

Title

Screening and Identification of Individuals with Brain Injury (BI) Seeking Services through the Area Agency on Aging in Rural Nebraska

Investigators

Erin Bush, Ph.D., CCC-SLP

Miechelle McKelvey, Ph.D., CCC-SLP

Whitney Schneider-Cline, Ph.D., CCC-SLP

Introduction

Traumatic brain injury is one of the leading causes of mortality and disability in the United States. For the elderly population (65 years of age and older), brain injury (BI) is the cause of over 80,000 emergency room visits every year. This number is likely to increase, and is projected to reach 71 million people in the United States by 2030. The greater the elderly population, the more one would expect BI incidences to rise. The elderly population is one of the three most at-risk age groups for BI (Langlois, Rutland-Brown, & Thomas, 2007). In order to raise awareness about BI, educate about its effects, and provide timely and effective intervention, high-risk populations should be screened for BI. However, professionals must have an effective screening measure to target individuals in populations at an increased risk. Additionally, when individuals are positively identified as having a history of BI by there is a greater potential for healthcare providers to implement more timely and effective interventions.

Purpose

The current project focused on the need for routine BI screenings for a high-risk age group, those 65 years and over. The researchers utilized a screening tool with elderly individuals in a rural location. Data was collected from service coordinators employed by the Area Agency on Aging at three locations in rural Nebraska. The researchers provided education about brain injury and measured the effectiveness of the education with a true/false pre- and post-survey; trained the service coordinators to administer a specific brain injury screening tool (the OSU-TBI); interviewed a focus group of service coordinators about the effectiveness of the training and their feelings of preparedness in using the screening tool. The service coordinators then administered the screening tool and the researchers acquired data regarding the number of positive brain injury screens attained by them. Finally, the researchers conducted a follow-up interview with service coordinators' approximately 3-4 months after the educational/training session regarding information about their perceptions, preparedness, and use of the screening tool with clients.

Participants

There were two groups of participants for this study.

Group A consisted of 24 service coordinators employed through an Area Agency on Aging at three locations. These participants were recruited for this project because of their employment responsibilities that included evaluating elderly individuals for healthcare services.

Group B consisted of clients seeking services through the Area Agency on Aging (N=558 43% male). They were screened for brain injury by Group A with the OSU TBI-ID screening tool and their results were entered into a de-identified database.

Research Design

This study employed a mixed-methods research design. The researchers chose this design because it allowed for collection of both quantitative and qualitative data to provide a more complete view of the potential problems and solutions encountered when screening individuals for brain injury.

Procedures

Participation for Group A consisted of eight tasks: 1) completion of a demographic questionnaire that assessed their knowledge, work experience with people who have brain injuries, training, years of employment, and biographic information; 2) completion of a (pre) true/false survey consisting of 11 items regarding common misconceptions about brain injury; 3) attendance of a brain injury education session that included information about brain injury, identification of at individuals who are at risk for brain injury, potential effects of brain injury, strategies for successful communication interactions, and question/answer session; 4) completion of a (post) true/false survey about brain injury; 5) completion of a training session regarding accurate administration and scoring of the OSU TBI-ID screening tool (the researchers used the training PowerPoint presentation developed by the authors of the tool); 6) participation in a focus group interview to explore how participants described their knowledge of brain injury after the education and training and their perceived preparedness for screening clients with possible brain injury; 7) screening of all their current clients and new referrals using the OSU TBI-ID tool over a period of three months (data was entered into a de-identified database); and lastly 8) completion of a follow-up interview 3-4 months post-training and education to explore how participants described their competence when interacting with clients with possible brain injury and their experiences with administering the OSU TBI-ID tool.

Data Analysis

The researcher gathered both quantitative and qualitative data from participant Group A and quantitative data only from Group B. Quantitative data from Group A consisted of their performance on the pre- and post-training measure, which indicated the effectiveness of the brain injury training. Qualitatively, the researchers gathered information from Group A through focus group interviews about their perceptions of the training as well as their preparedness for using the screening tool with their new and existing clients. The quantitative data from Group B was derived from the de-identified database, which contained data from the administration of the screening. This information documented how many clients were identified as having a brain injury via the screening tool and their demographic distributions.

Results

Quantitative data

A pilot study was conducted and preliminary results were reported in 2014. The following results reflect the preliminary results (N=83) as well as those for the expanded study (N=475) for a total of N=558.

Two hundred and one individuals of the possible five hundred and fifty-eight individuals screened had potential injuries that caused BI or 36% of the total sample. Of those individuals with injuries, 43% had positive screens for a BI (or 15% of the total number of people screened). Eighty-seven percent of the of individuals with positive screens, had not been previously diagnosed with a BI (75/86). Many of the individuals who had positive screens for BI reported multiple injuries. Thirty-seven percent identified having multiple injuries (22% 2 injuries, 15% 3+ injuries). The most common age at the time of brain injury was 65 years or older with 36% of the sample. This reflects national data trends which identify individuals age 65 years or older has a high risk group for brain injury. Additional data on age when injuries occurred: (0-4 years of age, 5%; 5-14 years of age, 10%; 15-24 years of age 19%; 25-44 years of age, 19%; 45-64 years of age 12%)

Most of the brain injuries identified during the screening process were classified as mild 75%; moderate 20%, and severe 5% of the population sampled.

Thirty-four percent of the individuals who had a positive screen experienced symptoms, such as memory loss and confusion, but no loss of conscious. Forty-one percent of this population reported a loss of conscious for less that 30 minutes; 20% experience loss of conscious between 30 minutes and lastly 5% reported a loss of conscious lasting more than 24 hours.

Qualitative data

Preliminary analysis of the pre-post tests indicated that Group A participants (N= 24) increased their knowledge of brain injury in the areas of recovery process, BI sequelae, and disorders of consciousness. The researchers asked Group A follow-up questions regarding: 1) educational session on brain injury; 2) previous training session on use of screening tool; 3) screening process with clients with the brain injury screening tool. The interviews were transcribe and coded using NVIVO software (qualitative analysis software program) and the following themes emerged: 1) Caseworkers learned more about their clients through the screening process; 2) Caseworkers stated adjustments they would make to the screening form for easy of administration and data collection; 3) Described the helpfulness of education and training sessions on brain injury and screening tool; 4) described lack of prior training on brain injury and positive effects of this training; 5) expressed enthusiasm for the screening tool's fit with their existing screening/intake procedures; and 6) expressed a desire to know about treatment options and referral process to speech language pathologists to provide more complete services for clients.

Conclusions

These findings support the need to screen elderly individuals for brain injury given the number that tested positive for possible brain injury on the screening tool. Secondly, many of the individuals screened did not have a prior diagnosis of brain injury. Thirdly, the data reflects national trends which identify individuals 65 years or older as a high risk group for brain injury. Finally, data from the screening tool also supports the premise that individuals who sustain a brain injury do not have to have a loss of consciousness to be symptomatic. In regards to the training and use of the screen tool participants indicated that they gained more knowledge about their clients. Participants wanted adjustments made to the screening form to be more user friendly and allow them to fit the screening into other procedures quickly and efficiently. Lastly, to better serve their clients, the participants inquired about additional services available to those that sustained a brain injury, such as referral processes and available services in their local areas.

References

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