

and/or technology issues. Most participants (75%) using the App were mostly or very satisfied, about 87% would be likely or very likely to seek similar programs in the future, and 93% found the App mostly or very understandable. Groups did not significantly differ on clinical outcomes, although the study was not powered for an efficacy analysis. Within groups analysis revealed significant increases in depressive symptoms at post-treatment for caregivers in both groups.

Conclusions: This study demonstrated initial feasibility of the CARE-Well App for dementia caregivers. App use was lower than expected, however, high satisfaction, ease of use, and willingness to use similar programs in the future were endorsed. Some caregivers did not complete the intervention due to caregiving responsibilities, general disinterest, and/or technology issues. Although the study was not designed to assess clinical outcomes, we found that both groups reported higher depressive symptoms at post-treatment. This finding was unexpected and might reflect pandemic-related stress, which has been shown to particularly impact dementia caregivers. Future studies should address the efficacy of multicomponent mHealth interventions for dementia caregivers and the effects of increased dose on clinical outcomes. mHealth interventions should be refined to cater to varying levels of technology literacy among caregivers, and further research should aim to better integrate interventions into caregivers' routines to enhance treatment engagement.

Categories: Teleneuropsychology/ Technology

Keyword 1: caregiver burden

Keyword 2: dementia - Alzheimer's disease

Keyword 3: technology

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97 Evaluation of Video and Telephone-Based Administration of the Uniform Data Set Version 3 (UDS v3.0) Teleneuropsychological Measures

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Objective: Telecommunication-assisted neuropsychological assessment (teleNP) has become more widespread, particularly in response to the COVID-19 pandemic. However, comparatively few studies have evaluated in-home teleNP testing and none, to our knowledge, have evaluated the National Alzheimer's Coordinating Center's (NACC) Uniform Data Set version 3 tele-adapted test battery (UDS v3.0 t-cog). The current study compares in-home teleNP administration of the UDS v3.0, acquired while in-person activities were suspended due to COVID-19, with a prior in-person UDS v3.0 evaluation.

Participants and Methods: 210 participants from the Michigan Alzheimer's Disease Research Center's longitudinal study of memory and aging completed both an in-person UDS v3.0 and a subsequent teleNP UDS v3.0 evaluation. The teleNP UDS v3.0 was administered either via video conference (n = 131), telephone (n = 75), or hybrid format (n = 4) with approximately 16 months between evaluations (mean = 484.7 days; SD = 122.4 days; range = 320-986 days). The following clinical phenotypes were represented at the initial assessment period (i.e., the most recent in-person UDS v3.0 evaluation prior to the teleNP UDS v3.0): cognitively healthy (n = 138), mild cognitive impairment (MCI; n = 60), dementia (n = 11), and impaired not MCI (n = 1). Tests included both the in-person and teleNP UDS v3.0 measures, as well as the Hopkins Verbal Learning Test-Revised (HVLT-R) and Letter "C" Fluency.

Results: We calculated intraclass correlation coefficients (ICC) with raw scores from each time point for the entire sample. Sub-analyses were conducted for each phenotype among participants with an unchanged consensus research diagnosis: cognitively healthy (n = 122), MCI (n = 47), or cognitively impaired (i.e., MCI, dementia, and impaired not MCI) (n = 66). Test-retest reliability across modalities and clinical phenotypes was, in general, moderate. The poorest agreement was associated with the Trail Making Test (TMT) – A (ICC = 0.00; r = 0.027), TMT - B (ICC = 0.26; r = 0.44), and Number Span Backward (ICC = 0.49). The HVLT-R demonstrated moderate reliability overall (ICC = 0.51-0.68) but had notably weak reliability for cognitively healthy participants (ICC

= 0.12-0.36). The most favorable reliability was observed in Craft Story 21 Recall – Delayed (ICC = 0.77), Letter Fluency (C, F, and L) (ICC = 0.74), Multilingual Naming Test (MINT) (ICC = 0.75), and Benson Complex Figure – Delayed (ICC = 0.79).

Conclusions: Even after accounting for the inherent limitations of this study (e.g., significant lapse of time between testing intervals), our findings suggest that the UDS v3.0 teleNP battery shows only modest relationships with its in-person counterpart. Particular caution should be used when interpreting measures showing questionable reliability, though we encourage further investigation of remote vs. in-person testing under more controlled conditions.

Categories: Teleneuropsychology/ Technology

Keyword 1: teleneuropsychology

Keyword 2: mild cognitive impairment

Keyword 3: dementia - Alzheimer's disease

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98 On Combining In-Person and Remote National Alzheimer's Coordinating Center (NACC) Uniform Data Set (UDS) data

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Objective: Although remote neuropsychological assessments have become increasingly common, current research on the reliability and validity of scores obtained from remote at-home assessments are sparse. No studies have examined remote at-home administration of the National Alzheimer's Coordinating Center (NACC) Uniform Data Set (UDS) even though this battery is being used to track over 45,000 participants over time. This study aimed to determine whether remote UDS scores can be combined with in-person data by assessing whether rates of score changes over time (i.e., reliability) differed by modality and whether remote and in-person scores converge (i.e., validity).

Participants and Methods: Data for UDS visits conducted from 09/2005 to 12/2021 from 43

Alzheimer's Disease Research Centers were examined. We identified 311 participants (254 cognitively unimpaired, 7 impaired – not mild cognitive impairment, 25 mild cognitive impairment, 25 dementia) who completed 2 remote UDS visits 0.868 years apart (SD = 0.200 years). First, initial remote scores were correlated with most recent in-person scores. Second, we examined whether rates of change differed between remote and in-person assessments. Repeated-measure one-way ANOVA were used to compare rates calculated from the same individual from remote versus in-person assessments. We additionally identified a demographically- and visit-number-matched group of 311 participants with in-person UDS visits given that all remote visits occurred after in-person visits; one-way ANOVAs were used to compare remote rates to rates from in-person assessments from the matched in-person group. Finally, accuracy of remote scores were assessed by quantifying the difference between the actual remote scores and predicted scores based on repeated in-person assessments. These residual values were then divided by the maximum score to form error rates.

Results: Remote UDS score on MoCA-blind, Craft story immediate and delayed recall, digits forward, digits backward, phonemic fluency (F, L, F + L), and semantic fluency (animals, vegetables, animals + vegetables) were all highly correlated (all p s < 0.001) with scores obtained from preceding in-person assessments. At the group level, within-subject comparisons between remote and in-person rates of change were not significantly different for 7/11 tests; between-subject comparisons were not significantly different for 10/11 tests. Vegetable fluency had slightly reduced rates of change with remote assessment compared to in-person assessments. Critically, remote scores were consistent with predicted scores based on the trajectory of each subject's in-person assessments with group mean error rates ranging from 0.7% (Craft Delayed Recall) to 3.9% (Phonemic fluency – F).

Conclusions: Our results demonstrate adequate reliability and convergent validity for remotely administered verbally based tests from the NACC UDS battery. Importantly, our findings provide some support for combining remote and in-person scores for studies that transitioned to remote testing due to COVID-19. However, future research is needed for tests with visual stimuli that assess visual memory, visuospatial function, and aspects of executive function.