Rehabilitation

Current Awareness Bulletin

May 2016

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Jason Ovens
Head of Library & Knowledge Services
Title: Unemployment among women with multiple sclerosis: the role of coping and perceived stress and support in the workplace.

Citation: Psychology, Health & Medicine, 2016, vol./is. 21/4(496-504), 13548506
Author(s): Strober, L.B., Arnett, P.A.

Title: Motor Function Cutoff Values for Independent Dressing in Stroke Patients.

Citation: The American journal of occupational therapy : official publication of the American Occupational Therapy Association, May 2016, vol. 70, no. 3, p. 7003290010p1, 0272-9490 (2016 May-Jun)
Author(s): Fujita, Takaaki, Sato, Atsushi, Yamamoto, Yuichi, Otsuki, Koji, Tsuchiya, Kenji, Tozato, Fusae

Abstract: This study established motor function cutoff values for dressing independence in inpatients with stroke. Ninety-eight first-time inpatients with stroke were divided into groups on the basis of independence level in dressing, and receiver operating characteristic curves were determined for balance, motor function of affected limbs, trunk function, motor function of unaffected upper limb, and cognitive function. Area under the curve for the Berg Balance Scale (BBS) was highest for the different motor functions. In distinguishing independence group and supervision or less level group, the cutoff value for the BBS was 44 points (sensitivity = 85%, specificity = 93%). In distinguishing supervision or higher level group and dependence group, the cutoff value for the BBS was 32 points (sensitivity = 94%, specificity = 79%). Balance was strongly correlated with the level of dressing independence, and cutoff values for the BBS were indicators of the balance required to reach independent and supervision levels of dressing. Copyright © 2016 by the American Occupational Therapy Association, Inc.


Title: A New Zealand pilot randomized controlled trial of a web-based interactive self-management programme (MSInvigor8) with and without email support for the treatment of multiple sclerosis fatigue.

Citation: Clinical rehabilitation, May 2016, vol. 30, no. 5, p. 454-462, 1477-0873 (May 2016)
Author(s): van Kessel, Kirsten, Wouldes, Trecia, Moss-Morris, Rona

Abstract: To pilot and compare the efficacy of an internet-based cognitive behavioural therapy self-management programme with (MSInvigor8-Plus) and without (MSInvigor8-Only) the use of email support in reducing fatigue severity and impact (primary outcomes), and depressed and anxious mood (secondary outcomes). Randomized controlled trial using an independent randomization system built into the website and intention-to-treat analysis. Participants were recruited through the local Multiple Sclerosis Society and hospital neurological services in New Zealand. A total of 39 people (aged 31-63 years), experiencing multiple sclerosis fatigue, able to walk with and without walking aids, were randomized to MSInvigor8-Only (n = 20) or to MSInvigor8-Plus (n = 19). MSInvigor8 is an eight-session programme based on cognitive behaviour therapy principles including psycho-education, self-monitoring, and changing unhelpful activity and thought patterns. Outcome measures included fatigue severity (Chalder Fatigue
Scale) and impact (Modified Fatigue Impact Scale), and anxiety and depression (Hospital Anxiety and Depression Scale). Assessments were performed at baseline and at 10 weeks. The MSInvigor8-Plus condition resulted in significantly greater reductions in fatigue severity ($F [1,36] = 9.09, p < 0.01$) and impact ($F [1,36] = 6.03, p < 0.02$) compared with the MSInvigor8-Only condition. Large between-group effect sizes for fatigue severity ($d = 0.99$) and fatigue impact ($d = 0.81$) were obtained. No significant differences were found between the groups on changes in anxiety and depression. MSInvigor8 delivered with email-based support is a potentially promising, acceptable, and cost-effective approach to treating fatigue in people with multiple sclerosis in New Zealand. © The Author(s) 2015.

Title: Prevalence, Risk Factors, and Correlates of Anxiety at 1 Year After Moderate to Severe Traumatic Brain Injury.

Citation: Archives of Physical Medicine & Rehabilitation, 2016, vol./is. 97/5(701-707), 00039993
Author(s): Hart, Tessa, Fann, Jesse R., Chervoneva, Inna, Juengst, Shannon B., Rosenthal, Joseph A., Krellman, Jason W., Dreer, Laura E., Kroenke, Kurt

Title: Efficacy and acceptability of a home-based, family-inclusive intervention for veterans with TBI: A randomized controlled trial.

Citation: Brain Injury, 2016, vol./is. 30/4(373-387), 02699052
Author(s): Winter, Laraine, Moriarty, Helene J., Robinson, Keith, Piersol, Catherine V., Vause-Earland, Tracey, Newhart, Brian, Iacovone, Delores Blazer, Hodgson, Nancy, Gitlin, Laura N.

Title: The diverse vocational experiences of five individuals returning to work after severe brain injury: A qualitative inquiry.

Citation: Brain Injury, 2016, vol./is. 30/4(422-436), 02699052
Author(s): Bush, Erin J., Hux, Karen, Guetterman, Timothy C., McKelvey, Miechelle

Title: "Reps" Aren't Enough: Augmenting Functional Electrical Stimulation With Behavioral Supports Significantly Reduces Impairment in Moderately Impaired Stroke.

Citation: Archives of physical medicine and rehabilitation, May 2016, vol. 97, no. 5, p. 747-752, 1532-821X (May 2016)
Author(s): Page, Stephen J, Levine, Peter G, Basobas, Brittani A

Abstract: To determine the impact of repetitive task-specific practice (RTP) integrating electrical stimulation and behavioral supports on upper extremity (UE) impairment, gross manual dexterity, and paretic UE amount and quality of use in chronic stroke survivors exhibiting moderate, stable UE deficits. Case series with 3-month follow-up. Outpatient rehabilitation hospital. Persons (N=9) who experienced a stroke >12 months before enrollment and exhibiting chronic, moderate, stable UE impairment. After administering outcome measures, RTP was administered 3d/wk for 120 minutes with an electrical stimulation neuroprosthesis (60min in a supervised clinical setting; 60min at home) over 8 weeks. Behavioral supports (eg, behavior contract; weekly reviews of UE use) were provided during clinical sessions and integrated into home exercise sessions to increase paretic UE use and maximize carryover to subjects' community environments. The UE section of the Fugl-Meyer Impairment Scale, the Box and Block Test, and the Motor Activity Log. Subjects exhibited statistically significant (P<.01) increases on all measures at both time-point
comparisons (ie, preintervention to postintervention; preintervention to 3mo postintervention). Subjects reported a new ability to perform valued activities they had not performed in months. Addition of behavioral supports to RTP augmented by electrical stimulation significantly increased paretic UE use and function. Significant motor changes were exhibited across ages and etiologies, and no other intervention was administered to this stable population, making it likely that results were not due to chance and suggests a larger trial is justified. Copyright © 2016 American Congress of Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

Title: Task-Dependent Bimanual Coordination After Stroke: Relationship With Sensorimotor Impairments.

Citation: Archives of physical medicine and rehabilitation, May 2016, vol. 97, no. 5, p. 798-806, 1532-821X (May 2016)

Author(s): Kantak, Shailesh S, Zahedi, Nazaneen, McGrath, Robert L

Abstract: To determine (1) bimanual coordination deficits in patients with stroke using 3-dimensional kinematic analyses as they perform naturalistic tasks requiring collaborative interaction of the 2 arms; and (2) whether bimanual coordination deficits are related to clinical measures of sensorimotor impairments and unimanual performance of the paretic arm. Case-control study. Rehabilitation hospital research institute. Participants (N=24) were patients with unilateral chronic stroke (n=14) and age-matched controls (n=10). Not applicable. Temporal coordination between the 2 hands as participants performed (1) a symmetric task: reach to pick up a box using both hands; and (2) an asymmetric task: open a drawer with 1 hand to press a button inside with the other hand. During the symmetric task, patients and controls showed preserved temporal coupling while transporting the hands to the box. However, on reaching the box, patients demonstrated an impaired ability to cooperatively interact their 2 arms for an efficient pickup. This led to significantly longer pickup times compared with controls. Pickup time positively correlated with proprioceptive deficits of the paretic arm. During the asymmetric task, patients had a longer time delay between drawer opening and button pressing movements than controls. The deficits in asymmetric coordination did not significantly correlate with sensorimotor impairments or unimanual paretic arm performance. Bimanual coordination was impaired in patients poststroke during symmetric and asymmetric bimanual tasks that required cooperative interaction between the 2 arms. While the proprioceptive system contributes to symmetric cooperative coordination, commonly tested measures of paretic arm impairment or performance, or both, do not strongly predict deficits in bimanual coordination. Copyright © 2016 American Congress of Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

Title: Multiple sclerosis and risk of young-adult-onset Hodgkin lymphoma.

Citation: Neurology® neuroimmunology & neuroinflammation, Jun 2016, vol. 3, no. 3, p. e227., 2332-7812 (June 2016)

Author(s): Montgomery, Scott, Hajiebrahimi, Mohammadhossein, Burkill, Sarah, Hillert, Jan, Olsson, Tomas, Bahmanyar, Shahram

Abstract: To determine whether there is an association between multiple sclerosis (MS) and young-adult-onset Hodgkin lymphoma (YAHL) as this will signal etiologic similarities relevant both to inherited characteristics and environmental exposures in childhood. Swedish general population registers identified a cohort of 29,617 with an MS diagnosis between 1968 and 2012, matched with a cohort of 296,164 without MS. Cox regression was used to assess the association of MS with subsequent YAHL (defined as onset between ages 15 and 39 years; n = 20), with adjustment, for age/period, sex, county of residence, and level of education. The adjusted hazard ratio (and
95% confidence interval) for the association of MS with YAHL is 3.30 (1.01-10.73), resulting from 4 and 16 events in the MS and non-MS cohorts, respectively. All 4 of the YAHL diagnoses in MS occurred in women, and the association of MS with YAHL has a hazard ratio of 4.04 (1.17-13.94) among women. There was no notable association of MS with older-onset Hodgkin lymphoma. There may be common risks for YAHL and MS, consistent with an etiologic role in MS for early-life exposures, such as to infectious agents.

Full Text:
Available from Highwire Press in Neurology: Neuroimmunology and Neuroinflammation

Title: Direct admission to stroke centers reduces treatment delay and improves clinical outcome after intravenous thrombolysis.

Citation: Journal of clinical neuroscience : official journal of the Neurosurgical Society of Australasia, May 2016, vol. 27, p. 74-79, 1532-2653 (May 2016)
Author(s): Kim, Dae-Hyun, Bae, Hee-Joon, Han, Moon-Ku, Kim, Beom Joon, Park, Sang-Soon, Park, Tai Hwan, Lee, Kyung Bok, Kang, Kyusik, Park, Jong-Moo, Ko, Youngchae, Lee, Soo Joo, Choi, Jay Chol, Kim, Joon-Tae, Cho, Ki-Hyun, Hong, Keun-Sik, Cho, Yong-Jin, Kim, Dong-Eog, Lee, Jun, Lee, Junyoung, Oh, Mi Sun, Yu, Kyung-Ho, Lee, Byung-Chul, Nah, Hyun-Wook, Cha, Jae-Kwan

Abstract: We aimed to examine whether direct access to hospitals offering intravenous thrombolysis is associated with functional outcomes in patients with acute ischemic stroke treated with intravenous thrombolysis. We enrolled patients who received intravenous thrombolysis within 4.5hours of symptom onset using a prospective multicenter registry database. Patients referred directly from the field to organized stroke centers were compared with those who were transferred from non-thrombolysis-capable hospitals in terms of clinical outcomes at 90days after intravenous recombinant tissue plasminogen activator treatment. We also investigated onset-to-door time and onset-to-needle time according to admission mode. A total of 820 patients (mean age of 67.3years and median National Institutes of Health Stroke Scale score of 9) were enrolled. Seventeen percent of patients with AIS who received intravenous thrombolytic therapy at 12 hospitals (n=142) were transferred from other hospitals. The direct admission group had a shorter median onset-to-admission time (63 versus 121minutes, P<0.001) and onset-to-needle time (110 versus 161minutes, P<0.001) as compared with the indirect admission group. Direct admission was associated with a good outcome with an odds ratio of 1.57 (95% confidence interval: 1.02-2.39, P=0.036) after adjustment for baseline variables. Direct admission to a hospital with intravenous thrombolysis facilities available at all times was associated with shorter onset-to-needle time and better outcome in patients with AIS undergoing thrombolytic therapy. Our findings support the implementation of regional stroke care programs transporting patients directly to stroke centers to promote faster treatment and to achieve better outcomes. Copyright © 2015 Elsevier Ltd. All rights reserved.

Title: Key Factors Associated with Major Depression in a National Sample of Stroke Survivors.

Citation: Journal of stroke and cerebrovascular diseases : the official journal of National Stroke Association, May 2016, vol. 25, no. 5, p. 1090-1095, 1532-8511 (May 2016)
Author(s): Hirata, Sarah, Ovbiagele, Bruce, Markovic, Daniela, Towfighi, Amytis

Abstract: Depression, one of the most common complications encountered after stroke, is associated with poorer outcomes. The aim of this study was to determine the factors independently associated with and predictive of poststroke depression (PSD). We assessed the
prevalence of depression (Patient Health Questionnaire [PHQ-8] score >10) among a national sample of adults (≥20 years) with stroke who participated in the National Health and Nutrition Examination Surveys from 2005 to 2010. Logistic regression and random forest models were used to determine the factors associated with and predictive of PSD, after adjusting for sociodemographic and clinical factors. Of the 17,132 individuals surveyed, 546 stroke survivors were screened for depression, and 17% had depression, corresponding to 872,237 stroke survivors with depression in the United States. In the logistic regression model, after adjustment for sociodemographic variables, poverty (poverty index <200% versus ≥200%, odds ratio [OR] 2.61, 95% confidence interval [CI] 1.23-5.53) and 3 or more medical comorbidities (OR 1.59, 95% CI 1.01-2.49) were associated with higher odds of PSD; increasing age was associated with lower odds of PSD (per year OR .95, 95% CI .94-.97). In the random forest model, the 10 most important factors predictive of PSD were younger age, lower education level, higher body mass index, black race, poverty, smoking, female sex, single marital status, lack of cancer history, and previous myocardial infarction (specificity = 70%, sensitivity = 64%). Although numerous factors were predictive of developing PSD, younger age, poverty, and multiple comorbidities were strong and independent factors. More aggressive screening for depression in these individuals may be warranted. Copyright © 2016 National Stroke Association. Published by Elsevier Inc. All rights reserved.

Title: The association between rural residence and stroke care and outcomes.

Citation: Journal of the neurological sciences, Apr 2016, vol. 363, p. 16-20, 1878-5883 (April 15, 2016)

Author(s): Koifman, Julius, Hall, Ruth, Li, Shudong, Stamplecoski, Melissa, Fang, Jiming, Saltman, Alexandra P, Kapral, Moira K

Abstract: Little is known about stroke care and outcomes in those residing in rural compared to urban areas. We conducted a cohort study on a population-based sample of patients with stroke or transient ischemic attack seen at 153 acute care hospitals in the province of Ontario, Canada, between April 1, 2008 and March 31, 2011. Based on their primary residence, patients were categorized as residing in a rural (population<10,000), medium urban (population 10,000-99,999) or large urban (population≥100,000) area. In the study sample of 15,713, we compared processes of stroke care (use of thrombolysis, stroke unit care, investigations, consultations and treatments) and outcomes (30-day mortality, disability at discharge) in those from rural and urban areas, with multivariable models constructed to evaluate the association between rural residence and outcomes after adjustment for potential confounders. Patients from rural areas were less likely than those from urban areas to receive stroke unit care, brain imaging within 24h, carotid imaging, and consultations from neurologists, physiotherapists, occupational therapists and speech language pathologists, and were less likely to be transferred to inpatient rehabilitation facilities. Use of antithrombotic agents and lipid lowering therapy was similar in rural and urban residents, as was disability at discharge. There was a trend toward higher 30-day mortality in rural compared to urban residents (adjusted hazard ratio 1.14; 95% confidence interval 0.99-1.32). Rural residence is associated with lower use of key stroke care interventions after stroke. Future work should focus on developing interventions to address gaps in stroke care in rural areas. Copyright © 2016 Elsevier B.V. All rights reserved.

Title: Tachycardia burden in stroke unit is associated with functional outcome after ischemic stroke.

**Author(s):** Jeong, Han-Gil, Ko, Sang-Bae, Kim, Chi Kyung, Kim, Yerim, Jung, Seunguk, Kim, Tae Jung, Yoon, Byung-Woo

**Abstract:** Stroke unit care is associated with decrease in mortality and improvement in neurological outcome in patients with acute stroke. Heart rate is a commonly monitored variable in the stroke unit. However, little is known about tachycardia burden in the stroke unit and its association with outcome. To investigate the effects of tachycardia burden in the stroke unit on functional outcome in patients with acute ischemic stroke. We collected data from 246 patients with acute ischemic stroke admitted to our stroke unit between July 2013 and June 2014. Tachycardia burden was defined as duration of heart rate over 95 per minute divided by the total monitoring time, using the heart rate data sampled every 1 min. We divided the study population into quartiles of tachycardia burden and analyzed their association with poor three-month functional outcome (modified Rankin Scale score of ≥3). Among included patients (age, 67.4 ± 12.8; male, 53.7%), tachycardia burden was 0.7% (median, interquartile range [0.1-5.7%]). The patients with higher tachycardia burdens were older, more likely to have higher stroke severity, cardioembolic etiology, atrial fibrillation, fever, pneumonia, higher initial glucose level, and higher white blood cell count. As compared with the lowest quartile (<0.1%), the highest quartile of tachycardia burden (≥6.0%) was significantly associated with poor outcome (adjusted odds ratio, 5.10; 95% confidence interval, 1.38-18.90; p = 0.01) after adjustment for covariates. Patients with increased tachycardia burden during stroke unit stay have poor functional outcome. Countermeasures against worsening factors might be utilized for patients with increased tachycardia burden. © 2016 World Stroke Organization.

**Title:** An analysis of self-esteem in stroke survivors: the interaction between gender, income, and the presence of a spouse.

**Citation:** Journal of mental health (Abingdon, England), Apr 2016, vol. 25, no. 2, p. 159-164, 1360-0567 (April 2016)

**Author(s):** Park, Eun-Young, Kim, Jung-Hee

**Abstract:** Self-esteem is considered a significant factor affecting both the emotional and functional outcomes of stroke survivors; however, research on self-esteem in this group is limited. The aim of this study was to evaluate the gender-specific effects of income status and the presence of a spouse on the self-esteem of stroke survivors using data from a population-based study in Korea. The Korea Welfare Panel Study was used to investigate the gender-specific effects of income and the presence of a spouse on the self-esteem of stroke survivors. Self-esteem was measured using the Rosenberg Self-Esteem Scale. Males in the general income category had higher self-esteem than males in the low-income category. However, no differences were found in the self-esteem of females by income category. The self-esteem of females without a spouse or partner was lower than the males without a spouse. Self-management interventions to enhance self-esteem should focus on gender to facilitate patients’ adjustment and rehabilitation after a stroke.

**Sources Used:**
The following databases are used in the creation of this bulletin: Amed, Cinahl & Medline.

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