TRAUMATIC BRAIN INJURY: SCHOOL PSYCHOLOGIST
TRAINING, KNOWLEDGE AND SKILLS

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TRAUMATIC BRAIN INJURY: SCHOOL PSYCHOLOGIST TRAINING,
KNOWLEDGE AND SKILLS

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ABSTRACT

TRAUMATIC BRAIN INJURY: SCHOOL PSYCHOLOGIST TRAINING,
KNOWLEDGE, AND SKILLS

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Students who have sustained traumatic brain injuries (TBI) are often not identified appropriately in school systems. School psychologists serve an important role in identifying and providing appropriate school-based services for students with TBI. The purpose of this study was to evaluate school psychologists’ readiness to provide assessment, intervention, and reintegration services for students with TBI by exploring their knowledge, skills, and training related to TBI. Data was collected through a knowledge survey and self-reported skills/qualifications. Results indicated that school psychologists with training in TBI had significantly more knowledge about TBI compared to school psychologists without training, but the school psychologists with training did not rate themselves as having significantly more skills. By finding out what school psychologists know regarding TBI, more effective training plans may be implemented.
ACKNOWLEDGEMENTS

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INTRODUCTION

TRAUMATIC BRAIN INJURY: SCHOOL PSYCHOLOGIST TRAINING, KNOWLEDGE AND SKILLS

Chris had just finished kindergarten when he fell off of his bike and hit his head on the cement sidewalk. He was unconscious for 20 minutes postinjury, and the doctors told his family he suffered a mild to moderate traumatic brain injury. The fall occurred during the summer and Chris’s parents were relieved when he seemed to “bounce back” that fall in the school setting. No academic or behavior concerns were noted.

Two and a half years later, Chris demonstrates inattentive behavior and is easily frustrated at school. He does not seem to grasp concepts in the classroom as quickly as the other children. Chris’s teacher consults with the school psychologist, who is unaware of Chris’s medical history. The school psychologist conducts a record review but does not find documentation of his traumatic brain injury. While interviewing Chris’s mother, the school psychologist asks about Chris’s medical history and finds out about his biking accident two years ago. The team conducts an assessment, including a cognitive test, observations, and a record review of health and academics. They take into consideration his medical background, and now Chris’s behavior can be accurately assessed and the team can develop interventions and strategies to improve his academic and behavioral performance.
Chris’s situation is one of millions of traumatic brain injuries each year (Langlois, Rutland-Brown, & Thomas, 2005). When head injuries occur, academic and behavioral may symptoms surface months or years later. Traumatic brain injury (TBI) is defined as a brain injury resulting from an external force that causes disability and/or impairment (U.S. Department of Education, 2004). In 1990, the Individuals with Disabilities Education Act (IDEA) recognized traumatic brain injury (TBI) as a disability group. According to IDEA, a TBI is defined as:

...an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child’s educational performance. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual, and motor abilities; psycho-social behavior; physical functions; information processing; and speech. The term does not apply to brain injuries that are congenital or degenerative, or to brain injuries induced by birth trauma.” [34 Code of Federal Regulations §300.8(c)(12)].

The occurrence rate of children in the United States who sustain a TBI is overwhelming: more than 1 million children and adolescents sustain a TBI annually, resulting in approximately 150,000 hospitalizations and 5,000 deaths (Langlois, Rutland-Brown, & Thomas, 2005). Glang, Tyler, Pearson, Todis, and Morvant (2004) estimate more than 130,000 children with TBI have functional limitations significant enough to receive special education services. Data from 2007 indicate only 23,805 students received special education services under the TBI category (IDEA).

The discrepancy between the number of TBIs and the number of students being served for TBI poses a problem for schools. There are several possible causes for this discrepancy: (a) the majority of the TBI injuries are mild and do not require school services; (b) students with a TBI are being served under other disability category labels;
(c) children who sustain a TBI are not taken to the hospital and go unidentified; and (d) school personnel (e.g. teachers, school psychologists, and pupil personnel) do not have the knowledge and training to recognize TBI, therefore the student is not receiving individualized services.

This study will focus on the last cause for the discrepancy, specifically school psychologist’s knowledge and training in TBI. Students with TBI have a wide range of individualized needs and display unique patterns of deficit and of improvement, making the TBI identification process difficult. Also, the school may have misconceptions of the student’s injury and may not being given enough information about the injury. This can lead to mislabeling (e.g., ADHD), and the student may find it difficult to reintegrate into the school system (Hux, Walker, & Sanger, 1996). Insufficient training and knowledge not only increases problems in identification and misclassification, but also improper education plans and misguided consultation, assessment, program evaluations, and interventions for students with TBI.
LITERATURE REVIEW

Traumatic Brain Injury

A traumatic brain injury (TBI) can be classified as mild, moderate, or severe. Moderate and severe TBI is likely to result in negative outcomes than a mild TBI (Babikian & Asarnow, 2009; Taylor et al., 2008; Yeates, 2000); however, there is potential for negative effects within all classifications of TBI. TBIs can produce deficits in (a) alertness and orientation, (b) intellectual functioning, (c) language skills, (d) nonverbal skills, (e) attention and memory, (f) corticosensory and motor skills, (g) academic functioning, (h) executive functions, and (i) adaptive functioning and behavioral adjustment (Yeates, 2000). The extent of the deficit and potential sequelae may be related to the severity of the injury, the brain structure injured, premorbid functioning, and environmental factors such as socioeconomic status (Yeates & Taylor, 2006).

Studies on mild TBIs often show mixed findings. For example, among pre-school children, mild TBI is the leading cause of injury and is associated with long-term deficits in psychosocial development (McKinlay, Grace, Horwood, Fergusson, & Macfarlane, 2009). However, in a meta-analysis of mild TBI studies, individuals with mild TBIs showed little to no impairment in the cognitive domains reviewed at any time point after the injury (Babikian & Asarnow, 2009). In a clinical setting, mild TBIs may often be referred to as concussions (DeMatteo et al., 2010).
**Moderate and severe TBI.** Moderate TBIs may result in deficits in intellectual functioning and processing speed. Two years postinjury, children with moderate TBI have shown modest recovery but are not caught up with same-age peers (Babikian & Asarnow, 2009). However, memory skills and visual perceptual skills are generally analogous to same-age peers. Children with severe TBI show significantly more functional deficits than other TBI injuries (Fay et al., 2009). Immediately following severe TBI, children may need assistance with basic functional skills (Yeates & Taylor, 2006). Physical problems may surface such as difficulty balancing, walking, speaking, seeing, hearing, and using the senses (Katz-Leurer, Rotem, Lewitus, Keren & Meyer, 2008). Headaches and fatigue are common, and children may have trouble with fine motor skills such as writing or drawing (Babikian & Asarnow, 2009).

Research has shown persistent neuropsychological sequelae in emotional, behavioral, adaptive functioning, and academic performance (Yeates & Taylor, 2006). In a meta-analysis of severe TBIs in children, significant impairments were shown in intellectual functioning, executive functioning, and working memory (Babikian & Asarnow, 2009). Often these deficits persist years after recovery (Fay et al., 2009).

General cognitive functioning typically decreases following a severe TBI (Allen, Thaler, Donohue, & Mayfield, 2010; Gerrard-Morris et al., 2010). Performance IQ on the Wechsler Intelligence Scale for Children (WISC-IV) is particularly susceptible to TBI. Students with severe TBI may have an impaired ability to solve new problems, have trouble concentrating, and cognitive processes may be slow (Babikian & Asarnow, 2009).
Academic functioning in reading, math, writing, and spelling may also be affected. Students with severe TBI show poorer reading recognition, spelling, and arithmetic scores than students with moderate TBI (Ewing-Cobbs et al., 1998). Long-term deficits have been found in reading, spelling, and math for students with severe TBI (Bloom et al., 2000). In academic performance, children with severe TBI fail to catch up to same-age peers postinjury and continue to fall behind over time, although they do continue to make individual improvements (Yeates & Taylor, 2006).

Executive functioning can also be affected following a severe TBI, including deficits in working memory, processing speed/reaction time, attention, fluency, inhibition, and problem solving (Babikian & Asarnow, 2009, Conklin, Salorio, & Slomine, 2008; Yeates et al., 2005). Executive functioning is the coordination of storing and processing memories, retrieving and reflecting upon information from long-term memory, and binding and translating information into coherent episodes (Baddeley, 2000; Salthouse, 1991). Deficits in executive function that occur in association with TBI can lead to long-term behavioral attention problems, emerging in the subsequent years following a TBI (Yeates et al., 2005). Yeates and Taylor (2006) found that children with severe TBI display significant attention problems four years postinjury compared to children with orthopedic injuries.

Psychosocial and maladaptive behavioral functioning in students with severe TBI also becomes present postinjury. Socially, a student with TBI may experience emotional or behavioral problems. A meta-analysis of the research on TBIs showed students may experience mood changes, increased anxiety, depression, decreased motivation, and
impaired general adaptive functioning (Babikian & Asarnow, 2009). Psychosocial and behavioral difficulties may lead to problems in academic and cognitive functioning.

Children with severe TBI may exhibit a delayed onset of significant behavioral and adaptive problems (Yeates & Taylor, 2006). These impairments may surface anywhere from 6 months to 4 years post-injury (Fay et al., 2009). Recovery from a brain injury is a developmental process, so new impairments may emerge over time. Two years post-injury, children with severe TBI may begin to experience deficits in visual immediate memory, visual perceptual functioning, and inhibition (Ganesalingam, Yeates, Sanson, & Anderson, 2007). They may also display poor social problem-solving skills with increased aggression and less self-regulation. Behavioral, adaptive, and academic impairments may fail to resolve in the long-term for children with severe TBI, even if improvements are shown in the first year (Anderson et al., 2005). While intellectual functioning and executive functioning (processing speed and attention) may be immediately affected following a TBI, impairments in working memory, problem solving, fluency, and verbal memory emerge around 2 years postinjury (Babikian & Asarnow, 2009).

Factors affecting severity. The age of injury is an important factor to be considered because the causes of TBI tend to vary with age (Duhaime, Christian, Rorke & Zimmerman, 1998). Child abuse, or ‘shaken baby syndrome’, is a frequent cause of TBI in infants. In early childhood, children tend to experience more falls, and by middle childhood, children experience more bicycle/pedestrian-motor vehicle accidents. During late childhood and moving into early adolescence, the most frequent and severe cases of TBI occur because of motor vehicle, sport, and recreational accidents.
Chris’s story exemplifies the developmental process for emerging academic impairments. Research has shown children ages 2 to 7 at the time of the TBI are more susceptible to deficits in expressive language, attention, and academic achievement (Anderson et al., 2005). Younger children recover more quickly from TBI than older children or adolescents; however, because recovery occurs during the developmental process, new impairments may emerge with time. In a longitudinal study of preschool aged children, the younger preschoolers (less than age 4) had significantly more deficits at age 8 in social, cognitive, and physical outcomes compared to older preschoolers (Sonnenberg, Dupuis, & Rumney, 2010). Often, academic and behavior deficits do not emerge until years after the injury. Emerging impairments make it difficult to assess the severity of the injury and develop early interventions for young children.

An examination of the location of the TBI provides information on the extent of the deficits, the outcome of the injury, and possible sequelae. However, the brain damage acquired from a TBI is not restricted to a single region of the brain but affects a broad range of structures with overlapping functions (Bigler, 2007). When one brain structure or region sustains an injury, the entire brain network may be at risk for injury. Common regions for TBI in children are the prefrontal and temporal lobes, and research has shown the ventral striatum is also often susceptible to injury (Salmond, Chatfield, Menon, Pickard, & Sahakian, 2005). The prefrontal and temporal lobes are critical for social information processing, executive function, and social interaction. The ventral striatum is associated with other brain structures, such as the amygdala, thalamus, hippocampus, and regions of the prefrontal cortex. Damage to the ventral striatum may result in deficits in social cognition, memory, and executive function. Thus, the prefrontal lobes, temporal
lobes and the ventral striatum region are critical areas of the brain often injured in a TBI.

Premorbid functioning also contributes to the extent of TBI-related deficits (Arroyos-Jurado, Paulsen, Merrell, Lindgre, & Max, 2000; Yeates, et al., 2005). Yeates and colleagues (2005) showed childhood TBIs exacerbate premorbid problem behaviors (e.g. attention problems). In this study, children with premorbid symptoms and who sustained a TBI showed group differences in behavioral symptoms when compared to children who had also suffered a TBI but with fewer premorbid symptoms. Group differences were significantly larger for children with more premorbid symptoms than children with fewer premorbid symptoms. Premorbid functions are also significant predictors of underachievement in reading and spelling and maladaptive behavior in children who sustain TBIs (Arroyos-Jurado et al., 2000).

Race and gender contribute also to differences in childhood TBI occurrence. In a comparative study, the TBI death and hospitalization rates for African American children (ages 0-4) were nearly twice as those for white children. African American children (age 0-9) had higher death and hospitalization rates from car and traffic accidents (Langolis, Rutland-Brown, & Thomas, 2005). Gender studies show male children are more likely to sustain a TBI compared to female children by almost 2:1, particularly among children ages 5 to 14 (Kraus, 1995). The rate of female head injury declines after age 5, and the rate of male head injury increases after age 5.

Children with severe TBI will likely be affected for years following the injury, requiring ongoing intervention (Yeates & Taylor, 2006). School psychologists and other school personnel are required to assess and meet these students’ individualized needs postinjury. Thus, school psychologists must have the knowledge and training to provide
services for students with TBI.

Training, Knowledge, and Skills of School Psychologists Related to TBI

Significant differences exist between students with TBI and students with other disabilities. TBI is an acquired injury rather than a lifelong developmental disability; therefore, children with TBI may have increased psychological and psychosocial needs related to self-perception, decreased self-esteem, changes in learning style, and changes in life goals (Tucker & Colson, 1992). In fact, children with TBI rate themselves as less socially competent and lonelier than children without TBI (Andrews, Rose, & Johnson, 1998).

The school is an important place for the child’s recovery, especially as it relates to social and academic skills. The school is a place where socialization skills and academic skills are nurtured, and students are able to grow and develop. This recovery process is individualized to each student’s injury, and each student may show unique or overlapping characteristics with other students and disabilities (Arroyos-Jurado & Savage, 2008). Because of the long and evolving recovery period following a TBI, it is beneficial for schools to have the resources and knowledge to assist children with TBI.

School psychologists are important team members in reintegrating students, identifying students, providing consultation, and creating individualized education plans for students with TBI (Hooper, 2006). Several functions of school psychologists can be applied to working with students with TBI: (a) interpersonal and collaborative skills; (b) diversity awareness and sensitive service delivery; (c) technological application; (d) professional, legal, ethical, and social responsibility; (e) data-based decision making and
accountability; (f) systems-based service delivery; (g) enhancing the development of cognitive and academic skills; and (h) enhancing the development of wellness, social skills, mental health, and life competencies (Ysseldyke et al., 2006).

School psychologists should have preparatory training, developed skills, and a breadth of knowledge related to TBI. Currently, the discrepancy between the number of students who sustain a TBI and the number of students served under the TBI disability category in schools is disproportionate. As previously stated, only 23,805 students received special education services under the TBI category (IDEA, 2007) although estimates suggest more than 130,000 children with TBI have functional limitations significant enough to warrant special education services (Glang, Tyler, Pearson, Todis, and Morvant, 2004). One possible cause of this discrepancy is because school personnel (e.g. teachers, school psychologists, pupil personnel) do not have knowledge, skills, and training in recognizing the unique symptoms of a TBI. Therefore, the student is not receiving individualized services or may be receiving individualized services under another disability label.

**Training.** The training for a school psychologist should provide both skills and knowledge in TBI, and experiences build upon this training. Training is multi-functioned and continuously evolving. Typically a course is required in the area of biological bases of behavior, but there is not typically a course specifically devoted to TBI (Hooper, 2006).

Students and instructors are given the opportunity to address the individualized needs of students with TBI within this training. Formal training may include performing a clinical practicum with a survivor(s) of TBI, taking a college course devoted primarily
to TBI and its consequences, learning from mini-seminars of short in-services, taking college classes after the completion of the school psychology degree, or attending conferences such as short courses, seminars, and workshops devoted to TBI (Hux, Walker, & Sanger, 1996). School psychologists should also have training of current national special education laws (IDEA) for TBI. It is also appropriate for school psychologists to have a general understanding of how doctors diagnose and treat children with TBI in the hospital. Appropriate training will give school psychologists a knowledge base for working with students with TBI.

**Knowledge and skills.** Given the complexity of TBI injuries, sufficient knowledge related to TBI is essential in providing students with individualized care. Students with TBI have injuries that are specific and dependent upon the severity of the injury, location of the injury, premorbid functioning, and environmental factors (Yeates et al., 2005). School psychologists’ knowledge of prevalence, assessment, intervention services, recovery period, variability and individuality in TBI cases, and impaired processes will influence the services provided to the child after sustaining a TBI.

Assessing a child’s cognitive, academic, and behavioral functioning following a TBI is an important step for school psychologists. School psychologists have access to multiple assessment measures for students with TBI (Semrud-Clikeman, 2001). Assessment for each case of TBI should be individualized and based on the student’s needs and condition. The interpretation of such assessments should be individualized because the assessments often assume the student’s academic skills and knowledge is relatively intact (Ylvisaker et al., 2001). Assessments may be standardized and/or informal measures, and are often used in addition to interviews, record reviews, and
classroom observations of the student. Assessments are useful tools for hypothesis testing, developing interventions for the student, and for progress monitoring academic and behavioral functioning.

One of the primary roles of the school psychologist is to provide research-based interventions for students with disabilities. School psychologists are trained in finding and developing such interventions. Early intervention among pre-school children who sustain a TBI may be particularly effective because of students’ high vulnerability to deficits in the years following a TBI (McKinlay et al., 2009). Research-based interventions aid in the student’s transition back to school and provide an effective education for the student’s specific needs.

Dykeman (2003) suggests basic classroom interventions for social adjustment that can be utilized by school psychologists. These interventions may be used for students with TBI, but are not specific to students with TBI and may be used for all student populations. Reinforcement of positive behavior is an intervention utilizing a reinforcement schedule to maintain socially appropriate behavior. Modeling appropriate behaviors can be used to reinforce certain behaviors. Self-monitoring is an intervention that draws the student’s attention to his or her own behavior and gives the student the power to redirect behavior. Social scripting is an intervention in which the student utilizes prepared scripts for social situations that may be particularly difficult. Other interventions for social adjustment include anxiety management, relaxation, and social-cognitive strategies (group counseling and peer modeling).

Interventions are also available for students who show deficits in attention, executive functioning, or academics (Semrud-Clikeman, 2001). Interventions for
attention and concentration may include making changes in the class environment (e.g. reducing extraneous distractions), altered lesson presentation (e.g. providing outlines), and in behavioral management (e.g. charting behavior). For executive functioning difficulties, interventions may include self-monitoring behavior and asking open-ended questions to allow the student to problem-solve. Academic interventions include strategies to improve reading fluency, reading comprehension, writing, and math categories. There are a multitude of research-based interventions that may be used for academic functioning depending upon the academic deficit. Examples include repeated reading, paired reading, story mapping, sentence combining, and cover, copy, and compare (e.g., Rathvon, 2008).

Few empirical studies have developed specific interventions for students with TBI. Davies, Jones, and Rafoth (2010) showed self-management and self-monitoring were successful interventions for students with TBI, and students with TBI were able to appropriately self-evaluate and self-manage their own behavior. In this study, students and teachers self-evaluated behavior and class work twice each day. The rating scales were compared after each rating period, morning and afternoon. The student was praised for “matching” ratings, and any discrepancies were discussed. The student then graphically recorded his or her data so they were able to monitor individual progress and see improvement. This intervention significantly improved the students’ behavior and class work.

This information and appropriate training will enable school psychologists to have the skill set required for working with students with TBI. Several skills help school psychologists best serve students with TBI: (1) being part of a multidisciplinary team
serving a student with TBI; (2) serving as an IEP manager for a student with TBI; (3) providing educators with information about TBI; (4) providing assessment services for students who display signs of TBI; (5) providing students in the school with information about TBI; (6) providing appropriate interventions for students with TBI; and (7) providing consultation to parents and teachers of students with TBI (Hux, Walker, and Sanger, 1996). These skills are an outcome of the training a school psychologist receives and the knowledge he or she gains from training.

**Misconceptions in School Systems**

Misconceptions about TBI are common, including extent of potential recovery, awareness of the diversity of cognitive and behavioral impairments, and identifying persons with TBI as learning disabled (Swift & Wilson, 2001). High rates of TBI misconceptions exist among educators (Farmer & Johnson-Gerard, 1997). Compared to the general public, educators are generally better informed about TBI, but still hold false beliefs with a mean percent of misconception of approximately 49% (Farmer & Johnson-Gerard, 1997).

Educators tend to focus efforts on increasing students’ functional independence and accommodating students’ altered skills. Glang et al. (2008) conducted research showing 25% of students with TBI were identified for formal services in the form of individual education plans or a 504 plan. Over 41% of students received informal support in the form of extra time on tests, more time between classes, and schedule changes. Challenges occur in education because of a lack of professional knowledge of TBI and a lack of experience in working with students with severe TBI (Berbaum, 2008).
School psychologists help students transition and reintegrate back to school, and they can provide continuous support by monitoring and planning for a child’s education (Gfroerer, Wade, & Wu, 2008), but there is limited research examining school psychologist’s knowledge and training in TBI. In one study of school psychologist’s knowledge and training of TBI, the majority of school psychologists rated themselves as not receiving adequate training to work with students with TBI (Hooper, 2006). The number of years of experience and amount of training had little effect on the findings.

School staff’s lack of TBI knowledge is the primary reason for dissatisfaction among parents whose children have sustained a TBI (Glang et al., 2004). Parents are anxious to see their child reintegrate and readjust in the school system after a TBI. Research on parent perceptions of their child’s reintegration into a school shows parents are most dissatisfied with the amount and quality of emotional and behavioral support received (Gfroerer, Wade, & Wu, 2008). Emotional and behavioral support in a school system for students with TBI may come from school psychologists, teachers, counselors, and administration. School staff and administrators form transition teams to help the student successfully transition from the hospital to school.

Summary

Compared to other disabilities, the United States government only recently mandated special education services be provided for students with TBI (1990). A lack of research in this area may lead to inadequate resources and knowledge for school psychologists; therefore, students who sustain a TBI may not be given appropriate service delivery by the school system. By finding out what school psychologists know regarding TBI, more effective training plans may be designed and implemented.
The purpose of this survey study is twofold: First, it will help to determine school-based school psychologists’ readiness to provide assessment, intervention, and reintegration services to students with TBI. Second, it will provide a means of exploring knowledge, skills, and training of school psychologists working with students with TBI.

This research is part of a larger, collaborative project addressing the knowledge of school psychologists regarding TBI, the knowledge of teachers regarding TBI, the assessments and interventions used by teachers and school psychologists in terms of TBI, how training programs for school psychologists and teachers address TBI, and to what extent educators apply his or her TBI knowledge and skills.
METHOD

Research Question and Hypothesis

This research examines the following research questions: (a) What do practicing school psychologists know about TBI? (b) Do school psychologists with training have more knowledge and skills about TBI than school psychologists without training?

The hypothesis is that there will be variation in the amount and quality of school psychologist’s training, knowledge, and skills related to TBI. School psychologists who have training in TBI and/or have more experience working with students who have sustained a TBI will have more knowledge and higher skills than the school psychologists have little training and experience in working with TBI.

Research Design

This study is quasi-experimental research examining relationships between variables. The dependent variable is the knowledge and skills of school psychologists regarding TBI, and the independent variable is the school psychologists’ amount of training. The participants were split into two groups: participants without training in TBI (Group 1) and participants with training in TBI (Group 2). This research design was chosen to analyze the impact of training on school psychologists’ knowledge about TBI.

Participants

Participants in this study were school psychologists in the Northeastern region of the United States. This region was picked based upon the availability of this region’s
school psychology state association websites. This sample was gathered from the regional school psychologist’s membership pools. The current legislative board and regional representatives of each state association were contacted by e-mail. Potential respondents were not included or excluded solely based on gender, race, ethnicity, or socioeconomic status. One hundred and thirty-nine surveys were sent out, and forty-one participants responded yielding a response rate of twenty-nine percent. The education level of respondents ranged from Master’s degree to Doctorate degree. The majority of respondents has been a school psychologist for 1-5 years and work in a public school setting (see Table 1).

Table 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mode</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Specialist</td>
<td>48%</td>
</tr>
<tr>
<td>Year of Highest Degree Earned</td>
<td>2001-2010</td>
<td>63%</td>
</tr>
<tr>
<td>Work Setting</td>
<td>Public School</td>
<td>88%</td>
</tr>
<tr>
<td>Number of Students Served with TBI</td>
<td>Few (1-5)</td>
<td>64%</td>
</tr>
</tbody>
</table>

Materials

A team of graduate students and their advisor developed the questionnaire in a collaborative process. The “background information” and “knowledge” sections were developed in conjunction with Western Oregon University’s research on TBI. The “skills” and “additional concerns” sections were adopted from Hux, Walker, and Sanger’s (1996) TBI survey.

The knowledge of school psychologists was measured by a 30-question assessment. Potential responses included “True”, “Probably True”, “Probably False”, and “False”. The correct answer received 2 points, the partially (“probably”) correct
answer received 1 point, and the two incorrect responses received 0 points. Participants were given a total score based on correct and incorrect responses.

Responses were recorded so participants were not identifiable to anyone other than the researcher. E-mail addresses associated with each respondent were only available to the researcher. All raw data collected will be destroyed within one year after the completion of the study.

A pilot study was conducted prior to the present study at the University of Dayton. The purpose of the pilot study was to eliminate and refine questions so that a succinct assessment could be administered on a nationwide scale. Students responded to questions in pencil and paper format. The results from the pilot study were not used for the purposes of the current study.

**Data Collection**

The survey (see Appendix A) was distributed to a sample of school psychologists in Northeastern United States using an online survey tool (SurveyMonkey). Each participant received a letter of informed consent (see Appendix B) along with the survey describing the study and the importance and confidentiality of the study. The survey was open for eight weeks. Two follow-up e-mails were sent to participants who had not yet responded at week five and week seven. All quantitative and qualitative data gathered from the survey was entered into Statistical Package for the Social Sciences (SPSS).
RESULTS

Data Analysis

The survey results yielded ordinal and interval data. The data were analyzed using independent sample t-tests. The independent sample t-tests determined if school psychologists without training have significantly less knowledge and skills than school psychologists with training. A level of p=.05 was used to determine significance in SPSS. Additional concerns were analyzed by qualitative content.

Training

Levels of training in TBI were determined by self-report responses from the survey. Fifty-three percent of the participants (N=22) reported as having received TBI training, and forty-six percent of the participants (N=19) reported as not having receiving TBI training (see Table 2). The respondents who received training classified training in one or more areas: a class/seminar specifically devoted to TBI, a miniseminar or inservice, a conference/workshop, a class session within a course, or other. The most common type of TBI training school psychologists received was a class session within a course (42%), and the least common was a class specifically devoted to TBI (2%; see Table 3).
Participants listed resources and training materials that they use in professional practice. TBI resources that were used in participants’ training included websites, textbooks, research-based journal articles, consultations with physicians and medical teams in Children’s hospitals, hand-outs, National Association of School Psychologists (Helping Children at Home and School II), and websites including government-funded websites and school psychology websites (e.g., [www.nasponline.org/resources/factsheets/medical_fs.aspx](http://www.nasponline.org/resources/factsheets/medical_fs.aspx), [www.ninds.nih.gov/disorders/tbi/tbi.htm](http://www.ninds.nih.gov/disorders/tbi/tbi.htm), and [www.naset.org/traumaticbraininj2.0.html](http://www.naset.org/traumaticbraininj2.0.html)).

## Table 2

**Percentage of Respondents With and Without TBI Training**

<table>
<thead>
<tr>
<th>Training</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>53%</td>
</tr>
<tr>
<td>No Training</td>
<td>46%</td>
</tr>
</tbody>
</table>

## Table 3

**Distribution of TBI Training by Type**

<table>
<thead>
<tr>
<th>Training</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class/Seminar</td>
<td>2%</td>
</tr>
<tr>
<td>Miniseminar or Inservice</td>
<td>15%</td>
</tr>
<tr>
<td>Conference/Workshop</td>
<td>39%</td>
</tr>
<tr>
<td>A Class Session Within a Course</td>
<td>42%</td>
</tr>
</tbody>
</table>

## Knowledge

To examine the effects of training on knowledge, the participants were divided into two groups: those who have received training and those who have not received training. Participants who had received any type of TBI training, including class/seminar, miniseminar, inservice, conference/workshop, class session within course, other, were the training group. School psychologists who had received training scored
higher in knowledge ($M=34$, $SD=8.0$) compared to school psychologists who have not received training ($M=26.5$, $SD=5.9$); this difference was significant ($p<.05$).

School psychologists trained in TBI demonstrated several areas of strength as measured by the percentage of correct answers (see Table 4). The percentage of correctly answered questions by school psychologists with and without training was compared. Twenty-five of the thirty questions had a greater percentage of correct responses by school psychologists with training. Four questions had a greater percentage of correct responses by school psychologists with training, and one questions had an equal number of correct responses.

Table 4

<table>
<thead>
<tr>
<th>Knowledge Question</th>
<th>Training</th>
<th>Without Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBI is equally common in males and females.</td>
<td>32%</td>
<td>6%</td>
</tr>
<tr>
<td>A child/adolescent in a coma is usually not aware of what is happening around them.</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>After a brain injury, children/adolescents can forget who they are and not recognize others, but be ‘normal’ in every other way.</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>A brain injury affects girls’ and boys’ brains differently</td>
<td>18%</td>
<td>11%</td>
</tr>
<tr>
<td>Even after several weeks in a coma, when children/adolescents wake up, most recognize and speak to others right away.</td>
<td>18%</td>
<td>17%</td>
</tr>
<tr>
<td>After a brain injury, it is usually harder to learn new things than it is to remember things from before the injury.</td>
<td>36%</td>
<td>11%</td>
</tr>
<tr>
<td>A child/adolescent’s pre-injury status (i.e., intellectual and emotional functioning) is likely to impact recovery from brain injury.</td>
<td>27%</td>
<td>22%</td>
</tr>
<tr>
<td>Children/adolescents who have had one brain injury are more likely to have a second one.</td>
<td>36%</td>
<td>0%</td>
</tr>
<tr>
<td>Complete recovery from severe brain injury is not possible no matter how badly the child/adolescent wants to recover.</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Children/adolescents are likely to recover more completely from a brain injury than adults due to the greater plasticity of the young</td>
<td>4.5%</td>
<td>0%</td>
</tr>
</tbody>
</table>
A child who acquires a brain injury between 12 and 16 will typically present an even pattern of academic strengths and weaknesses.  

| 32% | 28% |

A child’s brain, unlike an adult’s, is able to “bounce back” after a brain injury.  

| 9%  | 0%  |

It is common for children/adolescents with brain injuries to be easily angered.  

| 41% | 44% |

Fluctuation among cognitive abilities is a finding typical of children/adolescents who have a brain injury, and not typical of the general population of children/adolescents.  

| 14% | 11% |

When children/adolescents are knocked unconscious, most wake up quickly with no lasting effects.  

| 4.5%| 0% |

It is important to provide many details when delivering instructions to a student with brain injury.  

| 27% | 6% |

Greater variability exists in the population of students with TBI than exists in populations of other students with disabilities.  

| 41% | 17% |

The only sure way to tell if someone has suffered brain impairment from a brain injury is by an X-ray of the brain.  

| 36% | 28% |

Knowing the location of brain injury resulting from TBI helps in the development of programming to meet a student’s needs.  

| 55% | 56% |

Many students with TBI display characteristics similar to those of students with LD.  

| 45% | 17% |

Knowledge of a student’s background prior to TBI is necessary when developing an educational plan.  

| 50% | 50% |

Medical labels that specify TBI as mild, moderate, or severe are useful for programming communication and academic services.  

| 41% | 22% |

The primary goal of brain injury rehabilitation is to increase physical abilities such as walking.  

| 41% | 11% |

Many students with TBI perform better in structured testing situations than they do in classroom settings.  

| 21% | 18% |

The challenges of students with TBI are typically more difficult to assess than the challenges of students with other disabilities.  

| 27% | 28% |

Most special and regular educators are knowledgeable about the speech, language, and cognitive communication problems associated with TBI.  

| 14% | 11% |

Students with TBI often have trouble forming and maintaining friendships.  

| 36% | 22% |
Recovery following TBI may continue for several years. 72% 56%

Students with TBI often display behavior problems. 50% 44%

Standardized tests are more beneficial than descriptive measures (e.g., language samples, interviews, checklists, observational techniques) in assessing cognitive deficits secondary to TBI. 45% 17%

Skills

School psychologist’s qualifications were measured in 9 skills (see Table 5). The percentage of school psychologists who rated themselves as being skilled in each domain is reported. The majority of participants felt qualified to be part of a multidisciplinary team serving a student with a TBI, while participants felt least qualified to serve as an IEP manager for a student with TBI.

Table 5

Percentage of Self-Reported Skills of School Psychologists

<table>
<thead>
<tr>
<th>Skill</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be part of a multidisciplinary team serving a student with TBI</td>
<td>73%</td>
</tr>
<tr>
<td>Serve as an IEP manager for a student with TBI</td>
<td>19%</td>
</tr>
<tr>
<td>Provide educators with information about TBI</td>
<td>53%</td>
</tr>
<tr>
<td>Provide students in my school with information about TBI</td>
<td>41%</td>
</tr>
<tr>
<td>Provide assessment services for students who display signs of TBI</td>
<td>43%</td>
</tr>
<tr>
<td>Provide appropriate school-based interventions for students with TBI</td>
<td>53%</td>
</tr>
<tr>
<td>Provide accommodations and modifications for students with TBI</td>
<td>56%</td>
</tr>
<tr>
<td>Differentiate between students with TBI and students with other disabilities</td>
<td>24%</td>
</tr>
<tr>
<td>Monitor classroom behavior and academic progress for students with TBI</td>
<td>63%</td>
</tr>
</tbody>
</table>
To examine the effects of training on skills, the participants were divided into two groups: those who have received training and those who have not received training. Participants who had received any type of TBI training, including class/seminar, miniseminar, in-service, conference/workshop, class session within course, other) were put into the training group. The participants checked each skill that they felt qualified to perform at the present time. Possible scores ranged from 0 skills to 9 skills. School psychologists who received training self-reported having more skills ($M=5.3$, $SD=2.3$) compared to school psychologists who had not received training ($M=4.6$, $SD=1.8$); however, the difference was not significant ($p>.05$; see Table 6).

Table 6

<table>
<thead>
<tr>
<th>Skill</th>
<th>Training</th>
<th>Without Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be part of a multidisciplinary team serving a student with TBI</td>
<td>81%</td>
<td>57%</td>
</tr>
<tr>
<td>Serve as an IEP manager for a student with TBI</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Provide educators with information about TBI</td>
<td>68%</td>
<td>31%</td>
</tr>
<tr>
<td>Provide students in my school with information about TBI</td>
<td>45%</td>
<td>32%</td>
</tr>
<tr>
<td>Provide assessment services for students who display signs of TBI</td>
<td>54%</td>
<td>31%</td>
</tr>
<tr>
<td>Provide appropriate school-based interventions for students with TBI</td>
<td>50%</td>
<td>52%</td>
</tr>
<tr>
<td>Provide accommodations and modifications for students with TBI</td>
<td>53%</td>
<td>42%</td>
</tr>
<tr>
<td>Differentiate between students with TBI and students with other disabilities</td>
<td>36%</td>
<td>5%</td>
</tr>
<tr>
<td>Monitor classroom behavior and academic progress for students with TBI.</td>
<td>66%</td>
<td>52%</td>
</tr>
</tbody>
</table>
Additional Findings

The number of years as a school psychologist was shown to be positively correlated with the number of students served with TBI; $r(39)=.34$, $p<.05$. As school psychologists gain more experience and years in school psychology, they will most likely encounter more cases of children with TBI.

Participants were asked to express primary concerns about providing services to students with TBI. These concerns were grouped into nine categories: transitioning students back to school from a hospital setting/coordination of medical needs to school needs; continuing education and additional training opportunities; creating appropriate educational experiences for the student/ensuring child’s needs are being met; academic programming; understanding the behavioral, social, and emotional implications of TBI; understanding how behavioral changes impacts the student’s learning; knowing how to help students prepare for and adjust to a different lifestyle; differentiating between TBI and other disabilities; conducting an evaluation for students with TBI; and educating their school staff. The concerns and the frequency of each concern are reported is Table 7.

<table>
<thead>
<tr>
<th>Concern</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitioning students back to school from a hospital setting/Coordination of medical needs to school needs</td>
<td>5</td>
</tr>
<tr>
<td>Continuing education and additional training opportunities</td>
<td>2</td>
</tr>
<tr>
<td>Creating appropriate educational experiences for the student/Ensuring child’s needs are being met</td>
<td>3</td>
</tr>
<tr>
<td>Academic programming</td>
<td>7</td>
</tr>
<tr>
<td>Understanding the behavioral, social, and emotional implications of TBI</td>
<td>1</td>
</tr>
<tr>
<td>Understanding how behavioral changes impacts the student’s learning</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>Knowing how to help students prepare for and adjust to</td>
<td>1</td>
</tr>
<tr>
<td>a different lifestyle</td>
<td></td>
</tr>
<tr>
<td>Differentiating between TBI and other disabilities</td>
<td>2</td>
</tr>
<tr>
<td>Conducting an evaluation for students with TBI</td>
<td>1</td>
</tr>
<tr>
<td>Educating their school staff</td>
<td>3</td>
</tr>
</tbody>
</table>
DISCUSSION

Inadequate training for school psychologists in TBI can lead to inappropriate service delivery by the school system. By finding out what school psychologists know regarding TBI, effective training plans may be implemented. This research attempted to identify the training, skills, and knowledge of school psychologists. The purpose of this survey study was to determine school psychologists’ readiness to provide assessment, intervention, and reintegration services to students with TBI, by exploring knowledge, skills, and training of school psychologists who working with students with TBI.

The results support the first hypothesis: there is a wide variation in the amount of TBI training of school psychologists. Only 53% of school psychologists in this sample reported received any kind of TBI training. This is an alarmingly low percentage considering a primary role of the school psychologist is to evaluate and identify students with TBI in the school setting. This result supports previous research showing that the majority of school psychologists feel they have not received adequate training to work with students with TBI (Hooper, 2006). This result also shows not all school psychology training programs include TBI in their curriculum.

The majority of school psychologists with training in the present study received this training through a class session within a course (42%) or a workshop/conference (39%). Miniseminars and inservices (15%) and entire classes/seminars (2%) were not
reported as common TBI training resources. These modes of training should be
continued and improved upon. For example, graduate programs can include more than
one class session to cover TBI in their curriculum, or school psychologists can seek out
TBI presenters and schedule an inservice for staff.

Participants reported several professional TBI resources from graduate training,
such as websites, textbooks, research-based journal articles, and handouts. After
graduate training in TBI, school psychologists must seek and use other TBI resources,
such as inservices, consultations, websites, and organizations. School psychologist
participants in this study cited consultations with physicians and medical teams in
Children’s hospitals, National Association of School Psychologists (Helping Children at
Home and School II), and websites including government-funded programs and school
psychology websites as usable resources for TBI.

Support was found for the first part of the second hypothesis: school
psychologists who received TBI training are more knowledgeable about TBI compared to
school psychologists who had not received training. Although training was not shown to
be effective in improving self-assessment of skills, training was shown to be effective in
improving knowledge. It should be noted that school psychologists with more years of
experience did not have higher results on the knowledge assessment.

Support was not found for the second part of the second hypothesis, that school
psychologists with training would have more self-reported skills than school
psychologists without training. School psychologists with training in TBI rated
themselves as having slightly more skills overall, but this difference was not significant.
This result may be affected by the number of years working as a school psychologist and/or higher levels of confidence.

An analysis of school psychologist’s skills showed that school psychologists with TBI training were more likely to rate themselves as able to be part of a multidisciplinary team serving a student with TBI, serve as an IEP manager for a student with TBI, provide educators with information about TBI, provide assessment services for students who display signs of TBI, provide accommodations and modifications for students with TBI, differentiate between students with TBI and students with other disabilities, and monitor classroom behavior and academic progress for students with TBI. School psychologists without training rated themselves as higher in their ability to provide appropriate school-based interventions for students with TBI.

**Limitations**

There are several possible limitations to this study. First, the data was collected with self-report measures. Self-report is a valid measure of data collection, but participants may rate themselves differently from actual ability. Second, surveys often do not get a high rate of return, so the sample size was smaller than desired. Third, response bias is present in survey research. Those participants who are more invested in TBI will be more likely to respond, and therefore the results may be skewed. Fourth, the participants were recruited from school psychology state associations; therefore participants not involved in their state association did not have an opportunity to participate in this study.
Recommendations for Future Training

School psychologists are important team members in reintegrating students, identifying students, providing consultation, and creating individualized education plans for students with TBI (Hooper, 2006). The school psychologists who received TBI training scored an average of 56% on the knowledge assessment, and only 41% of school psychologists felt comfortable providing information about TBI to students and parents. These scores indicate a need for more comprehensive, applicable, and continued training in TBI.

Challenges occur in education because of a lack of professional knowledge of TBI and a lack of experience (Berbaum, 2008). The results of this study can help to improve professional knowledge and training by making school psychologists aware of the deficit in TBI knowledge. Due to overall low scores, all areas of TBI knowledge should be improved. Knowledge of TBI directly relates to the quality of skills school psychologists apply in the school setting.

Future training for graduate preparation programs, continuing education programs, and consultation follow-ups can be concluded from participant’s confidence of their applied skills. School psychologists with training remained unsure of their ability to serve as an IEP manager for a student with TBI, identify differentiating characteristics between students with TBI and students with other disabilities, and being able to provide appropriate school-based interventions for students with TBI.

Guidance for future training can also be determined by participant discussion responses. Participants’ concerns focused on transitioning students back to school from a hospital setting, making sure the child’s needs are met in the school setting, academic
programming and creating appropriate educational experiences for the student (i.e.,
providing appropriate instructional supports and accommodations in the classroom), and
providing coordination between the hospital and school so that the student’s needs are
individualized. School psychologist’s reported they would like to better understand the
behavioral, social, and emotional implications of TBI, how behavioral changes impacts
the student’s learning, and how to help students prepare for and adjust to a different
lifestyle. One respondent noted the growing importance of neuropsychology and
research-based interventions in this area.

School psychologists expressed concerns about educating their school staff. TBI
is an underdeveloped topic area in many school districts, and school staff’s lack of TBI
knowledge is the primary reason for dissatisfaction among parents whose children have
sustained a TBI (Glang et al., 2004). This is an excellent opportunity for school
psychologists to become experts and provide information for school staff.

This study shows that many school psychologists lack the readiness to provide
assessment, intervention, and reintegration services to students with TBI. The results
show areas to improve upon and topics for future training. By becoming aware that
school psychologist professionals lack the appropriate training in such an important
professional duty, training programs can improve, and this will directly translate into
increased knowledge and improved skills in TBI.
REFERENCES


U. S. Department of Education. (2004). *Twenty-sixth annual report to Congress in the implementation of the Individuals with Disabilities Education Improvement Act*. Washington, DC.


Appendix A. Traumatic Brain Injury School Psychologist Questionnaire.

Your Current Work Setting:
- Public
- Private
- Hospital
- University
- Student

Year of Highest Degree Earned:
- Before 1970
- 1971-1980
- 1981-1990
- 1991-2000
- 2001-2010

Type of Highest Degree Earned:
- Bachelor’s
- Master’s
- Specialist’s
- Doctorate

Were you trained or are you being trained in traumatic brain injury (TBI)?
- YES
- NO

If YES, describe what kind of training you have received:
- class/seminar specifically devoted to TBI?
- poster presentation, miniseminar, or in service?
- conference or workshop?
- other(s)

Please list any TBI resources that were used in your training (e.g., websites, books, etc.):

---

Work Experience:
Do you have experience as a school psychologist?
- YES
- NO

Number of years as a school psychologist:______________

Approximately how many students with TBI have you worked with in a school setting?
- none (0)
- few (1-5)
- several (6-10)
- many (>11)

Personal Experience:
Do you have a close friend or family member who has ever sustained a:

Concussion/mild brain injury
- YES
- NO

Moderate-severe brain injury
- YES
- NO

Have you ever sustained a:

Concussion/mild brain injury
- YES
- NO

Moderate-severe brain injury
- YES
- NO

<table>
<thead>
<tr>
<th>SECTION 1</th>
<th>True</th>
<th>Probably True</th>
<th>Probably False</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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<td>3</td>
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<tr>
<td>4</td>
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</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A child/adolescents’s pre-injury status (i.e., intellectual and emotional functioning) is likely to impact recovery from brain injury.

Children/adolescents who have had one brain injury are more likely to have a second one.

Complete recovery from severe brain injury is not possible no matter how badly the child/adolescent wants to recover.

Children/adolescents are likely to recover more completely from a brain injury than adults due to the greater plasticity of the young brain.

A child who acquires a brain injury between 12 and 16 will typically present an even pattern of academic strengths and weaknesses.

A child’s brain, unlike an adult’s, is able to “bounce back” after a brain injury.

It is common for children/adolescents with brain injuries to be easily angered.

Fluctuation among cognitive abilities is a finding typical of children/adolescents who have a brain injury, and not typical of the general population of children/adolescents.

When children/adolescents are knocked unconscious, most wake up quickly with no lasting effects.

It is important to provide many details when delivering instructions to a student with brain injury.

Greater variability exists in the population of students with TBI than exists in populations of other students with disabilities.

The only sure way to tell if someone has suffered brain impairment from a brain injury is by an X-ray of the brain.

Knowing the location of brain injury resulting from TBI helps in the development of programming to meet a student’s needs.

Many students with TBI display characteristics similar to those of students with LD.

Knowledge of a student’s background prior to TBI is necessary when developing an educational plan.

Medical labels that specify TBI as mild, moderate, or severe are useful for programming communication and academic services.

The primary goal of brain injury rehabilitation is to increase physical abilities such as walking.

Many students with TBI perform better in structured testing situations than they do in classroom settings.

The challenges of students with TBI are typically more difficult to assess than the challenges of students with other disabilities.

Most special and regular educators are knowledgeable about the speech, language, and cognitive communication problems associated with TBI.

Students with TBI often have trouble forming and maintaining friendships.

Recovery following TBI may continue for several years.

Students with TBI often display behavior problems.

Standardized tests are more beneficial than descriptive measures (e.g., language samples, interviews, checklists, observational techniques) in assessing cognitive deficits secondary to TBI.
SECTION 2

Which of the following do you feel qualified to do at the present time? (check all that apply)

_____ Be part of a multidisciplinary team serving a student with TBI.
_____ Serve as an IEP manager for a student with TBI.
_____ Provide educators with information about TBI.
_____ Provide students in my school with information about TBI.
_____ Provide assessment services for students who display signs of TBI.
_____ Provide appropriate school-based interventions for students with TBI.
_____ Provide accommodations/ modifications for students with TBI, such as modifying the school day, modifying the classroom environment, or modifying the school environment.
_____ Differentiate between students with TBI and students with other disabilities.
_____ Monitor classroom behavior and academic progress for students with TBI.

What are your primary concerns about providing services to students with TBI (e.g. personal continuing education needs, academic programming for students, education of school personnel about TBI, transitioning students from medical facilities to schools, etc.)?

________________________________________

________________________________________

________________________________________

________________________________________

________________________________________

Partially adapted from Western Oregon’s Traumatic Brain Injury Research Center
Appendix B. Confidentiality and Informed Consent.

Traumatic Brain Injury: School Psychologist Training, Knowledge, and Skills

You are invited to participate in a study designed to investigate the knowledge, skills, and training of school psychologists related to students with traumatic brain injuries (TBI). The information you provide will clarify how school psychologists are trained in identifying and responding to the needs of students with TBI. Data collected will allow the researchers the opportunity to analyze current practices and training programs, with the end goal of improving identification of and services for students with TBI.

Due to the nature of large-scale studies, we are asking that representatives respond to the survey and then forward the survey to respective school districts and/or regional mailing lists of school psychologists. If you are a regional representative, school district representative, or university representative, please forward this e-mail to potential participants in your region, district, or university.

If you decide to participate in this study, please attempt to answer all of the survey questions. They survey should take approximately 10-15 minutes to complete.

Your consent to participate in this study will be indicated by your submission of a completed survey. Participation is voluntary and can be terminated at any time without penalty. Only the primary investigators will have access to identifying information. Because you are completing the survey online, absolute confidentiality cannot be guaranteed due to the limited protections of Internet access. There are no anticipated risks involved in participating in this research.

Please click the link below or cut and paste the link into your browser: xxxxxxxxxx

If you have questions about the study, contact the principal researchers:
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300 College Park
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937-229-3652
sdavies1@notes.udayton.edu

Dana Doran-Myers
West Carrollton City Schools
School Psychology Intern
614-557-2766
ddoranmyers1@notes.udayton.edu

Questions about the rights of the participant should be addressed to:
Mary Connolly, PhD
Chair, IRB
Kettering Labs Room 542
Dayton, OH 45469-0104
mary.connolly@notes.udayton.edu
Phone: (937) 229-3493
Fax: (937) 229-2291

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