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TITLE: Improving Work Outcomes for Veterans with Traumatic Brain Injury

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14. ABSTRACT The study is a 12-month randomized controlled trial comparing supported employment plus Cognitive Symptom Management and Rehabilitation Therapy (SE-Cog) to enhanced supported employment (ESE) for OEF/OIF veterans with mild to moderate traumatic brain injury (TBI) who are unemployed and want to return to work. CogSMART is a manualized, 12-week compensatory cognitive training intervention designed to provide: a) psychoeducation, b) strategies to address sleep problems, fatigue, headaches, and stress, and c) strategies to improve prospective memory, attention, learning/memory, and executive functioning. Assessments of cognition, post-concussive symptoms, psychiatric symptoms, functional skills, and quality of life will be administered at baseline, and at 3, 6, and 12 months following study enrollment. Work outcomes (i.e., weeks and hours worked; wages earned) will be measured weekly during the 12-month study. Repeated measures ANOVA using baseline and three-month scores showed that, compared with the ESE group, SE-Cog participants reported more improvement in post-concussive symptoms ($F=36.6$, $df=1,5$, $p=.002$); there were also trends toward improvement in verbal fluency and quality of life. Forty-four percent of SE-Cog participants and none of the ESE participants have obtained work thus far. These results suggest that CogSMART, in the context of supported employment, may improve post-concussive symptoms, cognitive performance, and work outcomes.					
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INTRODUCTION:

The study is a 12-month randomized controlled trial comparing supported employment plus Cognitive Symptom Management and Rehabilitation Therapy (SE-Cog) to enhanced supported employment (ESE) for OEF/OIF veterans with mild to moderate traumatic brain injury (TBI) who are unemployed and want to return to work. CogSMART is a manualized, 12-week compensatory cognitive training intervention designed to provide: a) psychoeducation, b) strategies to address sleep problems, fatigue, headaches, and stress, and c) strategies to improve prospective memory, attention, learning/ memory, and executive functioning. 64 participants will be randomized to one of two conditions: SE-Cog or ESE. SE-Cog and ESE will be delivered by the supported employment specialists during the first 3 months of the 12-month study. Assessments of cognition, post-concussive symptoms, psychiatric symptoms, functional skills, and quality of life will be administered at baseline, and at 3, 6, and 12 months following study enrollment. Work outcomes (i.e., weeks and hours worked; wages earned) will be measured weekly during the 12-month study. The results of the study will reveal whether supported employment services for this population can be improved by adding cognitive rehabilitation.

BODY:

As outlined in Year 1 of the Statement of Work, staff were hired and trained by the PI and co-Investigators. The PI met with the co-Investigators and consultants regarding program development and recruiting. Recruitment began, and 19 participants were enrolled between 12/22/08 and 8/31/09. All of the tasks outlined in the approved Statement of Work were completed with the exception of recruiting 32 participants in the first year. There were several factors that led to the number of participants being lower than predicted: a) Although the grant start date was officially September 1, 2008, funding did not arrive until the last week of September, which delayed the posting of the new positions until early October; b) there were delays in the hiring process, including difficulties obtaining computer access for the new staff members; c) due to high demand for neuropsychological evaluations in our Neuropsychological Assessment Unit at the VA, there were long wait times for neuropsychological evaluations (required for entrance into the study if not already completed). There is now an additional clinic available for neuropsychological assessment, which has reduced wait times to weeks rather than months. Due to these delays, the first participant was enrolled December 22, 2008, which is nearly a 4 month lag in start time. Now that these problems have been addressed, we are confident that we will be able to increase our recruitment over the next year to catch up to our enrollment goal.

Although none of the enrolled participants have completed the 12-month trial, we do have preliminary results to report. We examined the assessments of the first 13 veterans enrolled in the study. Participants were all male, 85% non-Caucasian, with a mean age of 32 and mean education of 13 years. Their TBIs occurred a mean of 4 years before study enrollment, and their mean losses of consciousness lasted 4 minutes. Sixty-nine percent met criteria for post-traumatic stress disorder. Their mean baseline scores were average on tests of attention, processing speed, learning, delayed recall, prospective memory, and executive functioning. However, their mean performance on one processing speed task (Digit Symbol) was below average (mean SS=6.6). Repeated measures ANOVA using baseline and three-month scores showed that, compared with the ESE group, SE-Cog participants reported more improvement in post-concussive symptoms ($F=36.6$, $df=1,5$, $p=.002$); there were also trends toward improvement in verbal fluency and quality of life. Forty-four percent of SE-Cog participants and none of the ESE participants have obtained work thus far. These results suggest that CogSMART, in the context of supported

employment, may improve post-concussive symptoms, cognitive performance, and work outcomes. SE-Cog participants have held competitive jobs such as: medical secretary, sporting goods salesperson, building maintenance repairer, and environmental technician. The abstract reporting these data has been submitted to the International Neuropsychological Society, is currently under review, and has been appended to this document as Appendix 1.

This study is novel in that there has been no published research on enhancing supported employment with cognitive training for clients with TBI. The main outcomes of the study will be (1) Knowledge regarding the efficacy of combining compensatory cognitive training with supported employment for clients with TBI; (2) A finalized CogSMART manual that will be made available for other service settings at the study's completion; and (3) 64 veterans with TBI will receive high-fidelity supported employment to assist them in transitioning back to the workforce.

No changes to the original Statement of Work are requested.

KEY RESEARCH ACCOMPLISHMENTS:

- 19 participants enrolled
- 1 participant dropped (moved out of the country)

REPORTABLE OUTCOMES:

- Abstract submitted to the International Neuropsychological Society:

Thomas, K.R., Williams, R.E., Bondi, M.W., Delis, D.C., & Twamley, E.W. (submitted). Supported Employment Plus Cognitive Training for Veterans with Traumatic Brain Injury. Journal of the International Neuropsychological Society (International Neuropsychological Society).

- Additional relevant conference presentations:

Huckans, M., Pavawalla, S., Demadura, T., Kolessar, M., Seelye, A., Roost, N., Tun, S., McCall, K., Twamley, E., & Storzbach, D. (2009). A pilot study examining the effect of a group-based cognitive strategy training intervention on self-reported psychiatric symptoms, functioning, and compensatory strategy utilization in OIF combat veterans with mild traumatic brain injury. American Academy of Clinical Neuropsychology, San Diego, CA.

Twamley, E.W., Jak, A., Thomas, K., & Delis, D. (2009). Cognitive Symptom Management and Rehabilitation Therapy (CogSMART). VA National Mental Health Conference, Baltimore.

Twamley, E.W. (2009). Counseling and Psychotherapy for Individuals with Traumatic Brain Injury. UCSD Counseling and Psychological Services Continuing Education Program, San Diego.

CONCLUSION:

The results of the baseline and 3-month data suggest that CogSMART, in the context of supported employment, may improve post-concussive symptoms, cognitive performance, and work outcomes. Data collection is on-going. If this pattern holds with a larger sample, the results would justify including cognitive training in the delivery of supported employment for veterans with mild-to-moderate TBI.

REFERENCES:

None included in this report except those above.

APPENDICES:

Abstract submitted is attached as Appendix 1.

SUPPORTING DATA:

None included in this report.

Appendix 1.

INS Abstract Submission, 2010

Supported Employment Plus Cognitive Training for Veterans with Traumatic Brain Injury

Kelsey R. Thomas, Rebecca E. Williams, Mark W. Bondi, Dean C. Delis, and Elizabeth W. Twamley

Traumatic brain injury (TBI) often results in residual cognitive and functional impairments. We examined the effects of Cognitive Symptom Management and Rehabilitation Therapy (CogSMART), a 12-week compensatory cognitive training intervention, on post-concussive symptoms, cognitive performance, and work outcomes in Iraq/Afghanistan veterans receiving supported employment services. CogSMART provides a) psychoeducation, b) strategies to address sleep problems, fatigue, headaches, and stress, and c) strategies to improve prospective memory, attention, learning/memory, and executive functioning.

13 unemployed veterans with mild-to-moderate TBI enrolled in a 12-month randomized controlled trial comparing supported employment plus CogSMART (SE-Cog) to enhanced supported employment (ESE). Participants were all male, 85% non-Caucasian, with a mean age of 32 and mean education of 13 years. Their TBIs occurred a mean of 4 years before study enrollment, and their mean losses of consciousness lasted 4 minutes. Sixty-nine percent met criteria for PTSD. Their mean baseline scores were average on tests of attention, processing speed, learning, delayed recall, prospective memory, and executive functioning. However, their mean performance on one processing speed task (Digit Symbol) was below average (mean SS=6.6).

Repeated measures ANOVA using baseline and three-month scores showed that, compared with the ESE group, SE-Cog participants reported more improvement in post-concussive symptoms ($F=36.6$, $df=1,5$, $p=.002$); there were also trends toward improvement in verbal fluency and quality of life. Forty-four percent of SE-Cog participants and none of the ESE participants have obtained work thus far.

These results suggest that CogSMART, in the context of supported employment, may improve post-concussive symptoms, cognitive performance, and work outcomes.