What is a Model Traumatic Brain Injury System?

NIDRR has funded the regional model traumatic brain injury systems (TBIMS) since 1987. There are 16 in the current cycle plus a National Data Center. These centers research the spectrum of care and rehabilitation in traumatic brain injury (TBI), from point of injury, through rehabilitation, to integration back into the community. Their research spans the areas of medical and vocational rehabilitation, assistive technology, community-based services, mental health, aging, and secondary conditions. Each center covers and accepts patients from a catchment area of surrounding states. All of the systems contribute data to a national statistical database, which tracks the long-term consequences of TBI.

Who conducts the research?

Model Systems designation is granted to institutions that are leaders in the development of rehabilitation and care interventions. The centers offer comprehensive care, with the goal of integrating patients with TBI into their communities. The investigators for these systems include neuroscientists, psychologists, physical and occupational therapists, engineers, surgeons, educators, and statisticians.

Who participates in the research?

Patients and research candidates are people with new and existing TBIs requiring care, rehabilitation, and support to return to functioning in the community. Patients may be admitted through affiliated hospitals, or referred by their physicians to the nearest Model System in their catchment area. For example: A patient with a new injury may be receiving care in a hospital in Harrisburg, PA. His physician may refer him to the Moss Traumatic Brain Injury System in Philadelphia for comprehensive rehabilitation that may not be available through the admitting hospital. The 16 Model Systems are located in (moving NorthEast to NorthWest) New York, New Jersey (2), Pennsylvania, Virginia, North Carolina, Alabama, Ohio, Illinois, Michigan, Minnesota, Texas (2), Colorado, California, and Washington.

Let’s take a look at the individual systems, their research projects, and some of the important publications they’ve produced in the last five years.

Mayo Clinic Traumatic Brain Injury Model System

Mayo Clinic (H133A070013) led by Allen W. Brown, MD. Leslie J. Caplan, PhD, Project Officer.

Abstract: The purpose of the Mayo Clinic Traumatic Brain Injury Model System (TBIMS) conducts one site-specific project. This project, an Advocacy Training Clinical Trial (ATCT), targets the gap in knowledge concerning the most efficacious method of teaching effective self and system advocacy skills. The goal of the ATCT is to identify efficacious advocacy training methods using a randomized practical behavioral trial methodology in three Midwest states. Objectives of the ATCT are threefold: (1) develop TBI specific measures of advocacy activity, perceived control, and self efficacy; (2) implement, evaluate, and continuously improve upon the ATCT; and (3) assess the statewide impact of the ATCT on greater communities, public policy, systems change, and in the media. The ATCT is designed to establish a sustainable program of efficacious and effective advocacy training in the trial communities, and provide a model for implementation in other communities.

Find out more at: www.mayo.edu/model-system

The Rocky Mountain Regional Brain Injury System (RMRBIS)

Craig Hospital (H133A070022) led by Gale G. Whiteneck, PhD. Leslie J. Caplan, PhD, Project Officer.

Abstract: The Rocky Mountain Regional Brain Injury System (RMRBIS) conducts two site specific research projects, participates in three collaborative research modules, contributes to the longitudinal TBI National Database, and maintains a TBI Model System of care and research. Research Project R1: Atomoxetine (Strattera) for the treatment of attention disorders in individuals with TBI determines if the only drug approved for attention deficit hyperactivity disorder improves attention, behavioral functioning, and depression in individuals with TBI, using a randomized double-blind placebo-controlled crossover study design. Research Project R2: A health and wellness intervention for individuals with TBI, evaluates a specific, replicable small-group educational approach to improve health-related self-efficacy, health promoting behaviors, and health-related quality of life in individuals with TBI using a randomized wait list control group study design. If effective, this intervention could improve the health and wellness of the many people with secondary conditions and less than healthy lifestyles after TBI. Collaborative Module 1: Sexuality after TBI examines the frequency, type, and severity of changes in sexual function associated with TBI. Collaborative Module 2: Natural history of headache after TBI investigates incidence, prevalence, and types of headache after TBI. Collaborative Module 3: Enhancing Core dataset to expand research on environmental influences affecting outcomes from TBI evaluates the feasibility, reliability, and utility of recording geographic identifiers...
for place of residence after TBI.
Find out more at: www.craighospital.org/Research/TBIModelSystems.asp

Craig Hospital is also home to the National Data and Statistical Center for the TBI Model Systems. More information on the database is available at www.tbindc.org

North Texas Traumatic Brain Injury Model System (NT-TBIMS) The University of Texas Southwestern Medical Center (H133A070027) led by Ramon R. Diaz-Arrastia, MD, PhD, Theresa San Agustin, MD, Project Officer.

Abstract: This project conducts two local research projects aimed at furthering the goal of developing novel therapies and tailoring these therapies to individual patients: (1) A Phase II randomized, placebo-controlled clinical trial to determine whether therapy with recombinant human growth hormone (rhGH) during the acute rehabilitation period after TBI results in improved functional outcome; and (2) an observational study using magnetic resonance imaging (MRI) during the acute rehabilitation period to validate the use of Diffusion Tensor Imaging (DTI) as a biomarker of diffuse axonal injury. Additionally, the NT-TBIMS works collaboratively with other TBI-MS Health Module members in a modular project to develop a Brain Injury Assessment Scale, which allows reliable and validated assessment of sensorimotor impairments after TBI. The goal is that this scale be as useful in the TBI field as the NIH Stroke Scale has been in clinical trials in stroke.
Find out more at: www.utsouthwestern.edu/utsw/home/research/neurology/tbi/index.html

Ohio Regional TBI Model System Ohio Valley Center for Brain Injury Prevention and Rehabilitation (H133A070029) led by John D. Corrigan, PhD; Jennifer Bogner, PhD. Delores Watkins, Project Officer.

Abstract: This project includes one local research project and a collaborative research module. The local project is an extension of two previous randomized clinical trials in which a targeted financial incentive was found efficacious for engaging and retaining persons with TBI in substance abuse treatment. The current study investigates the efficacy of a financial incentive for engendering attendance at work as persons with TBI and substance use disorders initiate employment. The collaborative research module replicates and extends a preliminary study recently completed at OSU. That project used geographic identifiers to compile data about the social and economic characteristics of a person’s neighborhood. Researchers then examined the contribution of these environmental factors to outcomes from TBI. The current module contributes to an evaluation of the utility of adding a geographic identifier, based on a person’s residence at follow-up, to the TBI Model Systems National Dataset. With this identifier, future Model Systems researchers could access an ever-growing array of information about the environment and link it to Model Systems data about an individual’s outcome. Dissemination efforts include “SynapShots”, an educational website produced with the Brain Injury Association of America, and a systematic review of Screening and Brief Interventions for the Model Systems Knowledge Translation Center.
Find out more at: www.ohiovalley.org

JFK-Johnson Rehabilitation Institute TBI Model System JFK Johnson Rehabilitation Institute (H133A070030) led by Keith D. Cicerone, PhD. A. Cate Miller, PhD, Project Officer.

Abstract: Site-specific research represents a sustained investigation of cerebral activation in patients with disorders of consciousness (DOC); vegetative state (VS) and minimally conscious state (MCS). This project tests a novel functional MRI protocol that is designed to reliably detect conscious awareness in patients who may be unable to execute behavioral signs of active cognitive processing, using a hierarchical stimulation paradigm that systematically assesses levels of cognitive processing in the auditory and visual systems. A collaborative module extends prior investigations of the effectiveness of specialized, post-acute brain injury rehabilitation. This project is driven by the question of how to characterize the course of post-acute brain injury rehabilitation, and its impact on the long term outcomes of people with brain injuries. A longitudinal, observational study characterizes postacute rehabilitation in the TBI Model Systems, and examines the pathways of postacute rehabilitation in relation to case mix variables, patterns of service utilization, barriers to service delivery, and participants’ perceived needs and satisfaction with treatment. This collaborative project examines the contribution of postacute rehabilitation to functional and psychosocial outcomes at one and two years after injury using multivariate analyses and causal modeling.
Find out more at: www.njrehab.org/tbims

University of Washington Traumatic Brain Injury Model System University of Washington (H133A070032) led by Kathleen R. Bell, MD. Theresa San Agustin, MD, Project Officer.

Abstract: University of Washington’s Traumatic Brain Injury Model System (UW-TBIMS) conducts two site-specific projects. The first is a randomized controlled intervention study evaluating the effect of a structured, telephone-based mentoring program for caregivers focusing on self-management skills. This research is particularly important because caregivers are so crucial to the successful rehabilitation and community re-integration of persons with TBI and the literature on successful interventions for this population is so sparse. The use of a telephone-based program allows researchers to reach those (especially in rural regions) who lack ready access to knowledgeable advice, behavior change support, and specialty care sufficient to maintain the health of their significant other and themselves. The second project utilizes a large and rich database to predict a number of important long-term outcomes. The modular project studies the natural history of headache under conditions of usual care during the first year after TBI. This project characterizes the course and nature of headache, a common but poorly studied consequence of TBI. It examines the impact of headache on outcome and its potential modifiers, describes patient treatment preferences, and lays the foundation for a multi-site clinical trial.
Find out more at: depts.washington.edu/rehab/tbi

New York Traumatic Brain Injury Model System (NYTBIMS) Mount Sinai School of Medicine (H133A070033) led by Wayne A. Gordon, PhD Leslie J. Caplan, PhD, Project Officer.

Abstract: The goals of the research program of The New York Traumatic Brain Injury Model System (NYTBIMS) are to: (1) demonstrate and evaluate a multidisciplinary system of care for persons with TBI in the New York City metropolitan area, including a
number of innovative clinical programs; (2) contribute longitudinal data to the National Database of the TBI Model Systems program; and (3) conduct one module and two local studies to: (a) systematically study sleep architecture, insomnia, and other types of sleep disorders after TBI, to better understand post-TBI fatigue; and (b) evaluate the effectiveness of exercise as a treatment of post-TBI fatigue, mood, and cognition.

Find out more at: www.mssm.edu/tbicentral/nytbims/

Virginia Commonwealth Traumatic Brain Injury Model System
Virginia Commonwealth University (H133A070036) led by Jeffrey S. Kreutzer, PhD. Theresa San Agustin, MD, Project Officer. Abstract: This project utilizes rigorous scientific methods to examine the benefits of intervention for survivors of TBI and their families before and after inpatient rehabilitation discharge. Traumatic Brain Injury Model Systems (TBIMS) and other researchers have expended considerable energy delineating outcomes. For example, researchers have thoroughly documented problems after injury, including memory disturbance, impaired self-awareness, executive skills dysfunction, slowness, visual dysfunction, poor motor coordination, and behavioral disorders. Recent studies have identified a high prevalence of depression, with many survivors reporting feelings of hopelessness, diminished self-esteem, and social isolation. Brain injury also affects the family system; family members commonly describe emotional distress, lack of respite, financial stress, and lack of community support. Projects at the Model System focus on both survivors and families. One study is a randomized controlled trial to examine the efficacy of a structured approach to the treatment of acute cognitive and neurobehavioral problems. A second study is a randomized controlled trial to examine the benefits of an intervention program for family crisis and support.

Find out more at: www.tbi.pmr.vcu.edu

Northern New Jersey Traumatic Brain Injury System (NNJTBI) Kessler Medical Rehabilitation Research and Education Corporation (KMRREC) (H133A070037) led by Elie P. Elovic, MD. A. Cate Miller, PhD, Project Officer. Abstract: The Northern New Jersey Traumatic Brain Injury System (NNJTBI) conducts both a site-specific research study and a collaborative research module. These projects, both related to ongoing NIH-funded studies, contribute to evidence-based rehabilitation interventions and quality of life measurement to improve the lives of individuals with TBI, as follows: (1) An innovative, double-blind, randomized controlled trial of a cognitive rehabilitation intervention utilizing a proven methodology shown to be effective with the multiple sclerosis population; and (2) a collaborative module that adapts, develops, and validates an innovative quality-of-life outcome measurement system for use in TBI intervention research. Each of these projects has been subjected to initial pilot testing to assure the applicability and feasibility of the methodology. The NNJTBI is a cooperative effort of the Kessler Medical Rehabilitation Research and Education Center (KMRREC), KIR, and trauma centers from the University of Medicine and Dentistry of New Jersey - The New Jersey Medical School (UMDNJ-NJMS), Hackensack University Hospital, Morristown Memorial Hospital, and St. Joseph’s Hospital.

Find out more at: www.kmrrec.org/nnjtbis/index.php

The Moss Traumatic Brain Injury Model System Albert Einstein Healthcare Network (H133A070040) led by Tessa Hart, PhD. A. Cate Miller, PhD, Project Officer. Abstract: The Moss TBIMS includes two site-specific research projects embedded within a state-of-the-art TBI treatment and clinical research facility. Project 1 is a placebo-controlled pilot study of the effects of dextroamphetamine (DEX) on attention, engagement in therapy, cognitive and motor speed, and other outcomes in subacute TBI. This project also examines the possibility that DEX accelerates the pace of functional recovery in the subacute phase. Project 2 is a cross-national collaboration with a specialty TBI service in a Copenhagen hospital, which has many similarities to the Moss TBIMS in terms of patient mix, treatment philosophy, and cultural milieu. The Copenhagen facility provides significantly longer and, in some respects, more intensive inpatient care and rehabilitation compared to Moss (and other US rehabilitation facilities), even for patients with comparable injury severity. This affords a natural experiment in which persons with TBI treated at the two facilities are compared on a range of 6- and 12-month outcomes, including functional status, emotional well-being and quality of life, and caregiver burden. The Moss TBIMS also collaborates in multi-center longitudinal database research and collaborative module projects. In addition, extensive knowledge translation projects provide evidence-based skills and knowledge enhancement for clinicians specializing in TBI care and for consumers via collaboration with the Brain Injury Association of Pennsylvania.
Carolina Traumatic Brain Injury Rehabilitation and Research System (CTBIRRS) Carolina HealthCare System (H133A070042) led by Flora M. Hammond, MD. A. Cate Miller, PhD, Project Officer.

Abstract: The Carolina Traumatic Brain Injury Rehabilitation and Research System (CTBIRRS) focuses on the challenging problem of post-traumatic irritability and aggression using a comprehensive, rigorous approach to generate and disseminate new knowledge on this high impact, pervasive, and under-studied problem. This approach to understanding irritability entails two randomized, controlled studies that build on a solid base of prior research by the investigators in this area: (1) a multi-center module study: “A Multi-Center, Parallel-group, Randomized, Double-Blind, Placebo-Controlled Trial of Amantadine Hydrochloride for the Treatment of Chronic TBI Irritability and Aggression: A Replication Study”; and (2) a local research study: "Carbamazepine for the Treatment of Chronic Post-TBI Irritability and Aggression: A 42-day Single-Site, Forced-Titration, Parallel-Group, Randomized, Double-Blind, Placebo-Controlled Trial."

Find out more at: www.carolinasrehabilitation.org/body.cfm?id=191

The Texas Traumatic Brain Injury Model System of TIRR The Institute for Rehabilitation and Research (TIRR) (H133A070043) led by Mark Sherer, PhD. Pimjai Sudsawad, ScD, Project Officer.

Abstract: The Texas TBI Model System of TIRR conducts a program of research, dissemination activities, and clinical care designed to address social relationships and to improve outcomes for persons with TBI. Research activities include: (1) contributions to the TBI Model Systems National Database, (2) a collaborative, multi-center, research module project on sexuality after TBI, and (3) a local project on social communication difficulties after TBI. A collaborative project on sexuality determines the frequency, type, and severity of changes in sexual functioning after TBI. As part of this project, researchers conduct the first randomized, clinical trial of an intervention to increase satisfaction with sexual functioning and comfort level in discussing sexual issues for persons with TBI and their partners. A local project on social communication conducts a randomized clinical trial of an intervention to improve social communication skills and social integration for persons with TBI, with the largest sample size of any similar study and one of only two randomized controlled trials conducted in this area for over 20 years.

Find out more at: www.memorialhermann.org/locations/TIRR_tbi.html

Michigan Traumatic Brain Injury Model System (SEMTBIS) Wayne State University (H133A080044) led by Robin A. Hanks, PhD. A. Cate Miller, PhD, Project Officer.

Abstract: SEMTBIS focuses on the following major areas: research, education, clinical and systems analysis studies, collection and dissemination of data, and promotion of professional development for individuals with disabilities as well as their family members or caregivers. Two studies address enhancement of health and function of persons with TBI. Projects evaluate the predictive validity of three newly developed brain magnetic resonance imaging (MRI) techniques with respect to functional independence, level of disability, and neurobehavioral outcomes at one and two years post-injury; and examine the safety and efficacy of an antibiotic medication that is thought to positively influence neuroplasticity in the acute phases of recovery from TBI. SEMTBIS recruits, educates, and promotes professional development of individuals with disabilities as well as their family members or caregivers; with consumer involvement in the advisory board and as project staff. SEMTBIS continues to participate in clinical and systems analysis studies of the TBIMS by collecting and contributing data to a uniform, standardized national database on patient characteristics, diagnoses, causes of injury, interventions, outcomes, and costs. Evaluation of these research projects and the overall operations of the SEMTBIS employs a multifaceted approach of quantifiable and objective procedures.

Find out more at: www.semtbis.org

Midwest Regional Traumatic Brain Injury Model System: Innovative Approaches to Improve Cognition, Function, and Community Living Rehabilitation Institute Research Corporation (H133A080045) led by Elliot J. Roth, MD; Felise Zollman, MD. A. Cate Miller, PhD, Project Officer.

Abstract: The Midwest Regional Traumatic Brain Injury Model System (MRTBIMS) accomplishes several important objectives in support of an interdisciplinary, multidimensional center focused on providing and improving care for people with traumatic brain injury (TBI). MRTBIMS establishes a coordinated, multilevel, interdisciplinary system of care for people with TBI, including pre-hospital, emergency, acute, long-term acute, intensive rehabilitation, and community care. This continuum of care is provided at Northwestern Memorial Hospital, RML Specialty Hospital, and the Rehabilitation Institute of Chicago and its System of Care.

Find out more at www.ric.org/research/centers/MRTBIMS/index.aspx

Current Literature Selections from REHABDATA


NARICAccession Number: J54178. Project Number: H133A020501; H133A020524.

Abstract: Study examined the suitability of the Barroso Fatigue Scale (BFS) for assessment of fatigue after TBI. The 56-item BFS, which can be used to score the Fatigue Severity Scale (FSS), the Fatigue Assessment Instrument (FAI), and the Multidimensional Fatigue Inventory (MFI), was completed by 183 individuals with TBI in California, and by 233 individuals with and 85 without TBI in New York. Results showed that participants with and without TBI reported high levels of fatigue on the FSS and the FAI. Factor analysis of 40 BFS items resulted in 5 factors that accounted for 65 percent of the

Abstract: Article provides an overview of the changes that occurred in the TBIMS during the 2002 to 2007 funding cycle in which 16 centers conducted service delivery and research activities under this program. It also provides an introduction to and brief descriptions of the 13 articles included in this journal issue that discuss the research conducted by the TBIMS program during that same time period.


Abstract: Study investigated whether age at injury was associated with progressive functional decline among patients enrolled in the TBIMS project. The Disability Rating Scale (DRS), assessed at 1- and 5-year follow-up evaluations, was the primary functional outcome measure. Participants were separated into 3 age groups: youngest (16 to 26 years), intermediate (27 to 39), and oldest (over 40). DRS scores were comparable across age groups at admission to a rehabilitation center. Although DRS scores for the two younger groups improved significantly from year 1 to year 5, the greatest amount of improvement in disability was seen among the youngest group of survivors. In addition, after classifying the patients according to whether their DRS scores improved, declined, or remained stable over time, the likelihood of decline was found to be greater for the two older groups than for the youngest group.


Abstract: Study examined the effects of a problem-solving training (PST) program for family caregivers of individuals with TBI. Participants were randomized into a PST group or an education-only control group. Caregivers in the PST group received four in-home problem-solving sessions and 8 telephone follow-up calls over the course of their year-long participation. Control group participants received written educational materials and monthly telephone calls throughout their year of participation. Caregiver depression, health complaints, well-being, and social problem-solving abilities were assessed at baseline, and again after 4, 8, and 12 months of participation. Caregivers receiving PST reported significant decreases in depression, health complaints, and in dysfunctional problem-solving styles over time. No effects were observed on caregiver well-being, burden, or constructive problem-solving styles.


Abstract: Study examined age-related differences in functional outcomes following TBI. Seventy-six children admitted to a pediatric acute rehabilitation hospital were compared with 2,548 adult patients in the TBI model system national database. The Functional Independence Measure and (FIM) the Wee FIM (WheeFIM) scores were used to determine functional outcomes. Analysis revealed that increasing age was significantly associated with improved outcome in children and with poorer outcome in adults. Overall, the findings suggest that children recover more completely and efficiently than adults, and older children recover more completely and efficiently than younger children.


Abstract: Study examined the feasibility of an Internet-based cognitive rehabilitation program for individuals with acquired brain injuries and memory impairment. Ten individuals with a history of an acquired brain injury and documented memory impairment received training on how to use the instant messaging (IM) system. They were then scheduled to log into the system weekly to participate in online cognitive rehabilitation therapy sessions over the Internet. Treatment focused on training to use a calendar system to improve accuracy and efficiency in home and work tasks. Participants underwent assessment of cognitive function, psychological status, level of functioning, and use of compensation techniques both before and after treatment. Results indicated that all of the participants were able to learn to use the IM system. Only two of the ten participants missed any planned sessions, despite severe memory impairments.


Abstract: Semistructured interviews were conducted to identify unmet needs among 80 individuals with TBI and 85 of their family caregivers. www.msktc.washington.edu

Visit the Model Systems Knowledge Translation Center to learn more about the SCI, TBI, and Burn Model Systems.
primary family caregivers. Respondents described their needs across four phases that paralleled transitions in settings, treatments, and responsibilities: acute care, inpatient rehabilitation, return home, and living in the community. Interview content was analyzed and categorized into major themes reflecting an issue or need. Analysis revealed that “understanding injuries, treatments, and consequences” was the only theme mentioned by both groups in all four phases. Prominent themes during the inpatient phase included provider quality, emotional support, and understanding the injuries. Prominent themes during the latter two phases included guidance, life planning, community integration, and behavioral and emotional issues.

Kreuter, Jeffrey S.; Marwitz, J. (2007) Marital stability after brain injury: An investigation and analysis. *Neuropsychological Rehabilitation, 22*(1), 53-59. NARIC Accession Number: J52430. Project Number: H133A020516; H133AP040006. Abstract: The separation and divorce rates were examined and the relationship among injury factors, demographics, and marital stability factors were analyzed for 120 people with traumatic brain injury. The separation rate was 8 percent and the divorce rate was 17 percent. People who were married longer before their injury, victims of non-violent injuries, older people, and people with less severe injuries were more likely to remain married. Gender, ethnicity, educational level, time since injury, and post-injury employment status were unrelated to the risk of separation or divorce.

Hart, T., Hanks, R. (2007) Blame attribution in intentional and unintentional traumatic brain injury: Longitudinal changes and impact on subjective well-being. *Rehabilitation Psychology, 52*(2), 152-161. NARIC Accession Number: J52457. Project Number: H133A020503; H133A020505; H133A020508; H133A020515; H133A070033. Abstract: Study examined long-term changes in attribution of blame to self and others, and concern over cause of injury, in both violence-related (intentional) and accidental (unintentional) TBI. Blame attribution was assessed during acute rehabilitation and at 1-year follow-up, and a number of measures of subjective well-being were used to explore the relationships among blame, changes in blame over time, intentionality of injury, and emotional health and well-being. At both time points, participants with intentional TBI blamed others more while those with unintentional TBI blamed themselves more. Those with unintentional injury became less concerned about the cause of injury over time, while those with intentional injury became more concerned. Increasing concern over the cause of injury and persistent blame of other people were associated with high levels of emotional distress, while decreasing concern over time was related to greater satisfaction with life.

Brown, A., Malec, J. (2007) Impairment at rehabilitation admission and 1 year after moderate-to-severe traumatic brain injury: A prospective multi-center analysis. *Brain Injury, 21*(7), 673-680. NARIC Accession Number: J53128. Project Number: H133A020507; H133A020516; H133A020524. Abstract: Physical examination variables were analyzed for all subjects in the TBIMS database from 1988 to 2002 that had data both at rehabilitation admission and at 1 year after injury. The variables examined included measures of audition, vision, swallowing, limb strength, limb coordination, limb tone, sitting balance, and standing balance. Results showed that standing balance was more commonly and severely impaired at admission and at 1 year, compared to the other examination variables. Impaired limb strength was most common and persistent over the study period compared to coordination and tone, but strength was normal in more than 80 percent of the subjects at 1-year follow-up. Dysphagia and impaired sitting balance present at admission largely resolved by 1 year. Impairment in audition and vision was uncommon and changed very little during the study period.

Arango-Lasprilla, J., Rosenthal, M. (2007) Traumatic brain injury and functional outcomes: Does minority status matter?. *Brain Injury, 21*(7), 701-708. NARIC Accession Number: J53131. Project Number: H133A011403; H133A020515. Abstract: Data were extracted from the TBIMS database to examine differences in demographic, injury, and rehabilitation characteristics and functional outcomes at rehabilitation admission, discharge, and 1 year post-injury among African Americans, Hispanics, and Whites. At discharge and 1 year post-injury, minorities had poorer functional outcomes compared with Whites on the following measures: Disability Rating Scale (DRS), Functional Independence Measure (FIM), Glasgow Outcome Scale-Extended, and Community Integration Questionnaire (CIQ). After controlling for sociodemographic, injury, and functional characteristics at admission, Hispanics and African Americans still showed worse functional outcomes at 1-year post-injury compared with Whites on the DRS, FIM, and CIQ. There were no significant differences between African Americans and Hispanics.

Cicerone, K., Azulay, J. (2007) Perceived self-efficacy and life satisfaction after traumatic brain injury. *Journal of Head Trauma Rehabilitation, 22*(5), 257-266. NARIC Accession Number: J53148. Project Number: H133A020518. Abstract: Study investigated the impact of activity-related satisfaction and perceived self-efficacy on quality of life (QOL) after TBI. Participants included 97 adults who were living in the community at least 6 months after sustaining a TBI. Functioning in the community was assessed with the Community Integration Questionnaire (CIQ). Satisfaction with community activities was assessed with the Quality of Community Integration Questionnaire (QCIQ). The Perceived Quality of Life Scale (PQOL) and...
the Satisfaction With Life Scale (SWLS) were used to evaluate QOL and the TBI Self-Efficacy Questionnaire assessed the participants’ self-efficacy to perform self-management behaviors. Analyses revealed that participants’ self-efficacy for the management of cognitive symptoms made the single greatest contribution to predicting QOL, as measured by both the SWLS and the PQLF, and was also significantly related to CIQ total scores. After accounting for the contribution of cognitive self-efficacy to QOL, CIQ indices no longer contributed to QOL, consistent with the view that perceived self-efficacy beliefs mediate the relationship between the individual’s expectations and achievements and thereby contribute to overall subjective well-being after TBI.


Abstract: Study evaluated the efficacy of a specific, replicable group treatment program for improving social communication skills after TBI. Data were collected from 52 subjects who were randomized to treatment or deferred treatment conditions with follow-up at 3, 6, and 9 months post-treatment. Treatment consisted of 12 weekly group sessions to improve social communication skills. Outcome measures included: the Profile of Functional Impairment in Communication (PFIC), the Social Communication Skills Questionnaire-Adapted (SCSQ-A), the Goal Attainment Scale (GAS), the Craig Handicap Assessment and Reporting Technique-Short Form social integration and occupations subscales, the Community Integration Questionnaire social integration and productivity subscales, and the Satisfaction With Life Scale (SWLS). After 12 weeks of treatment for all participants, analysis showed significant improvements from baseline on 9 of the 10 PFIC subscales, the GAS, and the SWLS. At 6-month follow-up, scores were significantly better than baseline on 6 of 10 PFIC scales, the SCSQ-A, the GAS, and the SWLS.


Abstract: This article suggests strategies that rehabilitation researchers can use to maximize their work, to turn "research results into gold", particularly in terms of being effective in reaching and convincing a target audience to utilize the findings. In the disability and rehabilitation research community, it is important for researchers to be cognizant of how published results of research studies can facilitate or limit their use in answering important evidence-based questions.


Abstract: Study evaluated the efficacy of a behavior management program for persons with acquired brain injury delivered in natural home and community settings for people with brain injury and their caregivers. The Natural Setting Behavior Management (NSBM) program involved education and individualized assistance with behavior management. Participants in the NSBM group were compared with an education-only group and a control group. Changes in frequency of targeted problem behaviors and data on caregiver burden and stress were analyzed. Results indicated a significant reduction in target behaviors for the NSBM group at a 3-month follow-up. Differences in caregiver stress, burden, and aggression were not statistically significant.

Abstract: Study examined changes in the Functional Independence Measure (FIM) cognitive scores from year 1 to year 5 after TBI. Patients were assessed for the five component items of the FIM cognitive subscale: comprehension, expression, social interaction, problem solving, and memory. On the FIM cognitive total score, 26 percent of patients improved, 61 percent stayed the same, and 11 percent got worse. On the FIM communication items, 19 percent of patients improved, 68 percent stayed the same, and 13 percent worsened. On the memory and problem solving items, 48 percent stayed the same, and 19 percent worsened. Several demographic and functional indicators predicted this improvement and worsening, some of which were available at the time of injury and most were present at 1 year after injury.

**Developing Cutting Edge Tools for Research and Practice**

Research Tools Developed by the Model Systems

**Tool:** The Modified Story Memory Technique

Developed by Northern New Jersey Traumatic Brain Injury System (H133A070037)

**Goal:** The purpose of the current treatment protocol is to test its efficacy in individuals with moderate to severe TBI with a documented impairment in new learning and memory functioning. The Modified Story Memory Technique has the potential to treat memory disorder after moderate TBI. Cognitive dysfunction affects almost all aspects of life. This includes employment, socialization, daily functioning, emotional health and quality of life. Past efforts at developing cognitive remediation have had only a limited scope. This tool developed by this protocol will assess in a large double blinded fashion the efficacy of this modality and how it affects overall function. In a double blinded placebo controlled fashion its utility for short term improvement, the efficacy of booster sessions and long term benefits will all be assessed on both neuropsychological measures and real life function.

**Results:** Study in progress.

**Tool:** Self Efficacy for Symptom Management

Developed by JFK Johnson Rehabilitation Institute TBI Model System (H133B070030)

**Goal:** The Self Efficacy for Symptom Management scale (SEsx) is intended to be used as a measure of confidence or perceived self-efficacy for managing chronic conditions. Perceived self-efficacy belief has been shown to influence a broad range of health-related and rehabilitation outcomes and may be particularly relevant in examining the effects of neuropsychological rehabilitation. Previous research has demonstrated an empirical relationship between generalized self-efficacy and participation after traumatic brain injury. We adapted a self-efficacy measure developed and used with people with chronic medical disability, for use with people who have sustained a brain injury.

**Results:** The project examined the psychometric properties of the SEsx in 115 people with TBI and 58 volunteers without neurologic injury or illness. Confirmatory factor analysis was consistent with the initially proposed subscales. The first factor (SEcog) accounted for 57.8% of variance, the second factor (SEemot) accounted for 10.9% of variance, and the third factor (SEsoc) accounted for 6.9% of variance. Within the brain injury sample, the total scale demonstrated an internal reliability of .93 with subscale reliabilities between .77 and .93. Similar findings were obtained for the non-injured participants. Construct validity demonstrated by correlating a measure of satisfaction with cognitive functioning with total SE (r = 0.73) and SEcog (r = .73, p < .001). Total SEsx symptoms resulting from an acquired brain score was also significantly related to injury. General health status (r = 0.50). Differences between the TBI and non-injured samples were significant for the SE total and all subscales with moderate to large effect sizes. The tool assesses self-efficacy for the management of symptoms after TBI, and therefore provides a measure that can be distinguished from the presence of neuropsychological impairments or residual symptoms. This scale assesses a construct that is known to be a strong predictor of functioning, but was specifically developed in relation to the prominent symptoms of TBI and therefore closes a gap that existed in this area of measurement. The tool provides a measure of one aspect of psychological health that has been shown to be strongly related to life satisfaction after TBI and also appears to represent a potential mechanism of effective treatment. This tool will be of benefit to future researchers investigating interventions and/or late recovery after TBI, to clinicians seeking to assess patients' confidence in managing and compensating for the residual symptoms of TBI, and potentially to people with TBI by providing a novel focus for interventions.

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