated other possible explanations such as emotional problems (i.e., anxiety or depression), ADHD, learning disabilities, laziness, lack of motivation, and lack of effort. These results further support the notion that providing diagnostic information

as well as likely manifestations of the disorder in the classroom can have beneficial consequences. This information results in more appropriate accommodations as well as an increased likelihood of attributing problem behaviors to medical causes rather than other possible causes such as ADHD, learning disabilities, or laziness.

Teacher Confidence Teaching Students with Epilepsy

Teacher confidence when working with a student with epilepsy is an additional factor that can influence the educational experience of a child diagnosed with epilepsy. Bannon et al. (1992) found that on average teachers reported low confidence in working with a student with epilepsy. While 31% of teachers in the sample reported feeling “quite” confident, 64% did not feel confident. Teachers who had witnessed a seizure or who had a friend or relative with epilepsy reported higher confidence than their colleagues. Most teachers (92%) indicated that additional information about epilepsy would be beneficial and 46% noted that increased information would improve their confidence in working with these students. While 49% of teachers reported that they learned of a student’s epilepsy from communication with the child’s parents, a shocking 30% learned of the condition when the student had a seizure during school and an additional 14% found out from the school nurse or doctor. Teachers in this study indicated being open to communicating with parents regarding the student’s epilepsy. Specifically they reported wanting more information about the frequency of seizures, treatment, warning signs, and parent contact information.

Wodrich et al. (2011) further examined teacher confidence in teaching a student with epilepsy as well as its relationship with teacher knowledge about the disorder.

Specifically, teachers answered 14 survey items related to confidence for handling situations related to instructional needs, medical concerns, and interpersonal needs of a student with epilepsy. Teachers indicated their level of confidence for each item on a 5-point Likert-type scale (1 = very unsure, 5 = very confident). Teachers currently teaching a student with epilepsy reported overall higher confidence on average (3.6 out of 5) than teachers not teaching a student with epilepsy (2.8 out of 5). In addition, teachers currently teaching a student with epilepsy reported higher confidence across every item on the confidence scale. In addition, this study showed a significant positive correlation between teacher knowledge about epilepsy and confidence in teaching a student with such a diagnosis ($r = 0.43$). Those teachers who answered more knowledge questions correctly also expressed greater confidence. This relationship was true regardless of whether a teacher was currently teaching a student with epilepsy or not ($r = 0.33$ and $r = 0.42$ respectively).

Parents as a Source of Epilepsy Information

Given that increased teacher knowledge has been linked to a reduction in negative perceptions (Bekiroğlu, Özkan, Gürses, Arpacı, & Dervent, 2004) and an increase in appropriate attributions (Wodrich, 2005), classroom accommodations (Cunningham & Wodrich, 2006), and teacher confidence (Wodrich, Jarrar, Buchhalter, Levy, & Gay, 2011), the question now becomes “how can we get this important information to teachers?” One potential source is parents. Like teachers, parents vary in the amount of knowledge they have about epilepsy. In a sample of parents in Hong Kong, more than half did not know the cause of their child’s epilepsy and two-thirds of parents did not

know the name and dosage of the anti-epileptic medication prescribed to their child. However, these parents were able to provide specific additional information about their child which could be useful to teachers. Parents were able to describe specific behavioral concerns (i.e., short temper, restlessness) as well as other school related problems (i.e., trouble keeping up, need for frequent naps, social problems, and seizure occurrence at school) (Kwong, Wong, & So, 2000). This information can be critical in allowing teachers to successfully work with students with epilepsy. As for specific information that the parent may not be knowledgeable about, he or she may be willing and able to provide additional resources such as contact information for the student's physician or access to other resources they are aware of (i.e., brochures, books, websites, etc.).

Parent-Teacher Communication Regarding Epilepsy

Communication between parents and teachers is important to the success of all children. The quality of a parent-teacher relationship can impact the quality of the student-teacher relationship. Communication between parents and teachers can lead to better school adjustment, increased learning opportunities, and a better opportunity to work through academic and social problems that may arise during the school year (Power, 2006). Communication between parents and teachers of a student with epilepsy can be especially important. Teachers can assist with the monitoring of symptoms and potential medication side-effects in the classroom, as well as providing an observation and account of functioning in a structured, typical, day-to-day environment (Barrett & Sachs, 2006). This feedback can be used to help physicians determine the most appropriate diagnosis and treatment protocol. Following a diagnosis, it is important for

teachers to be familiar with some of the specifics of the child's disorder including the appropriate response to a possible seizure in the classroom and helpful accommodations. In addition, teachers may be in the best position to educate other students in the classroom about the disorder, dissuade any negative attitudes, and encourage appropriate socialization (Black & Hynd, 1995).

Wodrich et al. (2011) found that teachers currently teaching a student with epilepsy were only somewhat likely to gain epilepsy knowledge from communication with parents (2.76 on a 5 point Likert-type scale; 1 = none of my knowledge, 5 = all of my knowledge). However, these same teachers indicated a somewhat higher preference for receiving information from parents (3.39 on a 5 point rating scale). Teachers not currently teaching a student with epilepsy reported gaining very little knowledge about epilepsy from parents (1.82 out of 5) but still indicated a preference for receiving such information from parents (3.31 out of 5). Further examination of the same sample of teachers, showed that elementary and middle school teachers were more likely to prefer information from parents than were their colleagues at the high school level (Gay, 2011).

Parent disclosure of epilepsy information has also been examined. In a study of parents and caregivers of children and adolescents with epilepsy, 507 parents and caregivers completed a survey related to diagnosis disclosure. Nearly one in four caregivers reported withholding their child's diagnosis. The main reason indicated for keeping this information a secret was fear of potential stigma or differential treatment based on the diagnosis. Specifically, parents and caregivers were concerned that family

members and teachers would treat their child differently after learning of the epilepsy diagnosis (Baker, et al., 2008).

Differences clearly exist in the amount of communication parents and teachers engage in regarding a student with epilepsy. However, no study has addressed what parent and teacher factors may influence the level of communication between these individuals. There are many factors that may serve as barriers to effective parent-teacher communication. The following section will review some of these factors that are relevant to the current study.

Barriers to Parent-Teacher Communication

Various factors that may impact communication between home and school have been suggested. Two such factors are socio-economic status and culture. While parents in “working-class” or “poor” families are no less likely to want their children to perform well in school, it has been suggested that they may go about achieving this goal in different ways than “middle-class” families. Parents in lower socio-economic classes often report being concerned that they will do something wrong when it comes to school matters. For this reason, they may refrain from offering unsolicited advice and defer decision making to professionals at the school. These parents may consider being “supportive” to mean doing as the professionals suggest (Lareau, 2003).

Because parents in lower socio-economic areas may be less likely to volunteer information and advice, for teachers to gain important information they may need to initiate communication and encourage parents to share their knowledge. Unfortunately, research examining home-school interactions reveals a number of ways in which these

relationships are inadequate, especially with culturally diverse families. Harry (2002 & 2008) reviewed literature related to parent-teacher communication with culturally diverse families. These reviews outlined many of the barriers to communication and collaboration between teachers and culturally diverse families. These factors are commonly related to language barriers, interpretations and definitions of important terms, and communication styles. Teachers tend to adopt a traditional role as a professional when it comes to communicating with parents. This role positions school personnel as experts which may interfere with the interactive nature of parent-teacher communication. Teachers adopting this professional role often provide less information to parents, ask fewer questions, and may even over-ride parent input. Another factor that is likely to impact the effectiveness of parent-teacher communication with culturally diverse families is the definition and interpretation of a disability. Culture, ethnicity, and socio-economic status have been shown as predictors for differing developmental expectations. This often also leads to differing definitions of a disability. Parents may have a wider range of what is considered to be “normal” development and behavior than schools do. For this reason, a school may determine that a student demonstrates the criteria associated with a disability while the parents believe that their child is developing typically. These differences may hinder cooperation and communication between parents and school officials.

Parent Participation in Special Education

While not all students with epilepsy qualify for special education services, many of them do. Special education law, specifically IDEA (2004), outlines specific guidelines

regarding parent participation in the special education process. This law states that a team including all interested parties should be involved in educational decision making during the special education process. This team must include, but is not limited to, general education teachers, special education teachers, parents, a district representative, and an individual to interpret the implications of any information gathered. Parents should be included in all steps of the special education process from the initial determination that an evaluation is needed to annual Individualized Education Plan (IEP) meetings. During the evaluation process parents must provide informed consent for any assessments and must be given the opportunity to provide any input they consider to be important. Following the completion of an evaluation, parents must be informed of the results and be invited to participate in any decisions regarding special education eligibility and placement. With regard to the IEP, parent input should be considered when determining components such as present levels of performance, goals, appropriate accommodations in the classroom and during testing, and the most appropriate environment for services. The Council for Exceptional Children (CEC) further supports this notion of including parents in the educational process. The CEC developed ethical recommendations for special educators highlighting the importance of forming collaborative relationships with families. The goal of these relationships should be developing resources that will lead to improved learning outcomes for the students.

Despite these legal requirements and ethical guidelines that parents must be considered an equal member of the educational team, many parents report feeling dissatisfied with the special education process. Several studies highlight that parents often

feel intimidated by educators, confused by the information presented during meetings, and consigned to roles involving only listening to other team members, answering questions, and signing paperwork (Childres & Chambers, 2005). It is unclear why parents are not treated as equal partners in a process they are so personally invested in.

Current Study

Given that very little is known about the factors impacting parent-teacher communication about medical conditions including epilepsy, the aim of the current study was to examine several of these factors including teacher perception of parental knowledge regarding epilepsy, teacher knowledge about epilepsy, teacher confidence in instructing a student with epilepsy, and parent socio-economic status. Specifically this study examined the impact of these factors on teachers' willingness to seek additional information from parents.

Specific research questions addressed by this study included:

1. Are parents of children with epilepsy who are perceived by teachers as more knowledgeable about epilepsy sought out for epilepsy-related information by teachers more often than parents who are perceived as lacking epilepsy knowledge?
2. Is there an interaction effect between perceived parent knowledge and teacher confidence regarding teachers seeking epilepsy information from parents?

3. Is there an interaction effect between perceived parent knowledge and teacher knowledge regarding teachers seeking epilepsy information from parents?
4. Do teachers currently working in schools in a high socio-economic area indicate more willingness to communicate with parents than their colleagues working in low socio-economic areas?

Based on the previously reviewed literature the following hypotheses regarding the above research questions were anticipated:

1. Increasing levels of perceived parent knowledge about epilepsy and its impact on school will result in an increasing likelihood of teacher willingness to initiate communication regarding the disorder.
2. An interaction between perceived parent knowledge and teacher confidence will be present with respect to teacher driven parent-teacher communication. Specifically, it is expected that teachers with lower confidence will be highly likely to seek information from parents regardless of the perceived knowledge while teachers with higher confidence will be less likely to seek parent input regardless of perceived parent knowledge (See Figure 1).
3. An interaction between perceived parent knowledge and teacher knowledge is also expected to be present when examining teacher-driven parent-teacher communication. Specifically, teachers who possess high levels of epilepsy knowledge are expected to be less likely to seek

information from parents regardless of the perceived parental knowledge. Teachers with low levels of epilepsy knowledge are expected to be more likely to seek information from parents regardless of the perceived parent knowledge level (See Figure 2).

4. Teachers working in schools in high socio-economic areas are expected to indicate a higher likelihood of initiating communication with parents regarding their child's epilepsy than are teachers currently working in schools in low socio-economic areas. This is expected to be true regardless of perceived parent knowledge, teacher knowledge, and teacher confidence.

Chapter 3

METHOD

This study sought to examine the relationship between several parent and teacher variables and teacher willingness to communicate with parents regarding a student with epilepsy. As such, specific variables of interest included teacher perception of parent epilepsy knowledge, parent demographics such as socio-economic status, teacher knowledge about epilepsy, and teacher confidence in teaching a student with epilepsy.

Participants

The survey was completed by 57 certified teachers. Of these 57 teachers, 38 were currently teaching at the elementary level (grades K-5), 17 at the middle school level (grades 6-8), and two did not indicate what grade level they were teaching. This study included general and special education teachers and excluded student teachers, substitute teachers, teacher aides, administrators, and elective teachers (physical education, music, library, etc). Complete demographic information can be found in Table 1.

Setting

Teachers were recruited from schools in a large metropolitan area in the southwestern United States. Schools in middle and low socio-economic areas were included. Socio-economic status was determined through information provided on the National Center for Education Statistics website (<http://nces.ed.gov>) regarding student eligibility for free and reduced-price lunch at each school setting. The general socio-economic level of the school served as an independent variable to examine the impact of parent income on teacher perception of knowledge and teacher information seeking behavior.

Procedure

This study was approved by the Office of Research Integrity & Assurance at Arizona State University (See Appendix C for IRB approval letter). Following IRB approval, permission to collect data was obtained from school districts and individual school principals at local elementary and middle schools around a large city in the southwestern United States. After permission was obtained, teachers were recruited on a school-wide basis at faculty meetings or through email. At faculty meetings teachers were asked to complete the survey at that time. If data collection was not possible during faculty meetings, teachers at each school were invited to participate through an email. Surveys were then placed in teachers' school mailboxes and teachers were asked to return them by a certain date. Teachers were sent two follow-up emails as reminders to complete and return the survey. Response rates varied considerably between groups of teachers recruited in person rather than through email. Response rate for in person data collection was 96% (24 out of 25) while response rate from email recruitment was 32% (33 out of 103). Completion and return of the survey was considered consent to participate (See Appendix D for teacher consent letter). As incentive, teachers at each school were entered into a drawing for one of two \$10 gift cards. Two gift cards per school were given.

Materials and Instrumentation

This study utilized the Confidence and Knowledge subscales of the Teacher Epilepsy Knowledge and Confidence Scale (TEKCS; Wodrich, Jarrar, Buchhalter, Levy, & Gay, 2011). The Confidence subscale consists of 14 Likert-type items measuring teachers' confidence in their ability to handle a variety of academic, social/emotional, and

medical situations that may occur while teaching a student who has epilepsy. The Knowledge subscale consists of 25 multiple-choice items measuring teachers' knowledge about epilepsy as it relates to education. A summary of the content of Knowledge and Confidence questions from the TEKCS can be found in Tables 2 and 3. Teacher demographic information such as age, gender, and education level was also obtained.

The psychometric properties of the TEKCS have previously been examined (Wodrich, Jarrar, Buchhalter, Levy, & Gay, 2011). Internal consistency reliability was satisfactory for the Knowledge ($\alpha = 0.82$) and the Confidence subscales ($\alpha = 0.91$). Exploratory factor analysis found that a one-factor solution best represents the Knowledge subscale. This was determined to be a factor representing general knowledge about epilepsy. A one-factor solution was also found to best represent the Confidence subscale. This factor was deemed to represent general confidence in handling situations related to students with epilepsy. The authors concluded that the psychometric properties of the TEKCS were favorable enough to be used in that study. The current study utilized a similar sample of teachers for similar purposes. As such, this scale was considered to be a valid measure for use in this study.

In addition to the TEKCS, three case vignettes were developed and presented to teachers (see Appendix A for vignettes). These vignettes consisted of a letter to the teacher from a hypothetical parent of a student in their classroom who has been diagnosed with epilepsy. The vignettes differed in the amount of information about epilepsy that the parent presented to the teacher as well as how knowledgeable the parent appears to be about the impact of epilepsy on their child's education. The parent in the

vignette appeared as either “very well informed,” “somewhat informed,” or “not well informed” about epilepsy. Teachers were randomly assigned to receive one of the three vignettes. Following the vignette, teachers were asked about their likelihood of seeking information about epilepsy from a variety of sources. Potential sources of information included a website devoted to epilepsy, other teachers, a school nurse, parents of the student with epilepsy, readings and manuals devoted to epilepsy, workshops devoted to epilepsy, presentations to teachers by medical personnel, the student with epilepsy, college/university courses, and other sources. Teachers indicated likeliness to seek information from each of these sources on a 5-point Likert-type scale (1 = very unlikely, 2 = somewhat unlikely, 3 = may or may not, 4 = somewhat likely, 5 = very likely) (see Appendix B to view this portion of the survey).

As a manipulation check and to assess teacher perception of the parent knowledge level, teachers were also asked how well informed they believed the parent was about epilepsy and its impact on his/her child’s education. Lastly teachers were asked an open ended question about what information they would seek from the parent in the vignette.

Data Analysis

This study utilized a between groups design, including four independent variables and one dependent variable. The four independent variables included teacher knowledge, teacher confidence, perceived parent knowledge level, and school socio-economic level. Teacher knowledge and teacher confidence were measured through teachers’ responses to the TEKCS as described previously. Confidence scores ranged from 1 to 5 while Knowledge scores ranged from 0 to 25. Perceived parent knowledge level was randomly

assigned with three levels: well informed, somewhat informed, and not well informed. However, teachers also indicated how informed they perceived the parent in the vignette to be. If a teacher indicated that the parents' knowledge level was perceived to be different than the level intended by the researcher, that teacher was moved to the group at the level that the teacher indicated. This was done to control for possible differences between researcher and teacher perception of the level of parent knowledge. Parent socio-economic level was based on the socio-economic level of the school at which the teacher was employed. This was determined by the percentage of students participating in the free and reduced-price lunch program at the school based on information provided by the National Center for Education Statistics (<http://nces.ed.gov>). The main dependent variable for this study was teachers' likeliness to seek information from parents as indicated by responses to the follow-up question presented after the case vignette.

Chapter 4

RESULTS

Chapter 4 will review information regarding the data collected for this study and analyses performed to assess the various hypotheses as well as several supplemental analyses. This chapter will begin with an examination of the demographic information of the study participants and analyses concerning potential confounding variables. This will be followed by a description of the statistical analyses regarding each study hypothesis. Finally, this chapter will conclude with supplemental analyses regarding other notable findings.

Participant demographics

Participants in this study included elementary and middle school teachers. General and special education teachers were included. This study did not include other school staff such as administrators, special area teachers, student teachers, or substitute teachers. A total of 57 teachers participated in this study. Of these participants 66.7% reported that they were currently teaching elementary grade levels (k-5), 29.8% reported teaching middle school grades (6-8), and 3.5% of teachers did not report the current grade level taught. Ten participants (17.5%) reported that they were currently teaching a student with epilepsy or a seizure disorder. Ten participants also indicated currently teaching special education. Full demographic information can be found in Table 1.

Socio-economic status (SES) was defined based on information provided on the National Center for Education Statistics website (<http://nces.ed.gov>) regarding student eligibility for free and reduced-price lunch. For the purposes of this study low SES was

defined as greater than 50% of students eligible for free or reduced-price lunch. This criteria resulted in three schools (40 participants) falling within the low SES category and two schools (17 participants) falling in a “middle” SES category (less than 40% of students eligible for free or reduced-price lunch).

Group differences in specific independent variables were examined for confounding data that may have an impact on dependent variables of interest. Specifically the incidence of special education teachers across grade levels, socio-economic levels, and epilepsy teaching status were examined.

No difference was found between the percentages of current special education teachers across grade levels ($\chi^2 [1, N = 55] = 0.005, p = .945$). Frequency and percentage of current special education teachers across grade level can be found in Table 4. There was also not a significant difference between the percentage of teachers currently teaching special education across socio-economic levels ($\chi^2 [1, N = 57] = 2.28, p = .131$). Frequency and percentage of current special education teachers across socio-economic level can be found in Table 5. A significant difference was found between the percentage general education versus special education teachers who were currently teaching a student with epilepsy ($\chi^2 [1, N = 57] = 8.831, p = .003$). Significantly more teachers who were currently teaching a student with epilepsy were also currently teaching special education. The frequency and percentage of teachers currently teaching a student with epilepsy and currently teaching special education and general education can be found in Table 6. The implications of this significant difference will be discussed further in the following sections.

Perception of parent knowledge level

In this study, teachers were provided with one of three versions of a letter from a hypothetical parent of a student in their class with a diagnosis of epilepsy. The three letters differed in the amount of information the parent provided to the teacher. The parent knowledge in each level was classified based on how much information was provided and fell into one of three ranges: “not well informed,” “somewhat well informed,” or “very well informed.” As a manipulation check, teachers were asked to rate how well informed they believed the parent was about the effect of epilepsy on the student’s performance in school. Because the major independent variable in the current study was teachers’ perception of parent knowledge, the teacher ratings were used to group participants when evaluating the study hypotheses. This was done by coding teacher perception of parent knowledge as a separate variable. This variable was used as the perceived parent knowledge independent variable and factor with three levels in subsequent analyses pertaining to the perception of parent knowledge.

The correlation between the researcher’s ratings of parent knowledge and teachers’ perception of parent knowledge was significant ($r = .467, p = < .001$). Approximately half of participants (50.9%) rated parent knowledge at the same level as the researcher. Of the remaining teachers, 33.4% perceived the parent as less informed than originally rated by the researcher, and 15.8% of teachers rated the parent as more informed than the original rating by the researcher.

Based on the original ratings of parent knowledge levels assigned by the researcher the following number of surveys at each level were completed: not well

informed = 19, somewhat informed = 18, very well informed = 20. Of the 19 participants given the not well informed parent letter, 12 also rated the parent as not well informed. Nine of the 18 participants who received a letter from a parent intended to be somewhat informed agreed with this rating. Out of the 20 participants given the very well informed parent letter, eight indicated the same rating. Overall, based on teacher ratings of parent knowledge the following frequencies at each level were reported: not well informed = 22, somewhat informed = 24, very well informed = 11.

Study hypotheses

The dependent variable for the current study was the likelihood of teachers seeking information regarding a student with epilepsy from that student's parents. This variable was rated by teachers on a Likert-type rating scale (1 = very unlikely, 2 = somewhat unlikely, 3 = may or may not, 4 = somewhat likely, 5 = very likely). Of the 57 participants included in this study, 48 indicated that they were "very likely" to contact parents, seven indicated they were "somewhat likely," and three provided a rating of "may or may not" or "somewhat unlikely." Because of the significantly skewed distribution of these ratings, a non-parametric analysis procedure was considered. Specifically the Kruskal-Wallis procedure suggested by Green and Salkind (2008) was considered. This procedure examines differences between group medians rather than group means. Ratings provided by the current sample resulted in equal medians across groups. As such, the Kruskal-Wallis method could not be utilized. The following results were obtained using parametric analyses and should be interpreted with caution due to

the significant skew of the data. Implications of this distribution will be discussed in subsequent chapters.

The first research hypothesis posited that parents who were perceived as more knowledgeable about epilepsy would be sought out by teachers for information more often than parents who were perceived as less knowledgeable. To examine this hypothesis a one-way ANOVA was conducted. Parental knowledge was the factor with three levels: very well informed, somewhat informed, and not well informed. The dependent variable of interest was teacher likelihood to communicate with parents regarding their child's epilepsy. This analysis revealed no significant difference between teacher communication with parents across each parent knowledge level ($F [2, 57] = .215, p = .807$). On a Likert-type rating scale (1 = very unlikely, 2 = somewhat unlikely, 3 = may or may not, 4 = somewhat likely, 5 = very likely), teachers across knowledge level groups overwhelmingly reported that they would be "somewhat likely" or "very likely" to seek information from parents. Teachers who rated parents as "somewhat well informed" or "very well informed" indicated an average likelihood of 4.8 for contacting parents for more information while teachers who rated parents as "not well informed" about epilepsy and its impact on performance in school still reported an average rating of 4.7.

The second hypothesis suggested that there was an interaction effect between perceived parent knowledge and teacher confidence on teachers' ratings of seeking epilepsy information from parents. Specifically it was expected that teachers with high levels of confidence would be more likely to seek information from parents perceived as

very knowledgeable than from parents perceived as not very knowledgeable. On the other hand, teachers with lower confidence ratings were expected to seek information from parents at higher rates regardless of the perception of the parent's knowledge level. To examine this potential interaction effect a linear regression analysis was used. This analysis revealed that the relationship between parent contact and perceived parent knowledge did not change significantly across levels of teacher confidence ($t(56) = -.58, p = .564$). The confidence-by-perceived parent knowledge interaction accounted for only 0.6% more variance in the likelihood that a teacher would seek information from the parents than did the model containing only teacher perception of parent knowledge and teacher confidence (R^2 change = .006).

The third hypothesis was in regards to a possible interaction effect between teacher knowledge and perception of parent knowledge on the likelihood of teachers seeking epilepsy related information from the parents. This hypothesis suggested that teachers possessing very little knowledge regarding epilepsy would be highly likely to seek out information from parents regardless of the perceived level of parent knowledge. However, as teacher knowledge increased it was anticipated that teachers would be less likely to seek information from parents who were perceived to be less knowledgeable. This hypothesis was also examined with a linear regression analysis. The regression analysis showed that the variability in teacher ratings of seeking information from parents was not significantly different across teacher confidence levels ($t(56) = 1.44, p = .886$). The teacher knowledge-by-perceived parent knowledge interaction accounted for an

additional 0% of the variance in the likelihood of teachers seeking information from the parents (R^2 change = .000).

Regarding the fourth hypothesis related to the difference in teacher contact with parents across socio-economic (SES) levels, a one-way ANOVA was conducted. This hypothesis suggested that teachers working with students in low SES schools would be less likely to contact parents than their colleagues working in higher SES schools. For the ANOVA, socio-economic status was the factor with two levels: low and middle. The dependent variable was teacher willingness to communicate with parents regarding their child's epilepsy. This variable was based on responses to the previously mentioned Likert-type item. Results indicated that there is not a significant difference in teacher responses in middle versus low SES schools ($F [1, 57] = .319, p = .574$). Teachers currently instructing in a low SES school indicated an average likelihood of contacting parents as 4.7 while teachers working in middle SES schools reported an average rating of 4.8 for contacting parents for epilepsy information.

Supplemental analyses

Additional analyses were conducted to examine other relevant findings aside from the proposed hypotheses. This included examining the differences in knowledge and confidence levels between teachers currently teaching a student with epilepsy and those not teaching a student with epilepsy, the differences in knowledge and confidence between current special education and general education teachers, correlations between teacher knowledge and confidence, a comparison between parent contact ratings in the

current study sample and a previous study sample, and lastly qualitative information regarding what types of information teachers are likely to seek from parents.

Regarding the knowledge level of teachers currently teaching a student with epilepsy and those not teaching a student with epilepsy a one-way ANOVA was conducted. Epilepsy teaching status was the factor with two levels: currently teaching a student with epilepsy, not currently teaching a student with epilepsy. The dependent variable was the number of knowledge questions answered correctly (out of 25). A significant difference between these two groups was found ($F [1, 57] = 5.63, p = .021, \eta^2 = .09$). Teachers currently teaching a student with epilepsy answered significantly more knowledge questions correctly (mean = 13.2; SD = 4.0) than their colleagues who were not currently teaching a student with epilepsy (mean = 9.3; SD = 4.9). This finding was similar to results found by Wodrich, et al. (2011). In the previous study teachers currently teaching a student with epilepsy answered an average of 10.6 (SD = 4.4) questions correct while teachers not currently teaching a student with epilepsy answered 8.7 (SD = 4.7) questions correctly. As with this previous study, participants were defined as “extremely unknowledgeable” if they answered six or fewer knowledge questions correctly. A total of 18 participants (31.6%) met criteria for this category. Of these 18 participants, only one reported currently teaching a student with epilepsy. While teachers currently instructing a student with epilepsy correctly answered more knowledge questions on average than their colleagues, they still answered roughly 50% of questions incorrectly.

Knowledge level was also compared between current special education and general education teachers using a one-way ANOVA. The factor for this analysis was current special education teaching status. The dependent variable was the number of epilepsy knowledge questions answered correctly. This analysis revealed a significant difference between these two groups ($F [1, 57] = 15.98, p < .001, \eta^2 = .23$). Current special education teachers answered significantly more knowledge questions correctly (mean = 15) than their general education colleagues (mean = 8.9). This finding was also consistent with the findings of Wodrich, et al., (2011).

To further examine the relationship between knowledge, special education teaching experience, and teaching a student with epilepsy, an ANCOVA was conducted with special education teaching experience treated as a covariate. This analysis revealed that the difference in knowledge level between teachers currently instructing a student with epilepsy and those not instructing a student with epilepsy was not significant when special education experience was controlled statistically ($F [1, 57] = 1.31, p = .26, \eta^2 = .02$). This finding conflicted with previous research. Possible explanations for these contradictory findings will be discussed in the following chapter.

Differences in level of confidence were also examined between teachers currently teaching a student with epilepsy and those not teaching a student with epilepsy. Again, an ANOVA was conducted to examine this relationship with a factor of epilepsy teaching status and a dependent variable of average overall teacher confidence. This analysis resulted in a significant difference in confidence level between teachers currently teaching a student with epilepsy and those not teaching a student with epilepsy ($F [1, 57]$

= 6.29, $p = .015$, $\eta^2 = .103$). Teachers currently teaching a student with epilepsy reported overall greater confidence (mean = 3.9) than did teachers who were not teaching a student with epilepsy (mean = 3.1). This result replicated findings from Wodrich, et al. (2011).

Confidence level was also compared between current special education and general education teachers. An ANOVA with a special education versus general education factor and a dependent variable of average teacher confidence revealed a non-significant difference in level of confidence between these two groups ($F [1, 57] = 3.28$, $p = .075$, $\eta^2 = .056$). Special education teachers did report higher overall confidence (mean = 3.7) than general education teachers (mean = 3.2). However, this difference was not significant.

Similar to previous findings (Wodrich, Jarrar, Buchhalter, Levy, & Gay, 2011) the correlation between knowledge and overall confidence was significant ($r = .30$, $p = .025$). Teachers who answered more knowledge questions correctly were also more likely to report higher overall confidence. The overall correlations can be found in Table 7.

As a final supplemental statistical analysis, the ratings provided by participants in the current study for the likelihood of seeking information from parents was compared to the ratings of preference for acquiring information from parents in a previously conducted study using the same scale (Wodrich, Jarrar, Buchhalter, Levy, & Gay, 2011). This analysis was conducted as a means of expanding upon previous findings and to explore any possible differences between teachers who have been contacted by a parent and those who have not. This difference was examined using an ANOVA. The factor in

this analysis was the study in which the participant took part. Implicit within this grouping is the fact that teachers in the current study received a letter from a hypothetical parent while teachers in the previous study did not receive any such “communication.” The dependent variable for this analysis was the teachers’ ratings of the likelihood of getting information from the parent of the child with epilepsy. The analysis revealed a significant difference between the participants in each of these studies ($F [1, 340] = 87.66, p < .001$). The teachers in the current sample (who were given the letter from a hypothetical parent) reported significantly higher ratings of potentially contacting the parents for more information (mean = 4.75) than did teachers in the previous study who were not given a letter from a parent (mean = 3.34). The implications of this finding will be discussed further in the following chapter.

One question was examined qualitatively. This was an open-ended question that asked teachers what types of information they would seek from the parents who provided the letter. Of the 57 participants in this study, 54 provided responses to this question. The qualitative research methods reviewed by Cohen, Manion, and Morrison (2007) were used to conduct the analysis of this question. Cohen, et al. reviewed two main forms of qualitative analysis: content analysis and grounded theory. Content analysis requires summarizing textual data by grouping responses into categories based on pre-existing and emergent themes. Responses are initially coded based on expected groupings. After further examination, additional categories may become apparent or some categories may be grouped together to form clusters. Grounded theory on the other hand focuses on developing theories based on patterns that emerge from the data. In this process, new

categories and theories are developed based on emerging patterns rather than “forcing” the data to fit into pre-determined categories. To examine the current research question, content analysis was initially used as a starting point to categorize participant responses. Based on the types of questions included in the knowledge and confidence subscales of the TEKCS the initial categories included for coding purposes were medical information, social/behavioral concerns, academic concerns, and appropriate responses to seizures. After reviewing participant responses additional categories and subcategories emerged. Many teachers provided responses that covered several different aspects of the “medical information” category. This grouping was expanded to include individual categories for medication information, triggers and warning signs, descriptions of seizure activity (frequency, duration, etc), and medical history. In addition, categories were also included for parent contact information and other information. Responses were grouped into categories based on key words provided by the respondent. To ensure reliability of response groupings, an additional rater coded responses based on the developed categories. See Table 8 for key words used to determine coding.

Based on this analysis procedure the most common information sought out by teachers was information related to the triggers and warning signs of the student’s seizures (n = 20) as well as specifics about the seizure activity (i.e., frequency, duration, history, etc; n = 19). Other common responses included what specifically should be done during a seizure (n = 14), and information about the student’s social adjustment (n = 12) and medical history (n = 10). These are very similar results to previous findings by Bannon et al (1992) which indicated that teachers reported wanting more information

about the frequency of seizures, treatment, warning signs, and parent contact information, as well as results from Bishop and Boag (2006) showing that teachers generally would like more information regarding seizure management in the classroom, and effective parent-teacher communication. In the current sample, three participants specifically mentioned wanting details about how parents would like to be contacted in the event of a seizure occurring at school and five participants requested information about seizure medication. Other responses provided by teachers included questions regarding if the diagnosis had been shared with the student's friends, how the student reacts to the seizures, what resources are available, and generally "How can I help?"

Chapter 5

DISCUSSION

This chapter will review findings and discuss possible interpretations of the results from the current study. This will include reviewing the implications of the results from each of the four study hypotheses as well as additional supplemental analyses, study limitations, future research directions, and conclusions that may be inferred from the current results.

Study hypotheses

The first research hypothesis examined the relationship between teachers' perception of parent knowledge regarding the impact of epilepsy in the classroom and teachers' willingness to seek information from these parents. Previous research indicated that teachers generally obtain little of their prior knowledge about epilepsy from parents and would be only somewhat interested in obtaining additional information from parents (Wodrich, et al., 2011). To examine what factors may influence this relationship the current study manipulated the amount of information provided by parents in a letter to the teacher and thereby changed the perception of the knowledge of the parent. It was hypothesized that parents who were perceived as more knowledgeable about epilepsy and its impact in the school environment would be sought out for additional information more often than parents perceived as not knowledgeable. Overall, this hypothesis was not supported. No significant difference was found between the three levels of perceived parent knowledge. In fact, approximately 95% of teachers who completed the survey indicated that they were "somewhat likely" or "very likely" to contact the parent who

wrote the letter for more information about epilepsy. The remaining 5% of teachers reported the likelihood of seeking out information from the parents as “somewhat unlikely” or “may or may not.” This unexpected finding may be due to the fact that parent-teacher communication was initiated by the parent in the form of a letter. It is possible that any amount of communication from a parent regarding a student’s diagnosis of epilepsy will lead to an increased likelihood of return contact from the teacher.

The second research hypothesis in this study aimed to determine if there was an interaction effect between perceived parent knowledge and teacher confidence on the likelihood of contacting parents for additional information. Specifically, it was anticipated that teachers reporting low levels of confidence when handling situations related to a student with epilepsy would be highly likely to contact a parent for more information regardless of how knowledgeable the parent appeared to be. Teachers reporting higher levels of confidence on the other hand, were expected to report differing likelihood of contacting parents for additional information based on the perception of how knowledgeable the parent appeared. Specifically, it was expected that parents who appeared more knowledgeable would be sought out for information more often than parents who were viewed as less knowledgeable. However, this hypothesis was not supported by the current data. The relationship between perceived parent knowledge and teacher contact did not change as teacher confidence increased. Teachers at all levels of confidence reported very high likelihood of contacting parents regardless of how knowledgeable the parent appeared. Like the previous hypothesis, this finding may be the result of the initial contact being made by the parent. This relationship has not been

examined in previous research. Limitations of drawing conclusions from this result will be discussed below.

The relationship between perceived parent knowledge and teacher communication across teacher knowledge levels was examined through the third hypothesis. Teachers who possessed little previous knowledge were expected to report high likelihood of seeking information from parents regardless of how knowledgeable the parent appeared. However, teachers already able to answer many knowledge questions correctly were expected to be more likely to seek additional information from very knowledgeable parents than from parents perceived as not very knowledgeable. This expectation was not held up by the current data. Teachers at all levels of prior epilepsy knowledge reported a high likelihood of seeking information from parents who were perceived as both very knowledgeable and not very knowledgeable about epilepsy. This finding may be due to the fact that, despite some teachers being more knowledgeable than others, the average number of questions answered correctly was less than ten out of 25 with a minimum of one correct answer and a maximum of 20 correct responses. While there was variability in the prior epilepsy knowledge level in the current sample, the overall low level of knowledge possessed by teachers may lead to high levels of information seeking behavior from any source that appears readily available. In the case of this study, parents appeared quite available across all levels of apparent knowledge. Anecdotally, two of the three teachers who indicated a low likelihood of seeking information from the parent in the letter (indicating a rating of 2 or 3 on a 5-point Likert-type scale) answered more knowledge questions correctly than the sample did on average (i.e., 15 and 19 questions

answered correctly out of 25). This may suggest that, with additional data collection, there could be a significant relationship between teacher knowledge and parent contact. While this interaction has not been examined by previous studies and constitutes new information, the limitations of this finding will be discussed below.

The final hypothesis for this study targeted the relationship between parent socio-economic status and teachers' willingness to seek information from the parents. This hypothesis suggested that teachers instructing in schools serving mainly low socio-economic areas would be less likely to contact parents for additional information than would teachers in higher socio-economic areas. Contrary to previous research findings indicating that low socio-economic status parents are less likely to be involved and included in educational conversations and decision making with school staff than parents of high socio-economic status (Lareau, 2003), this hypothesis was not supported. Teachers in both low and middle socio-economic schools reported high likelihood of contacting a parent for more information about epilepsy in response to a parent letter. This discrepancy in expectation and reality may be the result of the parent in the current hypothetical situation making the initial contact with the teacher. The previous work by Lareau (2003) indicated that parents of lower socio-economic status are less likely to initiate communication with teachers and less likely to offer unsolicited advice. The difference in "expected" behavior by a parent in a low socio-economic setting and what was actually presented in the current study may have had a significant impact on the current results regarding this hypothesis.

Teachers in the current study indicated a likelihood of seeking information from parents at much higher rates than anticipated. There are several possible explanations for this finding which occurred across all four study hypotheses. First, comprehensive school reform has shifted the educational perspective with respect to parent involvement in the educational process. There is now a greater emphasis on home-school collaboration and inclusion of parents in the school team (Seitsinger, Felner, Brand, & Burns, 2008). This shift in perspective may account for the overall greater likelihood of parent-teacher communication reported across the current sample.

In addition to this theoretical perspective shift, there is a strong emphasis in educational laws regarding the requirement that parents be a part of the school team involved in special education decision making (IDEIA, 2004). It is possible that this mentality has filtered down to general education teachers as they also participate in these educational teams and interact more with parents. In addition to these potential explanations, there is a high likelihood that teachers involved in the current research study were aware of the major objective of the study and reported a high likelihood of communicating with parents for social desirability reasons. Teachers were provided with a cover letter which included the title of the study as well as information regarding the overall purpose of the study. The title of the current study clearly highlights that the main focus of the study is parent-teacher communication. With regard to the design of the study, the question examining parent contact was purposely embedded within a table of nine other potential resources to make the intent somewhat less obvious. Despite this tactic, teachers were

likely very cognizant that communication with the parent who provided the letter was of greatest importance.

Supplemental analyses

Several supplemental analyses were conducted to examine additional relationships between variables gathered in the current survey that were not directly related to the four study hypotheses. An additional purpose for conducting many of these supplemental analyses was to seek replication of previous findings obtained using many of the same study materials. Among these previous findings were that (1) teachers who were currently teaching a student with epilepsy were more knowledgeable and confident about epilepsy than teachers not teaching a student with epilepsy, (2) current special education teachers are more knowledgeable and confident than general education teachers, and (3) that the relationship between knowledge and confidence is significant and positive.

With regard to epilepsy knowledge, the current study found that teachers who reported that they were currently teaching a student with epilepsy answered significantly more questions correctly than did teachers who were not currently teaching a student with epilepsy. In addition, teachers who were currently teaching special education classes also obtained higher knowledge scores than their general education colleagues. These results are consistent with the findings of Wodrich, et al., (2011). However, further analysis revealed that the difference in knowledge level between teachers currently teaching a student with epilepsy and those not teaching a student with epilepsy was no longer significant when special education teaching experience was statistically controlled for.

This finding suggests that when the variance attributable to special education experience was controlled for, there was not be a significant difference between the knowledge of teachers who were currently teaching a student with epilepsy and those who were not. This is contrary to the findings of Wodrich, et al., (2011) who found a significant difference between these two groups of teachers even when special education experience was controlled for. It should be noted that with the small sample size of the current study, limited power may be a significant contributing factor to these findings. It is also important to point out that of the ten participants who indicated that they were currently teaching a student with epilepsy, five were also currently teaching special education. This overlap in groups may account for this conflicting data. A larger sample size including more participants in each of these groups and reducing the amount of overlap may lead to different results. On the other hand, it is quite possible that special education teachers are more likely to have greater experience teaching students with epilepsy because of the likelihood of these students requiring special education services.

With regard to supplemental analyses relating to teacher confidence in working with students with epilepsy, teachers in the current sample who were teaching a student with epilepsy reported overall higher levels of confidence than those teachers who were not currently teaching a student with epilepsy. This finding supports previous results from Wodrich, et al., (2011). However, current special education teachers did not report higher levels of confidence than general education teachers. This finding is contrary to the results found by Wodrich, et al. (2011). It should be noted that these two groups did exhibit a non-statistically significant difference in confidence level in the expected

direction. Special education teachers reported higher overall confidence (mean = 3.7) than general education teachers (mean = 3.2). With such the small sample size in the current study it is possible that the few special education teachers (n = 10) who participated in this study did not compose a large enough group to result in a statistically significant difference.

The final statistical supplemental analysis examined the relationship between teacher knowledge about epilepsy and teacher confidence in working with students with epilepsy. As with previous studies, this relationship was significant and positive (Wodrich, et al., 2011). Teachers reporting higher confidence also answered more knowledge questions correctly. It is not possible to say for certain if increased knowledge leads to higher confidence. However, increased knowledge has been shown to decrease negative perceptions and beliefs about individuals with epilepsy (Bekiroğlu, et al., 2004) and increased knowledge in teachers specifically has been shown to be associated with better attribution of problem behaviors (Wodrich, 2005) and more appropriate classroom accommodations (Wodrich & Spencer, 2011). It is possible that increasing teacher knowledge may increase confidence in addition to providing these other positive effects. Further studies utilizing pre- and post-test designs as well as control groups would help better understand this association.

The final supplemental analysis focused on the qualitative information provided by teachers about the types of information they would seek from the parents of a student with epilepsy. Teachers reported an interest in gathering more information related to the child's seizure activity, any triggers or warning signs, what should be done during a

seizure, medical history, and social and emotional functioning. This finding is congruent with previous research regarding the information related to epilepsy that teachers would like to become more familiar with (Bannon et al., 1992; Bishop & Boag, 2006). This information could be used to create questionnaires or template forms including information for parents to present to teachers at the beginning of each school year to help facilitate the parent-teacher communication that is so important in these situations.

Study Limitations

One significant limitation of the current study is small sample size. This study consisted of 57 participants from five schools. The sample varied in grade level (kindergarten through 8th grade), socio-economic status, and special education background. While the study sample was small, the group was heterogeneous and responses to the dependent variable were overwhelmingly positive with almost no variance reported. Groups who were expected to respond more negatively to the dependent variable (i.e., teachers in low socio-economic areas, and teachers who perceived the parent in the sample letter as not well informed) were well represented in the current sample. However, these teachers did not provide responses as expected. Additional studies should seek to find variables that will lead to more variance in the likelihood that teachers will seek information from parents. This will be discussed in more detail in the following section.

Another potential limitation of this study was the incongruence between the researcher's perception of the hypothetical parent knowledge and teachers' perceptions. While there was a significant correlation between these ratings, nearly half of participants

disagreed with the knowledge level originally assigned to the parent letter. The use of vaguely defined terms to rate parent knowledge level (i.e., “not well informed,” “somewhat informed,” and “very well informed”) likely impacts the reliability of these ratings. This limitation will be discussed further in the next section.

Future directions

Future studies should be done to more thoroughly examine parent-teacher communication as it relates to students with epilepsy. While the current findings suggest that teachers are very open to communicating with parents about epilepsy if the parent initiates the contact with any form of letter, previous research indicates that this communication is not actually occurring as often as would be ideal (Baker, et al., 2008; Wodrich, et al., 2011). Additional parent, teacher, and even student variables should be examined to better understand this relationship. Examining this relationship from the perspective of parents would likely shed some light on additional potential barriers to this communication. There likely are many parent and student factors that limit parents’ willingness to inform teachers about an epilepsy diagnosis. However, additional studies are needed to further understand the impact of these factors. Because the current study shows that teachers respond positively to any communication from parents, future studies should aim to determine what may limit this communication from the parent side. Additionally, there may be aspects of the epilepsy diagnosis including seizure type, treatment effectiveness, and frequency that may impact the amount of communication that parents engage in with teachers regarding the diagnosis. This relationship has been examined to some extent (Bush, 2011).

One of the supplemental analyses conducted in this study examined the difference in the likelihood that teachers in the current sample would contact parents for information about epilepsy compared to teachers in a previous study. Teachers in the previous study were not provided with any form of contact regarding a student in their classroom but were asked where they would prefer to get information about epilepsy in the future. These teachers indicated significantly lower likelihood of contacting parents for this information. Future research should study this difference more thoroughly. A study could be done using the current methodology and including a control group in which teachers receive notification from an individual other than a parent regarding a student in their class having epilepsy. This study design would allow more inferences to be drawn about where teachers would seek information if a parent was not the primary informant.

Another potential study design which may be used to examine teacher behaviors in response to learning of an epilepsy diagnosis in a more realistic manner could involve presenting teachers with a “student information form” including information typically provided by parents at the beginning of the school year (i.e., emergency contact information, medical information, etc.) Following this information, teachers would be asked what additional information they would want to find out about the student and from where or who they would seek this information. Information sheets could differ on what, if any, medical diagnoses were indicated by the parent. This study design could serve an additional purpose of examining differing teacher behaviors based on different medical diagnoses. For example, do the sources that teachers use to gather additional information

differ between primarily medical diagnoses (i.e., epilepsy, diabetes, etc) and diagnoses that may be considered less medical (i.e., ADHD, OCD, etc)?

Finally, additional research examining what constitutes a “knowledgeable” or “well informed” parent would be valuable for future studies. One of the significant limitations of the current study was the difference between the researcher’s perception of parent knowledge level and teachers’ perceptions of parent knowledge level. Of the 20 teachers who were given a survey originally intended to represent a “very well informed” parent, only eight teachers rated the parent at the same perceived knowledge level. This limitation may have been well addressed through the use of a pilot study to examine researcher and teacher agreement on the level of parent knowledge perceived in the provided vignettes. In addition, some further research to better define the construct of parent knowledge in the eyes of teachers would be beneficial. This would allow future studies to more reliably examine the impact of this variable. In addition, better defining this construct may have some beneficial real world implications. This may lead to a better understanding of what information teachers expect parents to be able to provide which may allow parents to better anticipate teachers’ questions and prepare information prior to the beginning of a new school year.

REFERENCES

- Achenbach, T. M. (1991). *Manual for Child Behavior Checklist/ 4-18 and 1991 Profile*. Burlington, VT: University of Vermont, Dept. of Psychiatry.
- Baker, G. A., Hargis, E., Hsieh, M. M., Mounfield, H., Arzimanoglou, A., Glauser, T.,...Lund, S. (2008). Perceived impact of epilepsy in teenagers and young adults: An international survey. *Epilepsy & Behavior, 12*, 395-401.
- Barrett, R. P., & Sachs, H. T. (2006). Epilepsy and Seizures. In L. Phelps (Ed.), *Chronic health-related disorders in children: Collaborative medical and psychoeducational interventions* (91-110). Washington, DC, US: American Psychological Association.
- Bartolini, E., Bell, G. S., & Sander, J. W. (2011). Multicultural challenges in epilepsy. *Epilepsy & Behavior, 20*, 428-434.
- Bekiroğlu, N., Özkan, R., Gürses, C., Arpacı, B., & Dervent, A. (2004). A study on awareness and attitude of teachers on epilepsy in Istanbul. *Seizure, 13*, 517-522.
- Bishop, M., & Boag, E. M. (2006) Teachers' knowledge about epilepsy and attitudes toward students with epilepsy: Results of a national survey. *Epilepsy & Behavior, 8*, 397-405.
- Black, K. C., & Hynd, G. W. (1995). Epilepsy in the school aged child: Cognitive-behavioral characteristics and effects on academic performance. *School Psychology Quarterly, 10*, 345-358.
- Brown, R. T., & DuPaul, G. J. (1999). Introduction to the mini-series: Promoting school success in children with chronic medical conditions. *School Psychology Review, 28*, 175-181.
- Bush, V. (2011). *Parent-teacher communication regarding epilepsy: To disclose or not to disclose*. (Master's thesis). Arizona State University, Tempe, AZ.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. New York, NY: Routledge.
- Cunningham, M. M., & Wodrich, D. L. (2006). The effect of sharing health information on teachers' production of classroom accommodations. *Psychology in the Schools, 43*, 553-564.
- Green, S. B., & Salkind, N. J. (2008). K independent-samples tests: The Kruskal-Wallis and the median tests. In J. Marshall (Ed.), *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (pp. 383-394). Upper Saddle River, NJ: Pearson Education, Inc.

- Katzenstein, J. M., Fastenau, P. S., Dunn, D. W., & Austin, J. K. (2007). Teachers' ratings of the academic performance of children with epilepsy. *Epilepsy & Behavior, 10*, 426-431.
- Kerns, L., & Clemens, N. H. (2007). Antecedent strategies to promote appropriate classroom behavior. *Psychology in the Schools, 44*, 65-75.
- Kwong, K.L., Wong, S. N., & So, K. T. (2000). Parental perception, worries and needs in children with epilepsy. *Acta Paediatr, 89*, 593-596.
- Lee, H., Lee, S. K., Chung, C. K., Yun, S, N., & Choi-Kwon, S. (2010) Familiarity with knowledge of, and attitudes toward epilepsy among teachers in Korean elementary schools. *Epilepsy & Behavior, 17*, 183-187.
- Miller, V., Palermo, T. M., & Grewe, S. D. (2003). Quality of life in pediatric epilepsy: demographic and disease-related predictors and comparison with healthy controls. *Epilepsy & Behavior, 4*, 36-42.
- Nabors, L. A., & Lehmkuhl, H. D. (2004). Children with chronic medical conditions: Recommendations for school mental health clinicians. *Journal of Developmental and Physical Disabilities, 16*, 1-15.
- Nabors, L. A., Little, S. G., Akin-Little, A., & Iobst, E. A. (2008). Teacher knowledge of and confidence in meeting the needs of children with chronic medical conditions: Pediatric psychology's contribution to education. *Psychology in the Schools, 45*, 217-226.
- Power, T. J. (2006). Collaborative practices for managing children's chronic health needs. In L. Phelps (Ed.), *Chronic health-related disorders in children: Collaborative medical and psychoeducational interventions* (91-110). Washington, DC: American Psychological Association.
- Seitsinger, A. M., Felner, R. D., Brand, S., Burns, A. (2008). A large-scale examination of the nature and efficiency of teachers' practices to engage parents: Assessment, parental contact, and student-level impact. *Journal of School Psychology, 46*, 477-505.
- Speigel, G. L., Culter, S. K., & Yetter, C. E. (1996). What every teacher should know about epilepsy. *Intervention in School and Clinic, 32*, 34-48.
- Wodrich, D. L. (2005). Disclosing information about Epilepsy and Type 1 Diabetes Mellitus: The effect of teachers' understanding of classroom behavior. *School Psychology Quarterly, 20*, 288-303.

- Wodrich, D. L., Jarrar, R., Buchhalter, J., Levy, R., & Gay, C. (2011). Knowledge about epilepsy and confidence in instructing students with epilepsy: Teachers' responses to a new scale. *Epilepsy & Behavior, 20*, 360-365.
- Wodrich, D. L., Kaplan, A. M., & Deering, W. M. (2006). Children with epilepsy in school: Special service usage and assessment practices. *Psychology in the Schools, 43*, 169-181.
- Wodrich, D. L., & Spencer, M. L. S. (2007). The Other Health Impairment category and health-based classroom accommodations. *Journal of Applied School Psychology, 24*, 109-125.
- Woodcock, R. W., & Mather, N. (1989, 1990). *WJ-R tests of achievement: Examiner's manual*. In R.W. Woodcock & M.B. Johnson, *Woodcock-Johnson psycho-educational battery-revised*. Allen, TX: DLM Teaching Resources.

APPENDIX A
CASE VIGNETTES

Level 1: Not Informed Parent Vignette

Dear Mr./Mrs. Smith,

My child, Casey, will be in your class this school year. I just wanted to let you know that Casey has epilepsy. This may interfere with some classroom performance. I know there are some websites that have information for teachers about epilepsy in students but I am not very familiar with the information myself.

If you have questions you are more than welcome to contact me.

Sincerely,

Mr./Mrs. Jones

Level 2: Somewhat Informed Parent Vignette

Dear Mr./Mrs. Smith,

My child, Casey, will be in your class this school year. I just wanted to let you know that Casey has epilepsy. This may interfere with some classroom performance. I know there are some websites that have information for teachers about epilepsy in students (epilepsyfoundation.org, etc). I have read through some of the information on these websites so I know some of the information that might be relevant.

If you have questions you are more than welcome to contact me.

Sincerely,

Mr./Mrs. Jones

Level 3: Well Informed Parent Vignette

Dear Mr./Mrs. Smith,

My child, Casey, will be in your class this school year. I just wanted to let you know that Casey has epilepsy. This may interfere with some classroom performance. I know there are some websites that have information for teachers about epilepsy in students (epilepsyfoundation.org, epilepsy.com, etc). I have read through many of these websites and done some additional research on how epilepsy affects school performance (attention problems, learning problems, etc). I'm certainly not an expert but I have taken some detailed notes from these sources and from the information provided by Casey's pediatrician and neurologist. I also know a lot about how Casey's epilepsy has impacted his schooling in the past.

If you have questions you are more than welcome to contact me.

Sincerely,

Mr./Mrs. Jones

APPENDIX B

LIKELIHOOD OF CONTACTING PARENTS SURVEY ITEM

Based on the information provided by this parent how likely are you to seek information from each of the following sources?

	1 Very Unlik ely	2 Somewh at Unlikely	3 May or May Not	4 Somewh at Likely	5 Ver y Lik ely
From a website devoted to epilepsy	1	2	3	4	5
From other teachers	1	2	3	4	5
From a school nurse	1	2	3	4	5
From parents of a student with epilepsy	1	2	3	4	5
From readings and manuals devoted to epilepsy	1	2	3	4	5
From workshops devoted to epilepsy	1	2	3	4	5
From presentations to teachers by medical personnel	1	2	3	4	5
From a student with epilepsy	1	2	3	4	5
From college/university course(s) during teacher preparation	1	2	3	4	5
From other resources: Please specify:	1	2	3	4	5



APPENDIX C

ARIZONA STATE UNIVERSITY IRB APPROVAL LETTER



Office of Research Integrity and Assurance

To: Juliet Hart

From:  Mark Roosa, Chair 
Soc Beh IRB

Date: 02/25/2013

Committee Action: Exemption Granted

IRB Action Date: 02/25/2013

IRB Protocol #: 1302008867

Study Title: Factors Influencing Teacher-Driven Paren-Teacher Communication About Students With Epilepsy

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX D
TEACHER CONSENT LETTER

**Factors Influencing Teacher-Driven Parent-Teacher
Communication About Students With Epilepsy**

Dear Teacher:

I am a graduate student under the direction of Dr. Juliet Hart in the Division of Teacher Prep at Arizona State University.

I am conducting a research study to examine parent-teacher communication regarding students with epilepsy. I am inviting your participation, which will involve completing the attached questionnaire. Completion is expected to take approximately 10-15 minutes. After completing and returning the questionnaire you will have the opportunity to be entered into a raffle for one of two \$10 gift cards.

Your participation in this study is voluntary. You can skip questions if you wish. If you choose not to participate or to withdraw from the study at any time, there will be no penalty.

While there is no immediate direct benefit for your participation the knowledge gained from this study may be used to improve information provided to teachers about epilepsy and to make this information more readily accessible. Information gathered during this study may also benefit students with epilepsy and their parents by improving parent-teacher interactions and the overall educational experience of these students. There are no foreseeable risks or discomforts to your participation.

Your responses will be anonymous. Please do not include any identifying information when completing the questionnaire. The results of this study may be used in reports, presentations, or publications but will not include any identifying information of participants.

If you have any questions concerning the research study, please contact the research team at: 770-301-7273 (Catherine Gay) or 602-543-6410 (Dr. Juliet Hart). If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Return of the questionnaire will be considered your consent to participate.

Sincerely,

Catherine Gay, M.A.

PhD Candidate

Mary Lou Fulton Teachers' College

Dr. Juliet Hart, PhD.

Associate Professor

Division of Teacher Prep

Table 1
Demographic characteristics of survey sample

Demographic	Frequency	Percentage
Age		
< 25 years	6	10.5
26-35 years	18	31.6
36-45 years	17	29.8
46-55 years	11	19.3
>55 years	5	8.8
Gender		
Male	1	1.8
Female	56	98.2
Special Education Experience		
Some	20	35.1
None	37	64.9
Currently Teaching Special Education		
Yes	10	17.5
No	47	82.5
School Setting		
Elementary	38	66.7
Middle/Junior High	17	29.8
Unknown	2	3.5
Education Level		
Bachelor's degree	25	43.9
Master's degree	30	52.6
>Master's degree	2	3.5
Socio-Economic Status		
Low	40	70.2
Middle-High	17	29.8
Current Teaching a Student with Epilepsy		
Yes	10	17.5
No	47	82.5

Table 2

Knowledge item content

Item concerns the following fact
1. Emotional impact of classroom seizure on classmates and patient
2. Potential eligibility for “other health impairment” special education services
3. Missed medication as seizure trigger
4. Risk of social isolation
5. How to calm classmates’ who have witnessed a seizure
6. Nature of partial seizure
7. Acceptable accommodations in classroom
8. Acceptable accommodations at physical education
9. Access to resource special education services
10. Potential eligibility for 504 accommodation plan
11. Risk of attention problems
12. AEDs and sedation
13. Risk of memory problems
14. Risk of slowed thinking
15. Risk of depressive feelings
16. Nature of generalized seizure
17. Nature of status epilepticus
18. Nature of absence (petit mal) seizure
19. Photosensitivity as seizure trigger
20. AED side effects
21. Risk of classroom learning problems
22. Therapeutic effects of AEDs
23. Risk of seizures-related embarrassment
24. Teachers’ emergent response during brief seizure
25. Teachers’ emergent response during prolonged seizure

Table 3
Confidence Item Content

Item
1. Ability to manage emotional adjustment of student with epilepsy
2. Ability to manage classmates' fear during seizures
3. Ability to insure patient's safety during seizures
4. Ability to create classroom accommodations for student with epilepsy
5. Ability to recognize AED side effects and their learning impact
6. Ability to determine need for outside (school) resources
7. Ability to determine barrier to classroom progress
8. Ability to minimize post-seizure embarrassment for patient
9. Ability to handle classmates' post-seizure questions
10. Ability to judge need for medical help during seizure
11. Ability to describe seizure to medical personnel
12. Ability to refocus classmates after a seizure
13. Ability to judge if seizure is occurring in class
14. Ability to determine proper safety precautions

Table 4

Frequency and percentage of current special education and general education teachers across school levels.

School Level	Special Education	General Education	N
Elementary	7 (18.4%)	31 (81.6%)	38
Middle	3 (17.6%)	14 (82.4%)	17

Table 5

Frequency and percentage of current special education and general education teachers across socio-economic levels.

Socio-Economic Level	Special Education	General Education	N
Low	9 (22.5%)	31 (77.5%)	40
Upper-middle	1 (5.9%)	16 (94.1%)	17

Table 6

Frequency and percentage of current special education and general education teachers currently teaching a student with epilepsy and not teaching a student with epilepsy.

Currently Teaching a Student with Epilepsy	Special Education	General Education	N
Yes	5 (50%)	5 (50%)	10
No	5 (10.6%)	42 (89.4%)	47

Table 7

Correlations between number of correct knowledge items, overall average confidence, and preference for information from parents.

		Parents	Knowledge	Confidence
Parents	Pearson Correlation	1	-.068	-.045
	Sig. (1-tailed)		.614	.738
	N	57	57	57
Knowledge	Pearson Correlation	-.068	1	.296*
	Sig. (1-tailed)	.614		.013
	N	57	57	57
Confidence	Pearson Correlation	-.045	.296*	1
	Sig. (1-tailed)	.738	.013	
	N	57	57	57

*Correlation is significant at the .05 level (2-tailed).

Table 8

Key words used to code qualitative responses to the open-ended question regarding the type of information sought from parents.

Category	Key words
Triggers or warning signs	Trigger Warning sign Predictors
Academic concerns	School problems Academic
Social/behavioral concerns	Friends Peers Social Emotion Feelings Behavior Motivation Relationships
Appropriate response to seizures	Precautions Seizure plan Plan Safety
Medication	Medicine Medication Drugs Pills
Seizure information	Look Appearance Frequency Duration Seizure description Seizure history
Medical history	Medical history Medical past Medical background Medical information