

Package and task-oriented training components of Constraint-Induced Movement therapy developed by the laboratory of E. Taub and G. Uswatte.

Participants and Methods: Participants were \geq 3 months after recovery from acute COVID symptoms and had substantial brain fog and impairment in IADL. Participants were randomized to CICT immediately or after a 3-month delay. CICT involved 36 hours of outpatient therapy distributed over 4-6 weeks. Sessions had three components: (a) videogame-like training designed to improve how quickly participants process sensory input (SOPT), (b) training on IADLs following shaping principles, and (c) a set of behavioral techniques designed to transfer gains from the treatment setting to daily life, i.e., the Transfer Package. The Transfer Package included (a) negotiating a behavioral contract with participants and one or more family members about the responsibilities of the participants, family members, and treatment team; (b) assigning homework during and after the treatment period; (c) monitoring participants' out-of-session behavior; (d) supporting problem-solving by participants and family members about barriers to performance of IADL; and (e) making follow-up phone calls. IADL performance, brain fog severity, and cognitive impairment were assessed using validated, trans-diagnostic measures before and after treatment and three months afterwards in the immediate-CICT group and on parallel occasions in the delayed-CICT group (aka wait-list controls).

Results: To date, five were enrolled in the immediate-CICT group; four were enrolled in the wait-list group. All had mild cognitive impairment, except for one with moderate impairment in the immediate-CICT group. Immediate-CICT participants, on average, had large reductions in brain fog severity on the Mental Clutter Scale (MCS, range = 0 to 10 points, mean change = -3.7, SD = 2.0); wait-list participants had small increases (mean change = 1.0, SD = 1.4). Notably, all five in the immediate-CICT group had clinically meaningful improvements (i.e., changes \geq 2 points) in performance of IADL outside the treatment setting as measured by the Canadian Occupational Performance Measure (COPM) Performance scale; only one did in the wait-list group. The advantage for the immediate-CICT group was very large on both the MCS and COPM (d 's = 1.7, p 's < .05). In follow-up,

immediate-CICT group gains were retained or built-upon.

Conclusions: These preliminary findings warrant confirmation by a large-scale randomized controlled trial. To date, CICT shows high promise as an efficacious therapy for brain fog due to PASC. CICT participants had large, meaningful improvements in IADL performance outside the treatment setting, in addition to large reductions in brain fog severity.

Categories: Cognitive Intervention/Rehabilitation

Keyword 1: cognitive rehabilitation

Keyword 2: information processing speed

Keyword 3: activities of daily living

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Paper Session 12: Assessment related topics

1:45 - 3:15pm

Friday, 3rd February, 2023

Town & Country Ballroom D

Moderated by: Dalin Pulsipher

1 Race, Ethnicity, Education, Sex and Gender Effects on Neuropsychological Test Scores: Limitations of Current Evidence and Impact on Clinical Trials and Clinical Practice

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Objective: Interpretation of neuropsychological (NP) tests depends on the quality of the normative standards available for the tests. Conorming across tests is necessary when interpreting differences between scores on different tests. The relevance of specific norms for an individual examinee further depends on multiple design features of the standardization studies, including: when the studies were conducted, sampling strategy,

inclusion/exclusion criteria, age, sex/gender, education, race and ethnicity, socioeconomic status, and region. This paper examines the standardization studies of the most widely used NP tests, identifies their strengths and weaknesses, and makes recommendations for interpretive caveats based on these analyses.

Participants and Methods: We reviewed the standardization strategies and coded information about the sampling frames, inclusion/exclusion criteria, stratification methods, demographic characteristics, and sample sizes overall and within each stratum where relevant. These methods were applied to the WAIS-IV, WMS-IV, CVLT3, D-KEFS, Pearson Advanced Clinical Solutions (ACS), Rey Complex Figure Test, WCST, Symbol Digit Modalities Test, RBANS, BVM-T-R, HVL-T, Halstead-Reitan (“Heaton et al”) Norms for Boston Naming, Finger Tapping, Grooved Pegboard), MOANS, and MOAANS (Boston Naming, Trail Making Test, Judgement of Line Orientation). We calculated multiple indexes for each test, including standard errors and confidence intervals for scaled scores.

Results: Most tests used age only as a stratification factor, providing “age corrected” scores for selected age bands. The sample sizes for the age strata range from 1 to ~200 but were usually less than 100 participants/stratum. Sex differences were rarely reported and some studies had markedly uneven distributions of sex. Education was not used as a stratification factor in any study, and few norms attempted corrections for education. The possible interactions of age and education on test scores are seldom reported and cell sizes for combinations of age and education may be too small to enable robust estimates of scores, especially at lower levels of education and older ages. The possible impact of race and ethnicity are rarely interrogated except in ACS, Heaton and MOAANS norms, which all focus on “African American” participants. Discrepancies in scores across ACS, Heaton and MOAANS suggest marked sampling differences.

Conclusions: Existing norms have major limitations which may impact the clinical assessment of individuals and result in inappropriate treatment recommendations as well as lead to inappropriate classification in clinical trials, which may include score “cutoffs” based on widely used normative standards. Most norms use only age as a stratification factor, despite robust impacts of education on scores. Race and ethnicity are poorly represented, fail to reflect current demographic

characteristics of the United States, and existing norms present major conflicts for African American groups, with the same raw scores differing by a full standard deviation depending only on the source of normative data. Sex differences are examined infrequently and it remains unclear to what extent sex or gender differences may affect some scores. There is an urgent need for new, preferably “dynamic” normative standards, that include sampling by socially and demographically meaningful metrics, to provide greater precision in assessment of neuropsychological scores and score discrepancies, and for evaluating the inclusion/exclusion criteria, and criteria for efficacy in clinical trials that use neurocognitive endpoints.

Categories:

Assessment/Psychometrics/Methods (Adult)

Keyword 1: normative data

Keyword 2: test reliability

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2 Clinical Validity and Cut-Off Scores of a Brief Neuropsychological Battery for a Large Rural Population in Community Setting

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