

Developing a telehealth-based assessment battery for older Australians

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Biographical statements

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Declarations

Statement of Originality

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library**, being made available for loan and photocopying subject to the conditions of the Copyright Act 1968.

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Acknowledgement of Collaboration

I hereby certify that the work embodied in this thesis has been done in collaboration with other researchers. I have included as part of this thesis a statement clearly outlining the extent of collaboration, with whom and under what auspices.

I contributed to the development of the research question, the database search, the statistical analysis, the interpretation of results and writing of the manuscript. Dr Michelle Kelly contributed to the development of the research question, the formulation of the methodology and selection of assessment measures, participant recruitment, the interpretation of results, and editing of the manuscript. Dr Kylie Wales contributed to the selection of assessment measures and provided training in administration.

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Date

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Abstract

Telehealth technologies can provide important healthcare services for people in rural and remote areas. In older adults, cognition, social cognition, mood, and functional independence are key predictors of dementia, however few assessment tools are validated for telehealth administration. This study examined the agreement between face-to-face and telehealth administration of five assessments: ACE-III, BASS, HADS, MBI, and ALSAR-R2. Thirty-nine healthy participants (18 male) over 50 years of age ($M = 71.9$, $SD = 11.7$) were randomized to face-to-face-first or telehealth-first test format, followed by the alternate format within five weeks. Eligible participants completed all assessment items, and telehealth was well tolerated. High mean intra-class correlations ($ICC = .913$ to $ICC = .995$) were found for each assessment across formats. Overall, this research provides preliminary evidence for the feasibility and reliability of conducting these assessments via telehealth. Further research should explore telehealth-based assessment with people diagnosed with mild cognitive impairment and dementia.

Key words: Telehealth, Dementia, Assessment, Mild Cognitive Impairment, social cognition, social neuroscience, cognitive assessment, ADL

Developing a telehealth-based assessment battery for older Australians

Age related cognitive decline can begin to effect individuals from as early as 50 years of age, if not earlier (Salthouse, 2009). Mild cognitive impairment, a condition typified by reduced cognitive abilities greater than expected for age and is a primary indicator of a person's risk for later dementia, occurs in up to twenty percent of people over the age of 65 (Australian Institute of Health and Welfare, 2009). Detecting the early indicators and risk factors for dementia is crucial in slowing the onset of symptoms (Livingston et al., 2017), however without suitable assessment and informed clinical management, people with mild cognitive impairment face a higher burden of disease, including greater levels of disability (Artero, Touchon, & Ritchie, 2001), higher carer burden (Garand, Dew, Eazor, Dekosky, Reynolds, 2005), and reduced quality of life (Teng, Tassniyom & Lu, 2012). This issue is of particular concern to rural and remote communities, where the proportion of older people is expected to increase relative to non-rural areas (Judd & Humphries, 2001). Given Australia's broad geographical spread and population concentration in urban areas, rural and remote areas have limited access to routine and specialist health services (AIHW, 2009). This limits the capacity for assessment and early intervention for key health areas (Harrell, Wilkins, Connor & Chodosh, 2014). Non-traditional assessment methods, such as telehealth, provide an opportunity to increase assessment rates in rural and remote areas, however, many of the standardised tools used for face-to-face assessment have not yet been validated for this format of administration.

The Tyranny of Distance

High rates of age-related cognitive decline and mild cognitive impairment are expected to disproportionally impact rural and remote communities in comparison to other areas (Harrell, Wilkins, Connor & Chodosh, 2014). This is in part due to a tendency for

younger Australians to migrate away from rural areas (Bureau of Rural Sciences, 1999; Judd & Humphreys, 2001) as they seek higher education and professional careers, often resulting in older adults making up a greater proportion of the regional population (Harrel et al., 2014). Some estimates indicate approximately 36% of all older Australians reside in rural and regional locations (Davis & Bartlett, 2008) with the average age predicted to continue to rise. Despite this disproportionately higher impact, there is a shortfall in appropriate services for early detection and assessment of dementia in these areas (Morgan, Innes, & Kosteniuk, 2011).

Primary care physicians often require specialized services to assist with assessment and diagnosis of age-related issues (Brodaty, Low, Gibson & Burns, 2006), though unfortunately, fewer of these specialist services exist in rural and remote areas, a challenge often referred to as the ‘tyranny of distance’. Access to services in urban areas requires lengthy and expensive travel, and the inability to access services flexibly resulting in significant inequality in healthcare outcomes (Armfield, Edirippulige, Bradford, & Smith, 2014). This can result in a higher burden of disease over a lifetime and is particularly challenging for older adults who may have a greater preponderance of health needs requiring specialist care (Judd & Humphreys, 2001; AIHW, 2014).

Telehealth

Telehealth, the provision of healthcare over telecommunications services, is a growing area of clinical and research activity (Armfield et al., 2014). Common methods of telehealth include real-time interviews, remote physiological monitoring, and store-and-forward systems for later expert analysis (DelliFraine & Dansky, 2008). The capacity for telehealth to overcome the tyranny of distance has led to a significant increase in the availability of health services to people in rural areas (Ciemens, Holloway, Jay Coon,

McClosky-Armstrong, & Min, 2009). Successful telehealth implementation needs to consider the availability of technology (Jang-Jaccard, Nepal, Alem & Li, 2014; Moffatt & Eley, 2011), individual computer literacy levels (Greenhalgh et al., 2013) and user acceptance (Elhai, Sweet, Guidotti-Breting, & Kaloupek, 2012), all of which can impact on the validity and reliability of assessments if not appropriately addressed. Additionally, factors such as acceptability have been noted to diminish as a function of age, with higher uncertainty about the benefits of telehealth, and greater levels of concern about the loss of human contact and confidentiality (Loh, Flicker, Horner, 2009). Interestingly, while age and other characteristics can influence participant attitudes towards telehealth, the impact of these attitudes has been found not to adversely influence assessment outcomes (Greenwald, Stern, Clark, & Sharma, 2018). Nevertheless, more recent video-conferencing technologies are making telehealth more accessible, approachable, and clinically viable (Banbury et al., 2014). However, translating assessments to telehealth can be challenging.

When adapted for use via telehealth, the psychometric properties of assessment tools are vulnerable to change (Luxton, Pruitt & Osenbach, 2014). Testing conditions easily controlled in a face-to-face session are harder to regulate for telehealth-based testing (Barak, Buchanan, Kraus, Zack & Striker, 2004), such as participants covertly writing memory items (Buchanan, Johnson & Goldberg, 2005). Changes made to tools to make them suitable for telehealth can also introduce variance and undermine the targeted nature of a test item, such as participants being asked to verbally read their answer to a written language task (Luxton et al., 2014). Typically, research into such adaptations has utilized small sample sizes to demonstrate feasibility of telehealth, while overlooking the significant changes occurring to the original test materials (e.g., Cullum, Weiner, Gehrmann & Hynan, 2006). Given the scope of changes and challenges introduced by the telehealth format, structured assessments require

in-depth testing and analysis to provide evidence for their reliability. These steps have not yet been taken for tools commonly used in the assessment of older adults.

An Assessment Battery for Older Adults

Robust assessment of key health indicators can be a major factor in improving the cost of healthcare systems and the individual cost in terms of quality of life and burden of disease (Armstrong et al., 2007). While assessments of older adults with MCI typically focus on general cognitive function and physiological factors such as pain (Cosentino et al., 2014), other important areas include social functioning, mood, and functional independence. Cognitive decline, functional impairment, and reduced social connectedness are risk factors for the development and progression of age-related changes including mild cognitive impairment (Livingston et al., 2017), and have been identified as predictors of later dementia (Kuiper et al., 2015; Tabert et al., 2002; Visser et al., 1999).

General Cognition

Mild cognitive impairment has been identified as a primary risk factor for later development of dementia (Livingston et al., 2017). Overall, the risk of progression from mild cognitive impairment to dementia is greater when impairments extend to areas such as language and attention (Mathews et al., 2008). Subsequently, assessments exploring a range of cognitive domains are a priority for use with older adults. While some assessments of cognition have been adapted for telehealth, including the Mini Mental State Examination (Ciemins et al., 2009), these are generally shorter tools, or abbreviated adaptations of more comprehensive screening tools, such as the mini-MOCA (Bitar & Ward, 2016).

Social Cognition

Social cognition, the neurological processes used in perceiving, understanding, and responding to social information, is a core component of human interaction and an important

aspect of assessment when working with older adults with mild cognitive impairment (Dunbar, 1998). Disruption to social cognition can potentially result in functional impairment, poorer treatment outcomes, and overall lower quality of life (Grossman, Na, Varnum, Kitayama, & Nisbett, 2013). Understanding social cognition can help to differentiate individual presentations of dementia (McDonald, 2012), as changes in social functioning are some of the first changes of fronto-temporal dementia yet appear in later stages for other dementia types (Cosentino et al., 2014; Matthews et al., 2013). There are relatively few assessments of social cognition (Bora, Walterfang & Velakoulis, 2015), many of which are not suitable for older adults due to long administration times. Further, it appears that none of these tools have been validated for use via telehealth.

Anxiety and Depression

Anxiety and depression are significant issues in older populations and can lead to consequences (Fiske, Wetherell, & Gatz, 2009) including an increased risk of suicide (De Leo, Draper, Snowden, Kolves, 2012) and chronic health issues such as an increased risk of dementia (Diniz, Butters, Albert, Dew & Reynolds, 2013). Additionally, symptoms of mood disorders such as cognitive changes, somatic symptoms, irritability and insomnia are often falsely attributed to aging (Fiske et al., 2009). This can impact on the early detection and assessment for both mood disorders and dementia. As a result, assessments of mood are an important aspect of assessment for older people in their own right. Measures of mood have been adapted for remote administration, particularly over the phone, however comparatively few have focused on older people (Choi, Hegal, Marti, Marinucci & Sirriani, et al., 2014).

Activities of daily living

Assessments of activities of daily living (ADLs), and instrumental ADLs (IADLs) are key tools used with older adults to explore functionality and independence, particularly

for those with mild cognitive impairment (Inouye et al., 1998). Cognitive function can have a significant impact on independence and functionality, with greater levels of impairment being associated with greater cognitive impairment (WHO, 2016). Tabert et al. (2002) identified that the extent and trajectory of any functional deficits in patients with mild cognitive impairments was a significant predictor of a future diagnosis of Alzheimer's type dementia, particularly in cases where there was a lack of awareness of the nature and extent of the functional deficits. The early detection of functional impairments is therefore crucial in determining appropriate strategies and supports.

The evidence for the efficacy of occupational measures delivered via telehealth is still developing (Cason, 2014). Many occupational therapy assessments, including for ADLS, require detailed observation which does not readily translate to telehealth (Hoffman & Cantoni, 2008). Gokalp & Clarke (2013) reviewed the research on the measurement of ADLs via telehealth and concluded that most studies focus on the feasibility of telehealth, rather than more rigorous psychometrics, and acceptability or potential benefits to the individual. Further research into standardized occupational therapy assessments is required to improve clinical utility and diagnostic accuracy.

Current study

Given the paucity of past research examining the administration of screening tools for the remote assessment of older adults, the current study focused on four key domains. These included cognition, social cognition, mood, and I/ADLs as a measure of functioning. Tools were selected based on sensitivity to clinical outcomes, appropriateness for the target population, as well as accessibility and ease of use, particularly when adapted for use via telehealth. A sample of healthy older adults was used to explore baseline indicators for feasibility, acceptability and reliability while avoiding the added complexity of cognitive

issues that would be found in a clinical sample. This study focused on people over 50 years of age, as although most definitions of “older persons” are restricted to those over 65 years of age, age-related cognitive decline can be present from much earlier, including to a clinical degree that may be indicative of mild cognitive impairment or early dementia (Salthouse, 2009). By exploring the feasibility, acceptability, and reliability of assessment tools in these domains when used via telehealth, this study aims to provide preliminary evidence for the suitability of the selected tools for use via telehealth, and contribute to the growing body of evidence supporting the use of telehealth for older Australians.

Feasibility and acceptability are important factors to explore when developing new versions of tools, such as for use via telehealth (Luxton et al., 2014). In this study, feasibility was assessed as the functional ability of participants to complete an assessment tool, despite any adaptations made to delivery, completion and evaluation of the tool for use via telehealth, and any technical issues that may have arisen. Therefore, the first aim was to demonstrate the feasibility of the assessments via telehealth by exploring any differences in the completion rate of each assessment item across both conditions. It was hypothesized that remotely assessed healthy older adults would be able to complete the same number of items on each of the assessment tools as they could during face-to-face assessment.

Comparatively, the acceptability of each tool via telehealth focuses on the impact of participant attitudes towards the assessment process, particularly the use of telehealth. The second aim was to explore participant attitudes as a measure of the acceptability of conducting these assessments via telehealth. It was hypothesized that there would be a high rate of acceptability of telehealth.

While feasibility explores if telehealth can be used for these assessments, and acceptability explores if telehealth would be used, reliability is an important aspect that

determines whether telehealth should be used for these assessments. The third aim of this study was to explore the agreement between test scores for assessments delivered face-to-face versus via telehealth as a measure of reliability. It was hypothesized that there would be strong agreement between total scores for each assessment across assessment formats, and that the use of telehealth for these assessments was therefore valid.

A number of secondary analyses were also conducted. Descriptive statistics about the participant sample were explored, along with the relationship between participant demographic variables and assessment scores. The relationship between each assessment tool, and between each tool and independent variables was also explored within each format, and it was hypothesized that these relationships would be maintained between formats.

Method

Participants

Participants were recruited through the Hunter Medical Research Institute (HMRI) volunteer registry (N = 22), a local Aged Care Facility (N = 14), and word of mouth (N = 6). Participants were eligible to participate if they were over the age of 50 years, had basic English language skills, were medically fit to complete the study and had no prior diagnosis of dementia or history of serious neurological condition. Participants were excluded if their score on the Addenbrooke's Cognitive Examination, Third Edition (Hsieh et al., 2013), a screening tool of cognitive performance was 82/100 or below, indicating possible cognitive impairment. Other exclusion criteria included significant mood disorder or psychosis, any history of serious neurological conditions or major psychiatric conditions.

Measures

Clinical Interview. A brief clinical interview was conducted to explore relevant medical and social history including years of education, highest qualification level,

occupation, age at retirement, substance and tobacco use, medical and mental health history, falls and frequency of visits to their general practitioner. Family history of dementia, and any previous psychological testing were also determined. The clinical interview and other measures are included in Appendix A.

The Addenbrooke's Cognitive Examination-III. The ACE-III (Hsieh et al., 2013) is a brief assessment of cognition (15-20 minutes) that is commonly used to screen for dementia (Hodges & Larner, 2017). The ACE-III screens for difficulties in areas of attention, memory, language, fluency, and visuospatial tasks, and provides a total performance score out of 100, with two recommended cut-off scores providing different levels of sensitivity and specificity. In comparison to other cognitive screening tools such as the Montreal Cognitive Assessment (MoCA; Nasreddine, 2005) and the Modified Mini Mental Status Examination (3MS; Teng & Chui, 1987), the ACE-III is considered more comprehensive and assesses a wide range of cognitive domains and is capable of providing a differential diagnosis to inform further testing (Bentvelzen, Aerts, Seeher, Wesson & Brodaty, 2017). It is sensitive to different types of dementia and symptom severity (Hsieh et al., 2013) and has been shown to have excellent inter-rater reliability ($ICC \geq .90$), test-retest reliability ($ICC \geq .90$) and clinical utility at the recommended cut-off scores of 88 (sensitivity = 1.0; specificity = 0.96) and 82 (sensitivity = 0.93; specificity = 1.0) (Bentvelzen et al., 2017). The ACE-III has three psychometrically identical versions suitable for use with Australian participants (Hsieh et al., 2013). Participants completed Version A during their initial assessment session, and Version B during their second assessment session. Participants completed a modified electronic version of the ACE-III for the telehealth testing format, and the traditional pen and paper version was used for the face-to-face format. Modifications for telehealth included test items being displayed on screen, participants holding written and visuospatial tasks to the camera. Additionally, participants used the online survey software Qualtrics for some language tasks

where participants would normally be asked to point to an image meeting a specific criterion (Luxton et al., 2014), as answering verbally using Skype may alter the specific cognitive skills involved in the task.

The Brief Assessment of Social Skills. The BASS (Kelly & McDonald, under review) is a tool currently being developed for use with clinical populations to assess social cognition. Kelly & McDonald (under review) found that the BASS was sensitive to differences in social cognition between people with dementia and healthy older adults. Other tools assessing social cognition such as The Awareness of Social Inference Test, Revised (TASIT-R; McDonald, 2012) and the Geneva Social Cognition Scale (Martory et al., 2015) typically have extensive administration times that may not be suitable for older adults with mild cognitive impairment or dementia, and may not assess the full range of domains associated with social cognition. Comparatively, the BASS can be administered in 30 minutes and is suitable for use with older people with or without age mild cognitive impairment or dementia (Kelly & McDonald, under review). Additionally, the BASS assesses the six separate domains involved in social cognitive processes by Adolphs (2001; 2003): emotion perception, social reasoning, empathy, facial identification, social disinhibition, and facial memory using visual stimuli. Each domain has an individual score that can be interpreted quantitatively and contributes to an overall score out of 275. The BASS has adequate test-retest reliability ($r = .64$, $p < .001$) and construct validity ($r = .42$ to $r = .54$), and an established normative sample (Kelly, Bell-Weinberg & McDonald, in prep). The BASS has previously been used in a pen and paper format, however has also been adapted for electronic administration in both testing formats, where stimulus material was displayed on a screen (Kelly, Bell-Weinberg & McDonald, in prep).

The Hospital Anxiety and Depression Scale. The HADS (Zigmond & Snaith, 1983) is a brief assessment of mood and can identify clinically significant anxiety and depression in

older adults. The HADS consists of 14 questions, seven for each subscale, where participants identify the statement of severity most relevant to them over the past week. Scores on the HADS can fall into three ranges: normal, borderline abnormal, and abnormal. The HADS is suitable for use for all ages and has good validity and strong reliability for both the depression ($\alpha = .76$) and anxiety ($\alpha = .80$) subscales (Mykletun, Stordal & Dahl, 2001). While the psychometrics of the HADS are generally similar to other self-rating scales of mood, the absence of somatic indicators of depression on the HADS compared to tools such as the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock & Erbaugh, 1961) makes the HADS score for depression less susceptible to interference from symptoms of physical illness (Hermann, 1997). Furthermore, in comparison to the BDI and Beck Anxiety Inventory (BAI; Beck, Epstein, Brown & Steer, 1988) which can each be administered in five-to-ten minutes, the HADS can measure symptoms of both anxiety and depression concurrently within a two-to-five minute administration time. Participants completed a modified electronic version of the HADS for the telehealth testing format where test items were displayed on a screen and participants verbally identified their response, and the traditional pen and paper version for the face-to-face format.

The Modified Barthel Index. The MBI (Shah, Vanclay & Cooper, 1989) is a brief assessment of activities of daily living (ADLs). The assessment consists of 11 domains of functioning that are discussed with the respondent, and the clinician rates the level of functioning on the provided scale, which is then used to calculate an overall level of dependence. The MBI is scored out of 100, where higher scores indicate a higher level of independence. The MBI is suitable for use with all presentations of dementia (Bentvelzen, et al., 2017) and is a significant predictor of change in functionality, future admissions and services required. As a screening tool, the MBI requires less training to administer than more clinically focused assessments of ADLs such as the Functional Independence Measure (FIM;

Keith, Granger, Hamilton & Sherwin, 1987) while still maintaining good clinical utility and excellent psychometrics. The MBI has been shown to have excellent inter-rater reliability ($ICC > .90$) and test-retest reliability ($ICC > .70$). The MBI was administered verbally for both testing formats, in line with standard administration procedure.

The Assessment of Living Skills and Resources-Revised, 2nd Edition. The ALSAR-R2 (Clemson, Bundy, Unsworth & Singh, 2009) is a brief, clinician rated assessment of an individual's level of skills and resources in accomplishing a range of instrumental activities of daily living (IADLs). In comparison to other tools, the ALSAR-R2 assesses task accomplishment and the adequacy of external supports, rather than potential capability, and focuses on older adults living in the community by exploring a broader range of functional areas than other common screening tools, including household maintenance and leisure activities (Clemson et al., 2009). Additionally, more extensive tools assessing IADLs such as the Assessment of Motor and Process Skills (AMPS; Fisher, 1993) often require a high degree of training to measure task performance and are less commonly used, particularly for early screening. The assessment consists of 11 domains such as using the telephone, participating in leisure activities, and completing household tasks. The ALSAR-R2 is typically delivered in the form of a clinical interview with questions to guide the discussion and evaluate participant responses. From this information, a four-point rating scale of task accomplishment is developed, where higher scores indicate greater task difficulty, reduced access to resources, or both. The ALSAR-R2 has been validated for use with older adults with mild cognitive impairment (Clemson, Bundy, Unsworth & Singh, 2009). It is a reliable measure of task accomplishment ($\alpha = .90$), rather than potential capabilities, and is sensitive to change over time. The ALSAR-R2 was administered verbally for both assessment formats in line with standard administration procedure.

Telehealth acceptability questionnaire. This brief, 10-item questionnaire on the acceptability of assessment via telehealth was adapted from similar studies examining participant attitudes to telehealth (Grubaugh, Cain, Elhai, Patrick, & Frueh, 2008). It included questions about technical and connection issues, the quality of audio and video and their confidence with telehealth technology and ability to express themselves effectively using a 10-point Likert scale (1 = strongly disagree and 10 = strongly agree). Participant responses were collected using online survey software Qualtrics following completion of the telehealth assessment format. Participants were also able to comment on the experience of using telehealth.

Procedure

Following consent participants were randomly allocated to either the telehealth-first assessment format or the face-to-face-first format. Participants were assessed by a Clinical Psychology student researcher trained in the use of the selected tools and clinical interviews. Participants were reassessed in the alternate format following a three- to five-week interval to limit the impact of possible cognitive changes over time (Falletti, Maruff, Collie & Darby, 2006). The order of test administration was kept the same across assessment sessions. Participants were offered breaks during testing, and assessment sessions occurred at the same time of day to control for effects of fatigue. Each testing session was approximately 90 minutes in duration.

Face-to-face testing was conducted at participant's homes ($n = 3$), a local aged care facility ($n = 12$), or at the University of Newcastle Psychology Clinic ($n = 27$). Telehealth testing was conducted remotely using Skype, with both the researcher and participant in quiet locations free from distraction. Participants without personal access to Skype attended the University of Newcastle Psychology Clinic to complete this component, seated in a different

room to the researcher. In cases where cognitive impairment or adverse mental health were identified during screening, this was shared with the participant and consent was gained to provide a referral to their GP for further assessment. This study was approved by the Hunter New England Human Research committee (HNEHREC – 14/05/21/4.02) and the University of Newcastle Human Research Committee (HREC – H-2015-0255) (see Appendix B).

Design and Analysis

A within-subjects design was utilised. Independent variables were assessment format (face-to-face or telehealth), mood at time of testing, and demographic factors including participant age, education hearing and vision impairments, family history of dementia, and personal history of mental health issues. The dependent variables are test scores on each of the assessments; the BASS, ACE-III, HADS, MBI, and ALSAR-R2. Mood as measured by the HADS was included as both an independent variable for other measures including the ACE-III, BASS, MBI and ALSAR-R2 and as dependent variable to be explored in relation to demographic factors.

Feasibility was determined by the number of assessment items able to be completed over telehealth compared to face-to-face, in addition to the frequency and impact of any technical issues. Acceptability was explored using means, standard deviations, and ranges of responses on the acceptability questionnaire. Pearson's correlation was used to explore the relationship between independent variables and acceptability. Reliability was explored by examining the agreement between assessment modalities for each assessment tool using intra-class correlations (ICC; Bartko, 1966). ICC estimates and 95% confidence intervals were calculated based on a mean-rating, consistency agreement, 2-way random effects model (Koo & Li, 2016). Intra-class correlations of approximately 0.80 or higher between scores for each assessment indicated good agreement between formats for each tool (Prestia et al.,

2006), with higher correlations representing greater agreement (Hwang et al., 2017; Kobak, 2004) and an overall greater measure of reliability.

Several secondary analyses were completed. Descriptive statistics were examined for all dependent variables. Pearson's correlations were used to examine the relationships between each of the four main assessment tools, and between each assessment tool and independent variables. Fisher z transformations were used to examine differences between these correlations (Fisher, 1915; 1921) to determine if any key relationships between tools and explanatory variables were altered when the format was telehealth. To explore practice effects, a one-way repeated measures ANOVA was used to examine whether the order of assessment format predicted performance.

Results

Participants

Forty-two participants (19 males and 23 females) were recruited. Of these, two participants were excluded as their score on the ACE-III indicated significantly reduced cognitive performance, and one participant was excluded from the analysis as they did not complete both assessment sessions within 5 weeks. Participants ($n = 39$) were aged between 59 and 93 ($M = 71.9$, $SD = 11.7$). Participants reported leaving school between 14 and 18 years of age ($M = 16.08$, $SD = 1.06$), and reported between 9 and 20 years of total overall education ($M = 14.08$, $SD = 3.29$). 26 participants reported corrected vision impairments, and 10 participants reported some degree of hearing impairment. Further participant demographic information can be found in Table 1.

[Insert Table 1 about here]

Feasibility and Acceptability of Assessments via Telehealth

The majority of participants were able to complete all assessment items in each format. All thirty-nine participants who were included in the analysis reported that there were no significant technical difficulties that occurred during testing. One participant reported experiencing minor audio issues when completing the telehealth format, however these were easily resolved in the initial interview phase prior to assessments commencing without influencing the outcomes of the assessment. One participant was unable to complete the visuospatial drawing tasks on the ACE-III due to motor difficulties, however this occurred in both formats and only accounted for 8% of the possible score. Participant responses to Likert-scale Acceptability Questionnaire are presented in Table 2, where a score of 1 meant poor and a score of 10 meant excellent for audio and video quality, and strongly disagree and strongly agree respectively for other statements. All but one statement was on average rated as above 9 on the 10-point scale. Participant comments are included in Appendix C.

[Insert Table 2 about here]

To explore the impact of independent variables on the acceptability of the telehealth format, participant scores on the acceptability questionnaire were summed into an overall rating of acceptability. Nine participants did not provide an answer to Question 8 (“The assessment provided online was as good as face to face”) or Question 9 (“I would recommend this type of assessment to others”) so these questions were removed from the overall total rating. The relationship between acceptability scores and variables of age, total education, and mood as measured by the HADS was explored using Pearson’s Correlations. There were no significant correlations detected between these variables and participant acceptability of telehealth. As participant responses to the acceptability questionnaire were not normally distributed, a Mann-Whitney U test was used to explore whether acceptability differed based on gender, the presence of corrected visual impairments, or hearing

impairments. There were no significant differences found for acceptability for gender, vision impairments, or hearing impairments.

Reliability of Telehealth Format

The agreement between assessment formats as an indication of reliability was explored using Intra-class Correlations (Bartko, 1966; Table 3). Based on 95% confidence intervals, ICC estimates for each assessment indicated high levels of agreement between formats.

[Insert Table 3 about here]

An examination of the dataset indicated that there were no instances of change in diagnostic category – whether someone was below the cut-off score - between assessment sessions for the ACE-III. For the HADS depression scale, two participants changed diagnostic categories across assessment sessions, both reducing from borderline to normal. For both participants, scores were reduced from first to second session, and from face-to-face to telehealth formats. Four participants changed diagnostic category on the HADS anxiety scale from first to second assessment session: One participant who completed the face-to-face format first reduced from the borderline to normal category, one participant who completed the face-to-face format first increased from normal to borderline, and two participants increased from normal to abnormal across assessment sessions, both of whom completed the telehealth format first. One of these participants reports an ongoing family crisis at the time of the second session which increased their anxiety score.

On the MBI, four people changed diagnostic categories across sessions, with two participants increasing in score from first to second session, and two participants decreasing in score. In each case this change represented a change in score of one item on the MBI. No cut-off scores or diagnostic categories are available for the ALSAR-R2 or the BASS.

Secondary Analysis

Descriptive statistics. Descriptive statistics for each assessment across both formats are presented in Table 4. BASS scores in both formats were within expected range for a healthy population (Kelly, Bell-Weinberg & McDonald, in prep). The mean score for the HADS in both formats was in the borderline clinical range (Zigmond & Snaith, 1983). Mean MBI scores in both formats was in the range of ‘slight dependence’ (Shah et al., 1989). Finally, mean ratings for the ALSAR-R2 were in the low-risk range (Clemson et al., 2009).

[Insert Table 4 about here]

Relationship between Assessment Tools. Pearson’s Correlations were used to explore the relationship between different assessments in each format. Table 5 presents the correlations between assessment tools in the face-to-face format, while Table 6 presents the correlations for the telehealth format.

[Insert Table 5 about here]

ACE-III scores correlated moderately and positively with BASS scores, strongly and positively with the MBI, and strongly and negatively with the ALSAR-R2. ALSAR-R2 scores were also moderately negatively correlated with BASS scores, and strongly negatively correlated with MBI scores. This pattern was present for both the face-to-face and telehealth formats.

[Insert Table 6 about here]

Two-tailed Fisher’s r to z transformations (Fisher, 1915; 1921) were used to explore the difference in the correlations between assessment tools across formats. There was no significant difference in correlation between the ACE-III and the BASS ($z = -.12, p = .90$), the MBI ($z = .36, p = .72$), or the ALSAR-R2 ($z = .09, p = .93$) in the face-to-face and

telehealth formats. There was also no significant difference in correlations between the ALSAR-R2 and the BASS ($z = .5, p = .30$) and MBI ($z = -.33, p = .74$).

Explanatory variables. The correlations between assessment scores and age, total education, and mood were explored for both face-to-face (Table 7) and telehealth (Table 8) formats.

[Insert Table 7 about here]

Age was moderately negatively correlated with performance on the ACE-III and BASS, as well as total MBI score, and positively correlated with total ALSAR-R2 score in both formats. Total education was positively correlated with performance on the ACE-III and total MBI score, and negatively correlated with total ALSAR-R2 score in both formats. In the face-to-face format, there was a moderate negative correlation between HADS score for anxiety and total MBI score. Mood was otherwise not found to be significantly correlated with performance or total score on any other assessment in either format.

[Insert Table 8 about here]

Two-tailed Fisher's r to z transformations (Fisher, 1915; 1921) were used to explore the difference between these correlations for both assessment formats and independent variables. The difference between correlations was not found to be significant for age and the ACE-III ($z = -.24, p = .81$), BASS ($z = .45, p = .65$), MBI ($z = -.14, p = .88$), and ALSAR-R2 ($z = -.16, p = .87$), or for total education and the ACE-III ($z = -.22, p = .83$), MBI ($z = .23, p = .82$) and ALSAR-R2 ($z = .02, p = .98$).

The relationship between assessment scores and categorical independent variables of gender, family history of dementia, personal history of mental health issues, and the presence of hearing impairments or corrected visual impairments was explored using Mann-Whitney tests, as assessment scores were generally not normally distributed. For telehealth testing,

Mann-Whitney U tests indicated that participant who reported a personal history of mental health issues scored higher on the HADS depression scale ($mdn = 4.5$) than those with no reported history of mental health issues ($mdn = 2$), $U = 58.0, p = .005$. Participants with a reported history of mental health issues also scored higher on the anxiety scale ($mdn = 6$) than those without ($mdn = 3$), $U = 70.5, p = .016$, and on the total scale ($mdn = 10.5$) than those without ($mdn = 6$), $U = 59.5, p = .006$. This result was also found in face-to-face testing, with participants who reported a history of mental health issues scoring higher on the HADS scores for depression ($mdn = 5$) compared to those without ($mdn = 2$), $U = 44.5, p = .001$, anxiety ($mdn = 7$) than those without ($mdn = 3$), $U = 62.0, p = .008$, and total score ($mdn = 12$) than those without ($mdn = 6$), $U = 50.0, p = .002$. There were no other significant relationships between these independent variables and assessment scores.

Practice effects. A one-way repeated measures ANOVA was conducted to explore potential practice effects for each of the five assessments. There was no significant main effect of starting format for the ACE-III ($F(1,38) = 1.058, p = .310$), BASS ($F(1,38) = .234, p = .632$), HADS ($F(1,38) = .960, p = .333$), MBI ($F(1,38) = .113, p = .738$) or ALSAR-R2 ($F(1,38) = .268, p = .608$).

Discussion

This study has provided preliminary evidence of the feasibility and acceptability of administering a screening assessment battery for older adults via telehealth. Further, we have provided initial evidence for the reliability of these when adapted for telehealth. Participants were able to complete the same number of assessment items in both formats, including those that had been adapted for use via telehealth and reported no significant concerns or problems using this format. Overall, the current study suggests that the ACE-III, BASS, HADS, MBI and ALSAR-R2 are suitable for administration via telehealth among healthy older adults.

The use of telehealth for age-related assessments was generally well received. Participants identified a high level of quality for the audio and video components of the assessment, and reported very few technical issues, which have been identified as core factors in user acceptance (Luxton et al., 2014). Interestingly, in contrast to previous research such as Grumbaugh et al., (2008) age was not found to have a significant relationship with the acceptability of telehealth, nor was gender or current mood status. Participants generally endorsed all statements of the acceptability of telehealth highly which is consistent with previous research (Tousignant et al., 2010), with the lowest rating for confidence using telehealth. A review of participant comments provided during the Acceptability Questionnaire regarding telehealth indicated that several participants were previously unfamiliar with Skype, which may account for lower confidence, as seen previously in similar research (Grumbaugh et al., 2008). Of note, due to limitations of Skype, this study involved the use of multiple software platforms (ie: Skype and Qualtrics) which may have introduced an additional level of complexity for some participants. While Skype is a highly accessible technology, future research in clinical populations should explore the use of specialised software that may improve user experience.

Greater variability in the range of responses relating to the suitability of telehealth for these assessments, confidence using telehealth, and the subjective comparison of telehealth versus face-to-face testing indicates that while telehealth is generally suitable for these assessments, traditional assessments formats are more preferred. This may be accounted for by a general unfamiliarity with telehealth, or more specifically due to changes in rapport due to the remote nature of assessment. An important consideration, however, is that the acceptability of telehealth may be greater for those who can benefit from it the most (Luxton et al., 2014). A primary example is those living in rural and remote areas who would have no other option than to travel extensively to access healthcare services. This population was not

highly represented in this study which may have had an impact on acceptability, and future research should continue to examine attitudes towards telehealth. An additional consideration is in the timing of the collection of acceptability data. The acceptability questionnaire was completed following the telehealth format, often requiring participants to recall information from three to five weeks previously.

The acceptability of these assessments via telehealth is important for overall reliability and clinical utility and should remain an ongoing issue for exploration in future research (Luxton et al., 2014). As participants generally rated the use of telehealth positively, any modulating effect of user acceptance can be minimized (Elhai et al., 2012). Barriers to assessment are also reduced, in that participants are more likely to utilise telehealth if there is a higher acceptance of the technology (Luxton et al., 20134). However, participants past experience using telehealth technologies may impact user acceptance, and this was not controlled for in the current study. As factors such as emotional state, attention, and motivation can be related to the acceptability of telehealth, and further, the engagement in the assessment process, future research should consider the impact of acceptability on these factors, and vice versa, particularly within rural and remote communities.

Correlations between assessment tools, and between each tool and independent variables were generally consistent across formats. This is a good indication that the characteristics of the assessment battery are consistent when conducted in both the telehealth and the face-to-face formats, and that there was a degree of consistency between outcomes for both formats. This in turn indicates that the relationship between the assessed variables is preserved across assessment formats, even with potentially significant changes being made to some of the measures used. As these relationships are preserved, this study provides preliminary evidence that the whole assessment battery, rather than just the individual assessments, has similar clinical utility regardless of the assessment format.

While the relationship between assessment scores and independent variables of age, education, mood, family history of dementia, personal history of mental health issues, and the presence of any visual or auditory difficulties was generally consistent across assessment formats, there was a significant correlation between anxiety and ADLs in the face-to-face format. While anxiety has been noted to play a complex role in assessment outcomes (Luxton et al., 2014), one potential explanation is that the assessment sessions occurred up to 5 weeks apart, and mood is more likely subject to change in comparison to more stable constructs such as cognition or level of everyday functioning. This may be further evidenced by the changes in diagnostic category on the HADS, in particular the anxiety measure, across assessment sessions. Future research should be mindful of the potential interaction between anxiety and telehealth-based assessments, both to clarify any possible relationship between mood and ADL completion, and to reduce the impact of mood on testing conditions.

Strong agreement between assessment tools across assessment formats was observed when examining the reliability of these assessments via telehealth. The strong mean intra-class correlations ranging from .913 to .995 indicate a level of agreement exceeding some similar studies (for e.g. Prestia et al., 2006), and for some tools exceeding the superior levels of agreement identified for functional assessments by Hwang et al. (ICC = 0.85 to ICC = 0.96; 2017) and for mental health measures by Kobak (ICC = 0.88; 2004). Further, one-way ANOVA results indicate that this strong level of agreement cannot be accounted for by practice effects. In exploring the use of these assessments via telehealth, the strong levels of agreement between formats found by this study has provided good preliminary evidence for their reliability.

This study explored agreement between two testing formats specifically looking at a group of healthy participants in a controlled, experimental setting. This was necessary primarily to reduce the possible sources of variance in test results and gain a more accurate

initial assessment of agreement (Agboola et al., 2014). Future research should examine these tools both with a clinical sample of people with dementia, and in a real-world setting. While this sample had positive attitudes towards telehealth and was able to complete testing via telehealth with minimal disruptions, technical issues, and technical support, this may not be the case for clinical samples (Greenhalgh et al., 2013). With participants in the healthy sample of this study reporting lower levels of confidence to use Skype for testing, it can be expected that additional support will be required for clinical populations to boost engagement with telehealth and to assist with any technical issues (Banbury et al., 2014). Further research with people experiencing mild-cognitive impairment or dementia is an important step in assessing the barriers to the widespread implementation of telehealth to this population.

In addition to a clinical sample, future research should also focus on a real-world setting rather than an experimental setting. Participant responses in the study were collected by only one student assessor for both formats, which may have resulted in bias across sessions. Future research should explore the use of multiple raters across each format. Additionally, as with a clinical sample, implementation in rural and remote areas can pose specific barriers (Agboola et al., 2014). The impact of internet access and connection quality, support from family members and the availability of alternate testing locations such as community health centres, as well as patient attitudes are areas that should be explored (Armfield et al., 2014). Future research should focus on the impact these barriers have to the implementation of telehealth for assessment purposes.

The results of the current study need to be considered in light of its strengths and limitations. Firstly, a strength of the current study is the exploration of a broad range of screening tools examining multiple domains of function. In doing so, this study has more comprehensively examined multiple screening assessment tools that are indicated for an aging population, contributing to a holistic assessment battery. Additionally, this study goes

further than several studies of telehealth-based assessments, exploring acceptability and agreement as a measure of reliability, rather than only determining feasibility. Further research should aim to utilize a larger sample size, which was a primary limitation of the current study. A greater sample size may allow for a more in-depth, item-by-item analysis of agreement, such as completed by Ciemins et al. (2009). Generalisability was also a limitation, as the study was conducted in one local health district of New South Wales, Australia, which may not be representative of the population or barriers to assessment experienced by rural and remote communities. Similarly, demographic factors such as high education and the degree of previous experience using telehealth may not be reflective of the target populations. Future research should assess a greater range of participants in a variety of geographical locations to account for a diverse population, and contribute to a preliminary exploration of the implementation of telehealth technologies for assessment purposes.

Conclusion

This study represents an important first step in demonstrating the reliability of completing these assessments via telehealth. With good agreement between assessment formats, healthcare professionals can continue to build confidence in these assessment measures when conducted via telehealth. More importantly, as evidence continues to build, people living in rural and remote areas can have greater access to key assessment areas. By demonstrating the suitability of these assessments for use via telehealth, this study can support clinicians to better assess individuals who struggle to access services due to geographical isolation, and more comprehensively tailor further assessment and intervention to individual needs.

The capacity of telehealth to overcome the tyranny of distance in Australia and other countries with higher concentrations of rural communities has seen an increase in focus on

telehealth for assessment and intervention. While directions for future research in exploring the barriers to widespread implementation of telehealth in clinical populations and rural communities have already been discussed, the use of telehealth, particularly for the assessments explored in this study, appears to be a feasible, acceptable, and reliable approach for working with older people. While the broader economic debate continues to evolve and the challenges for implementation are still being discovered, the benefit for the individual is clear.

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Tables

Table 1.

Participant Demographics

Info	n	%
Education		
High school	4	10.2
Trade certificate	14	35.8
Undergraduate	10	25.6
Post-graduate	4	10.3
Other (left school)	7	17.9
Retired	29	74.4
Hearing difficulties	10	25.6
Vision difficulties		
Corrected	26	66.7
Uncorrected	0	0
Family history of dementia	11	28.2
Previous history mental health issues	10	25.6
Medications		
0	15	38.5
1-3	15	38.5
4-6	5	12.8
7+	4	10.3
Alcohol use (standard drinks per week)		
0	25	64.1
1-7	9	23.1
8-14	4	10.3
15+	1	2.6
Regular tobacco/nicotine use	1	2.6

Table 2.

Telehealth Acceptability Information

	n	'Yes' responses		
Q1: Did you experience any technical difficulties?	39	1		
	N	Mean	SD	Range
Q2: How would you rate the audio quality of this assessment session?	39	9.44	.97	6-10
Q3: How would you rate the video quality of this assessment session?	39	9.49	.85	7-10
Q4: Being available online was a good way to complete this assessment	38	9.05	1.41	5-10
Q5: I felt confident using telehealth for this assessment	39	8.87	1.218	6-10
Q6: I could easily talk and express myself effectively	39	9.59	.75	8-10
Q7: Online is an acceptable way to receive this assessment	39	9.46	1.07	5-10
Q8: The assessment provided online was as good as face to face	30	9.10	1.19	5-10
Q9: I would recommend this type of assessment to others	30	9.57	1.04	5-10
Q10: Overall, I was satisfied with this online experience	39	9.64	.74	7-10

Note. Q8 and Q9 were added to the questionnaire after data collection had begun, and so were not collected for a number of participants ($n = 9$).

Table 3.

Intraclass Correlation Coefficients for Assessment Tools

Assessment	Scale	ICC, 95% CI Mean
ACE-III	Total	.971*, .945-.985
BASS	Total	.932*, .871-965
HADS	Total	.913*, .833-.954
MBI	Total	.995*, .991-.997
ALSAR-R2	Total	.994*, .989-.997

Note. * $p < .001$

Table 4.

Descriptive Statistics for Assessments Across Each Assessment Format

Assessment	Face-to-face		Telehealth	
	Mean	Std. Deviation	Mean	Std. Deviation
ACE-III	92.92	5.532	93.13	5.415
BASS	183.46	18.915	183.59	16.644
HADS (Total)	8.56	6.545	7.77	5.324
(Anxiety)	5.282	4.236	4.923	3.779
(Depression)	3.282	2.920	2.846	2.159
MBI	94.54	13.391	94.59	13.686
ALSAR-R2	3.54	6.181	3.67	6.217

Table 5.

Correlation Between Assessment Tools in The Face-to-Face Format

	ACE-III	BASS	HADS	MBI	ALSAR-R2
ACE-III	1	.354*	-.218	.615**	-.638**
BASS		1	-.033	.224	-.335*
HADS			1	-.301	.193
MBI				1	-.776**
ALSAR					1

Note. ** $p < 0.001$, * $p < 0.1$

Table 6.

Correlation Between Assessment Tools in the Telehealth Format

	ACE-III	BASS	HADS	MBI	ALSAR-R2
ACE-III	1	.378*	-.022	.559**	-.651**
BASS		1	.245	.305	-.436**
HADS			1	-.123	.109
MBI				1	-.743**
ALSAR					1

Note. ** $p < 0.001$, * $p < 0.1$

Table 7.

Pearson Correlations Between Face-to-Face Assessments and Explanatory Variables

	ACE-III	BASS	HADS			MBI	ALSAR-R2
			Depression	Anxiety	Total		
Age	-0.582**	-0.341*	0.270	0.128	0.203	-0.514**	0.723**
Total years education	0.446**	-0.001	-0.126	-0.026	-0.073	0.380*	-0.560**
HADS Depression	-0.276	-0.118	—	—	—	-0.202	0.161
Anxiety	-0.146	0.031	—	—	—	-0.326*	0.187
Total	-0.218	-0.033	—	—	—	-0.301	0.193

Note. * $p < 0.05$, ** $p < 0.01$

Table 8.

Pearson Correlations Between Telehealth Assessments and Explanatory Variables

	ACE-III	BASS	HADS			MBI	ALSAR-R2
			Depression	Anxiety	Total		
Age	-0.544**	-0.432**	0.205	-0.041	0.054	-0.489**	0.740**
Total years education	0.404*	0.077	-0.084	-0.025	-0.052	0.332*	-0.564**
HADS Depression	-0.183	0.071	—	—	—	-0.173	0.114
Anxiety	0.074	0.304	—	—	—	-0.074	0.088
Total	-0.022	0.245	—	—	—	-0.123	0.109

Note. * $p < 0.05$, ** $p < 0.01$

Assessment Measures

PROTOCOL – Telehealth BASS Study Clinical Interview

Participant ID:	Group:	Time start:
Name:		Time finish:
DOB:		Date:
Gender:	Handedness:	
Age participant left school:		
Years of education total to date:		
Qualification level:		
Occupation:		
Age at retirement:		
Hx TBI, epilepsy, other neurological condition:		
Y / N (detail)		
Vision and/or hearing impairment:		
AOD use:		
Tobacco:		
Mental health dx/hx:		
Dementia dx: Who	When	What
Family hx of dementia:		
Other medical (e.g. risk factors): diabetes, obesity, recent admissions, recent DX		
Previous testing:		
Falls Hx:		
Medication:		
GPs name:		
Date of last visit, regularity of GP visits:		

Consent form
Demographic information
ACE-III
HADS
BASS
MBI
ALSAR-R2
Telehealth acceptability questionnaire

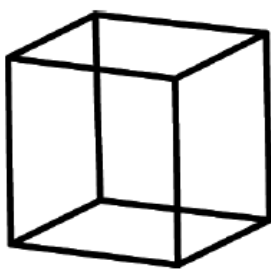
Debrief

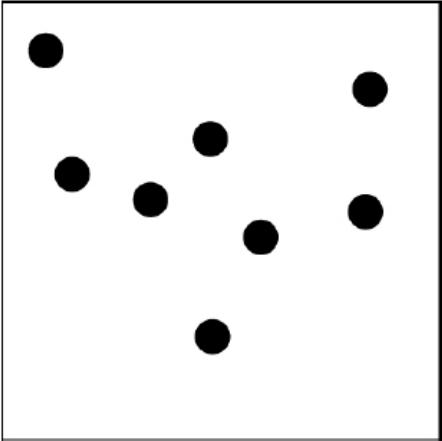
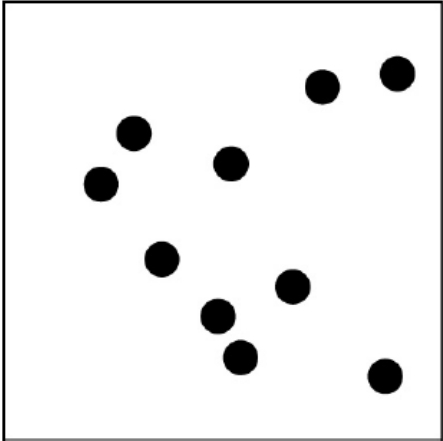
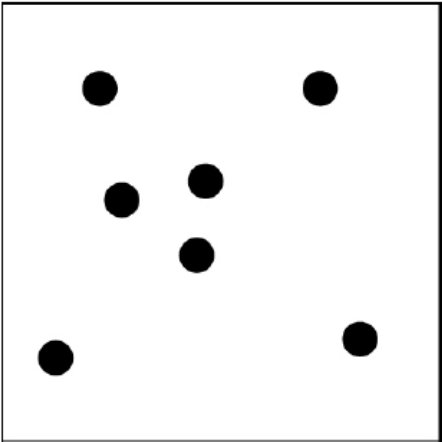
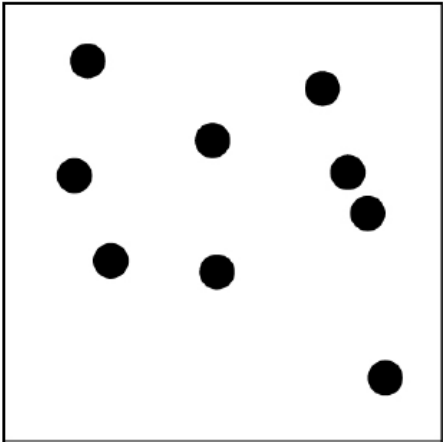
Addenbrooke's Cognition Examination, 3rd Edition

ADDENBROOKE'S COGNITIVE EXAMINATION – ACE-III Australian Version A (2012)						
Name: _____ Date of Birth: _____ Hospital No. or Address: _____			Date of testing: ____/____/____ Tester's name: _____ Age at leaving full-time education: _____ Occupation: _____ Handedness: _____			
ATTENTION *(Sum together only the items in BOLD for the M-ACE score)						
➤ Ask: What is the	Day _____	Date _____	Month _____	Year _____	Season _____	Attention [Score 0-5]
➤ Ask: Which	No./Floor _____	Street/Hospital _____	Suburb _____	State _____	Country _____	Attention [Score 0-5]
ATTENTION						
➤ Tell: "I'm going to give you three words and I'd like you to repeat them after me: lemon, key and ball." After subject repeats, say "Try to remember them because I'm going to ask you later". ➤ Score <i>only</i> the first trial (repeat 3 times if necessary). ➤ Register number of trials: _____						Attention [Score 0-3]
ATTENTION						
➤ Ask the subject: "Could you take 7 away from 100? I'd like you to keep taking 7 away from each new number until I tell you to stop." ➤ If subject makes a mistake, do not stop them. Let the subject carry on and check subsequent answers (e.g., 93, 84, 77, 70, 63 – score 4). ➤ Stop after five subtractions (93, 86, 79, 72, 65): _____						Attention [Score 0-5]
MEMORY						
➤ Ask: 'Which 3 words did I ask you to repeat and remember?' _____						Memory [Score 0-3]
FLUENCY						
➤ Letters Say: "I'm going to give you a letter of the alphabet and I'd like you to generate as many words as you can beginning with that letter, but not names of people or places. For example, if I give you the letter "C", you could give me words like "cat, cry, clock" and so on. But, you can't give me words like Catherine or Canada. Do you understand? Are you ready? You have one minute. The letter I want you to use is the letter "P".						Fluency [Score 0 – 7]
						≥ 18 7 14-17 6 11-13 5 8-10 4 6-7 3 4-5 2 2-3 1 0-1 0 total correct
➤ Animals Say: "Now can you name as many animals as possible. It can begin with any letter."						Fluency [Score 0 – 7]
						≥ 22 7 17-21 6 14-16 5 11-13 4 9-10 3 7-8 2 5-6 1 <5 0 total correct

MEMORY			
➤ Tell: "I'm going to give you a name and address and I'd like you to repeat the name and address after me. So you have a chance to learn, we'll be doing that 3 times. I'll ask you the name and address later." Score only the third trial.			Memory [Score 0 – 7]
	<i>1st Trial</i>	<i>2nd Trial</i>	<i>3rd Trial</i>
Harry Barnes 73 Market Street Rockhampton Queensland	_____ _____ _____ _____	_____ _____ _____ _____	_____ _____ _____ _____
MEMORY			
➤ Name of the current Prime Minister..... ➤ Name of the current Premier of New South Wales..... ➤ Name of the USA president..... ➤ Name of the USA president who was assassinated in the 1960s.....			Memory [Score 0 – 4]
LANGUAGE			
➤ Place a pencil and a piece of paper in front of the subject. As a practice trial, ask the subject to "Pick up the pencil and then the paper." If incorrect, score 0 and do not continue further. ➤ If the subject is correct on the practice trial, continue with the following three commands below. - Ask the subject to "Place the paper on top of the pencil" - Ask the subject to "Pick up the pencil but not the paper" - Ask the subject to "Pass me the pencil after touching the paper" Note: Place the pencil and paper in front of the subject before each command.			Language [Score 0-3]
LANGUAGE			
➤ Say: "I want you to write two sentences. It can be about anything that you like. I want you to write in full sentences and avoid abbreviations." If the subject does not know what to write about, you could suggest a few topics. "For instance, you could write about a recent holiday, your hobbies, your family or childhood." If the subject writes only one sentence, then prompt for a second one. Sentences must contain a subject and a verb. Spelling and grammar are penalized. Sentences do not need to be about the same topic. See scoring guidelines for more information.			Language [Score 0-2]
LANGUAGE			
➤ Ask the subject to repeat: 'caterpillar'; 'eccentricity'; 'unintelligible'; 'statistician' Score 2 if all are correct; score 1 if 3 are correct; and score 0 if 2 or less are correct.			Language [Score 0-2]

LANGUAGE	
➤ Ask the subject to repeat: 'All that glitters is not gold'	Language [Score 0-1]
➤ Ask the subject to repeat: 'A stitch in time saves nine'	Language [Score 0-1]
LANGUAGE	
➤ Ask the subject to name the following pictures:	Language [Score 0-12]
LANGUAGE	
➤ Using the pictures above, ask the subject to: • Point to the one which is associated with the monarchy • Point to the one which is a marsupial • Point to the one which is found in the Antarctic • Point to the one which has a nautical connection 	Language [Score 0-4]

LANGUAGE	
➤ Ask the subject to read the following words: (Score 1 only if all correct) sew pint soot dough height	Language [Score 0-1]
VISUOSPATIAL ABILITIES	
➤ Infinity Diagram: Ask the subject to copy this diagram.	Visuospatial [Score 0-1]
	
➤ Wire cube: Ask the subject to copy this drawing (for scoring, see instructions guide).	Visuospatial [Score 0-2]
	
➤ Clock: Ask the subject to draw a clock face with numbers. Then, ask the subject to put the hands at ten past five. (For scoring see instruction guide: circle = 1, numbers = 2, hands = 2 if all correct).	Visuospatial [Score 0-5]

VISUOSPATIAL ABILITIES	
➤ Ask the subject to count the dots without pointing to them	Visuospatial [Score 0-4]
	
	

VISUOSPATIAL ABILITIES					
➤ Ask the subject to identify the letters					Visuospatial [Score 0-4]
					
					
MEMORY					
➤ Ask "Now tell me what you remember about that name and address we were repeating at the beginning"					
Harry Barnes 73 Market Street Rockhampton Queensland					Memory [Score 0-7]
MEMORY					
➤ This test should be done if the subject failed to recall one or more items above. If all items were recalled, skip the test and score 5. If only part was recalled start by ticking items recalled in the shadowed column on the right hand side; and then test not recalled items by telling the subject "ok, I'll give you some hints: was the name X, Y or Z?" and so on. Each recognised item scores one point, which is added to the point gained by recalling.					Memory [Score 0-5]
Jerry Barnes		Harry Barnes		Harry Bradford	recalled
37		73		76	recalled
Market Road		Martin Street		Market Street	recalled
Townsville		Rockhampton		Cairns	recalled
Queensland		New South Wales		Victoria	recalled
SCORES					
TOTAL ACE-III SCORE					/100
TOTAL M-ACE SCORE					/30
Attention					/18
Memory					/26
Fluency					/14
Language					/26
Visuospatial					/16

Brief Assessment of Social Skills

BRIEF ASSESSMENT OF SOCIAL SKILLS (BASS) Version A_(22.11.17)							
Name: _____ Gender: _____ Date of Birth: ____/____/____ Age at Assessment: _____ Id. No./MRN: _____ Age at leaving school: _____				Date of Testing: ____/____/____ Assessors Name: _____ Location of Assessment: _____ _____ Time assessment commenced: _____ Time assessment completed: _____			
0. NEW FACES							
Say "I'm going to introduce you to some new people and tell you a little about them. I'd like you to remember them and what I tell you about them for later" (show Stimulus Card 0) Say... 1) This is Max 2) Max is your gardener 3) Max visits you on Thursdays Max is your gardener and visits Thursdays Say... 1) This is Tracy 2) Tracy is your nurse 3) Tracy visits you on Wednesdays Tracy is your nurse and visits Wednesdays Say... 1) This is Jane 2) Jane is your cleaner 3) Jane visits you on Mondays Jane is your cleaner and visits Mondays							
1. EMOTION LABELLING (record on Answer Card 1)							
Part A Ask "What emotion or feeling is the person displaying (show Stimulus Card 1A)?" Say "Choose from these emotions" (show Response Card 1A, read emotion words aloud if necessary).							
Item							
1	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
2	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
3	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
4	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
5	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
6	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
7	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
8	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
9	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
10	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
11	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
12	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
13	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
14	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
15	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
16	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
17	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
18	Happy	Neutral	Fear/Scared	Sad	Surprised	Angry	Disgust/Rev
Total Correct							/18

Part B

Ask "What emotion or feeling is the person displaying (show Stimulus Card 1B)?"

Say "Choose from these emotions" (show Response Card 1B, read emotion words aloud if necessary)

Item					Positive	Negative		
1	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
2 (F)	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
3	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
4	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
5	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
6	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
7	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
8	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
9	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
10	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
11	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
12	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
13	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
14	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
15	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
16	Happy	Neutral	Fear	Sad	Surprised	Shocked	Angry	Disgust
						Total Correct		/16

Part C

Ask "What emotion or feeling is the person displaying (show Stimulus Card 1C)?"

Say "Choose from these emotions" (show Response Card 1C, read emotion words aloud if necessary)

Item						
1	Amused	Contempt	Embarrassed	Excited	Interested	Relief
2	Amused	Contempt	Embarrassed	Excited	Interested	Relief
3 (F)	Amused	Contempt	Embarrassed	Excited	Interested	Relief
4 (M)	Amused	Contempt	Embarrassed	Excited	Interested	Relief
5	Amused	Contempt	Embarrassed	Excited	Interested	Relief
6 (F)	Amused	Contempt	Embarrassed	Excited	Interested	Relief
7 (M)	Amused	Contempt	Embarrassed	Excited	Interested	Relief
8	Amused	Contempt	Embarrassed	Excited	Interested	Relief
9	Amused	Contempt	Embarrassed	Excited	Interested	Relief
10	Amused	Contempt	Embarrassed	Excited	Interested	Relief
11	Amused	Contempt	Embarrassed	Excited	Interested	Relief
12 (M)	Amused	Contempt	Embarrassed	Excited	Interested	Relief
					Total Correct	/12

	Part A	Part B	Part C	Combined total
Emotion labelling	/18	/16	/12	/46

2. EMOTION MATCHING					
Part A					
Ask "Are these two people (show Stimulus Card 2A) showing the same emotion?" Circle the response given (correct in bold font).					
1. Yes / No	2. Yes / No	3. Yes / No	4. Yes / No	Total:	/4
Part B					
Ask "Are these two people (show Stimulus Card 2B) showing the same emotion?" Circle the response given (correct in bold font).					
1. Yes / No	2. Yes / No	3. Yes / No	4. Yes / No	Total:	/4
Part C					
Ask "Are these two people (show Stimulus Card 2C) showing the same emotion?" Circle the response given (correct in bold font).					
1. Yes / No	2. Yes / No	3. Yes / No	4. Yes / No	Total:	/4
				Total:	/12
3. FACIAL IDENTIFICATION					
Ask "Do you recognise this person (show Stimulus Card 3)?" Circle the response given.					
Complete all of A before moving on to B and C which can be asked together.					
Ask "Do you know this person's name?"					
Ask "What are they famous for?" Record the response below.					
A. Recognition	B. Identification	C. Known for?			
1. Yes / No	Elvis Presley	Singing, Acting			
2. Yes / No	Margaret Thatcher	Prime Minister, England, UK			
3. Yes / No	Jo Diwan's	Baseball, New York Yankees			
4. Yes / No	Lucille Ball	Actress			
5. Yes / No	Helen Williams	Fashion, 1 st black woman in fashion			
6. Yes / No	Franklin Roosevelt	32 nd US president			
7. Yes / No	Mohammed Ali or Cassius Clay	Boxer			
8. Yes / No	Buddy Holly	Singer			
9. Yes / No	Mahatma Ghandi	India, peace activist, civil rights leader			
10. Yes / No	Marilyn Monroe	Actress			
11. Yes / No	Roy Rodgers	Actor, singer, cowboy			
12. Yes / No	Joseph Stalin	Russia, dictator, USSR			
13. Yes / No	Jackie Robinson	Baseball, 1 st black American in Major League			
14. Yes / No	James Dean	Actor			
15. Yes / No	Barbara Eden	Actress, I Dream of Jeannie			
16. Yes / No	Albert Einstein	Physicist, inventor, scientist			
Total:	/16	/16	/16		

4. EMPATHY / THEORY OF MIND

For this part of the test you will need Stimulus Cards 4A, 4B, 4C and Response Card 4D. Record all responses on 4D.

For each item, ask the following questions:

- Show Card 4C (Page 1) and Say "How do you think this person is feeling", __ (note response on 4D) __, now **IF INCORRECT** say "this person is feeling __ (insert correct response from 4B) __".
- Say "What do you think is happening in this picture to make him/her feel __ (insert correct feeling) __?"
- Show Card 4C (Page 2) and Say "How affected are you by this picture (worked up/excited)?" (SAM 0-2)
- Show Card 4C (Page 2) and Say "How concerned are you for this person?" (rating 0-2)
- Say "Would you do anything if you saw this happening?"

Item No.	i. What Emotion	ii. What is happening in the scene?	iii. How affected (SAM)?	iv. How concerned (0-2)?	v. Action?
1 Girl	Sad/lonely	Child left out, ostracized, isolated from other children			Yes / No
2					Yes / No
3 Wed	Happy	Just married, wedding scene, happily married couple			Yes / No
4 Mum	Proud/ excited	Mother with child walking in frame ?1" time			Yes / No
5 Train	Happy	Couple reuniting at train station			Yes / No
6 (M)	Happy	Father and son bonding			Yes / No
7 (M)	Angry	man at work desk with phone, head on desk, someone yelling on other end or talking too long			Yes / No
8 (F)	Sad	Lady sitting on side of bed in morning, maybe regretting what had transpired the evening before			Yes / No
9 Group	Nervous	Lady sitting in front of interview panel of 3			Yes / No
10 Kid	Sad/lonely	African child looking malnourished			Yes / No
11 Kid Y	Sad	Child sitting on sidelines of soccer game alone, maybe sent off or maybe not allowed to play			Yes / No
12 Fam	Scared	Mother sheltering child from angry/?abusive father			Yes / No
13 Cat	Worried	Man at vet with his pet cat who is sick			Yes / No
14 Fans	Excited	Fans watching sporting match cheering			Yes / No
15 Coffin	Sad	Funeral, death of a loved one			Yes / No
16 Sign	Angry	Protestors marching			Yes / No

Item No.	i. What Emotion	ii. What is happening in the scene?	iii. How affected (SAM)?	iv. How concerned (0-2)?	v. Action?
17 Sick	Sad/worried	Loved one sick in hospital bed			Yes / No
18					Yes / No
19 Doc	Worried	Lady getting news from her doctor, maybe bad news			Yes / No
20 (F)	Scared	Female worker being yelled at by male colleague			Yes / No
21 Boy	Sad/scared	Child being seen by doctor, child crying			Yes / No
22					Yes / No
Total Score	/19	/19	/38	/38	/19

5. SOCIAL DISINHIBITION

For this part of the test you will need Stimulus Card 5A. Record responses below.

You will also ****Need stopwatch for this section****

Part A

Read Questions from Stimulus Questions 5A.

Point to each person in the picture as you read explanation.

Please record response time (i.e., time to response) and response.

Part (i)	Time (sec)	Response	Score
Due to a big night out, Doug was feeling rather sleepy at his work meeting the next morning. Tell me what you think about Doug.			
1. Doug			
Benjamin ran into his ex-girlfriend Andrea on his way to work. Tell me what you think about Andrea.			
2. Andrea			
Samantha just bought herself a brand new pair of overalls to help her brother David paint his fence. Tell me what you think about David.			
3. David			
Mary was trying to do some last minute study for her law exam. Noah wanted to tell Mary all about the novel that he just finished reading. Tell me what you think about Noah.			
4. Noah			
Ralph was tired. His girlfriend Maria was preparing the house for the dinner party that they were having that night. Tell me what you think about Ralph.			
5. Ralph			
Total Part A(i)			
Average Response Time (add items 1-5 and divide by 5)			

Part (ii)	Time (sec)	Response	Score
Natasha was struggling to carry the folders to the meeting. Her boss Darryl was nearby. Tell me what you think about Darryl.			
6. Darrel			
Deepa was sorry that she hadn't studied for her biology exam. She didn't want to fail. Tell me what you think about Deepa.			
7. Deepa			
Jacky was taking her break at work. Her boss Peter saw her playing cards in the meeting room. Peter told her not to be so lazy and to get back to work. Tell me what you think about Peter.			
8. Peter			
Heather was not impressed that her co-worker Charles was taking it easy for the day. Tell me what you think about Charles.			
9. Charles			
Andy was not impressed that Julie had sent the wrong letter out to his client. Tell me what you think about Andy.			
10. Andy			
Total Part A(ii)			
Average Response Time (add items 6-10 and divide by 5)			

Part B**Inhibition 1:**

BEFORE the assessment. To prepare for this task, please create the stimulus card using Stimulus Card Example 5A. Replace all the 'Participant' with your clients name using find and replace function in Word, then print. (**if the participants name is Pat or similar, substitute with 'Chris'.

- i) Say "on this card you will see your name and another name printed. I'd like you to read these out aloud as quickly as you can without making mistakes. When you finish this list, go to the next one quickly". Now try the first four items as practice (correct the person where necessary).

After practice say "Good, when I say BEGIN read the names, one after the other, without skipping any. When you finish this list, move onto the next list until you get to the end of the last list. Remember to go as quickly as possible. Ready? BEGIN". ****Begin timing when you say begin, Stop timing when the client gets to the end of the page****

Column 1 TIME (in seconds) : _____ Number of errors: _____
Column 2 TIME (in seconds) : _____ Number of errors: _____
Column 3 TIME (in seconds) : _____ Number of errors: _____
TOTAL (1+2+3) : _____ B(i) : _____

- ii) Say "this time, when you see your name say 'Pat (or Chris)' and when you see 'Pat (or Chris)' say your name. Now try the first four items as practice (correct the person where necessary).

After practice say "Good, when I say BEGIN read the names, one after the other, without skipping any. When you finish this list, move onto the next list until you get to the end of the last list. Remember to go as quickly as possible. Ready? BEGIN". ****Begin timing when you say begin, Stop timing when the client gets to the end of the page****

Column 1 TIME (in seconds) : _____ Number of errors: _____
Column 2 TIME (in seconds) : _____ Number of errors: _____
Column 3 TIME (in seconds) : _____ Number of errors: _____
TOTAL (1+2+3) : _____ B(ii) : _____

6. SOCIAL REASONING

Use Stimulus Card 6, point to observers

1. Say "What would you do if you saw a man drop his wallet (point to picture)"? Record response, then offer multiple choice responses below. Circle response given.

-
- a) Yell out to him to tell him
 - b) Pick it up and put it in your bag
 - c) Keep walking
 - d) Pick it up and give it to the next person that walks past you

2. Say "What would you do if you saw a man fall off his bicycle?" Record response, then offer multiple choice responses below. Circle response given

-
- a) Laugh out loud friend
 - b) Stop to offer help
 - c) Walk right by
 - d) Take his bike

Say "What's wrong here?" (Use Stimulus Card 6, do not point). Record response then give multiple choice items for each. Circle their response.

3. Record response (cheating exam) _____
 - a) The teacher is not helping
 - b) The boy is cheating
 - c) They are not in school uniform
 - d) Boys should not sit next to girls
4. Record response (eavesdropping) _____
 - a) They are eavesdropping
 - b) They are not working hard
 - c) The door is locked
 - d) There is an African American man
5. Record response (escalator) _____
 - a) They're standing too close to her
 - b) She is blocking the escalator
 - c) She's wearing a green shirt
 - d) The people behind are being impatient

7. NEW FACES (DELAY MEMORY)																			
Say "I introduced you to some new people at the beginning of the test and told you a little about them, I'll now ask you to identify them and tell me what you remember about them" (show Stimulus Card 7) Circle and note down responses here. I responses are correct, check the recalled box for each item. If the response is incorrect, prompt with the recognition task for each incorrect piece of information. Provide recognition prompts only if the participant failed to recall one of the items. If the participant correctly recalls all items, give a full score for the recognition component.																			
A. Recognition	B. Name	C. Role?	D. Day visits																
1. Yes / No	_____	_____	_____																
2. Yes / No	_____	_____	_____																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Tracy</td> <td style="width: 33%;">Michelle</td> <td style="width: 33%;">Kristina</td> <td style="width: 10%;">Recalled</td> <td style="width: 10%;"></td> </tr> <tr> <td>Companion</td> <td>Nurse</td> <td>Cleaner</td> <td>Recalled</td> <td></td> </tr> <tr> <td>Tuesdays</td> <td>Wednesdays</td> <td>Fridays</td> <td>Recalled</td> <td></td> </tr> </table>					Tracy	Michelle	Kristina	Recalled		Companion	Nurse	Cleaner	Recalled		Tuesdays	Wednesdays	Fridays	Recalled	
Tracy	Michelle	Kristina	Recalled																
Companion	Nurse	Cleaner	Recalled																
Tuesdays	Wednesdays	Fridays	Recalled																
3. Yes / No	_____	_____	_____																
4. Yes / No	_____	_____	_____																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Sarah</td> <td style="width: 33%;">Jane</td> <td style="width: 33%;">Mandy</td> <td style="width: 10%;">Recalled</td> <td style="width: 10%;"></td> </tr> <tr> <td>Personal care</td> <td>Cleaning</td> <td>Transport</td> <td>Recalled</td> <td></td> </tr> <tr> <td>Mondays</td> <td>Thursdays</td> <td>Fridays</td> <td>Recalled</td> <td></td> </tr> </table>					Sarah	Jane	Mandy	Recalled		Personal care	Cleaning	Transport	Recalled		Mondays	Thursdays	Fridays	Recalled	
Sarah	Jane	Mandy	Recalled																
Personal care	Cleaning	Transport	Recalled																
Mondays	Thursdays	Fridays	Recalled																
5. Yes / No	_____	_____	_____																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">John</td> <td style="width: 33%;">Max</td> <td style="width: 33%;">Sam</td> <td style="width: 10%;">Recalled</td> <td style="width: 10%;"></td> </tr> <tr> <td>Gardener</td> <td>Handyman</td> <td>Taxi driver</td> <td>Recalled</td> <td></td> </tr> <tr> <td>Mondays</td> <td>Thursdays</td> <td>Saturdays</td> <td>Recalled</td> <td></td> </tr> </table>					John	Max	Sam	Recalled		Gardener	Handyman	Taxi driver	Recalled		Mondays	Thursdays	Saturdays	Recalled	
John	Max	Sam	Recalled																
Gardener	Handyman	Taxi driver	Recalled																
Mondays	Thursdays	Saturdays	Recalled																
6. Yes / No	_____	_____	_____																
SCORES																			
1. Emotion labelling: Part A _____ + Part B _____ + Part C _____ = _____ /46 2. Emotion matching: Part A _____ + Part B _____ + Part C _____ = _____ /12 3. Facial identification: Part A _____ /16; Part B _____ /16; Part C _____ /16 4. Empathy: i. _____ /19; ii. _____ /19; iii. _____ /38; iv. _____ /38; v. _____ /19 5. Social Disinhibition: Part Ai: _____ Aii: _____; Errors: Part Bi: _____ Part Bii: _____ 6. Social Reasoning: _____ /5 7. New Faces: Recognition: _____ /6; Name: _____ /3; Role: _____ /3; Day visits: _____ /3																			
Print Name: _____ Designation: _____ Signature: _____ Date: _____																			

Stimulus Card Example 5A

JIM	PAT	PAT
PAT	JIM	JIM
PAT	JIM	JIM
JIM	JIM	PAT
PAT	PAT	JIM
PAT	JIM	PAT
JIM	PAT	PAT
PAT	PAT	PAT
JIM	JIM	PAT
JIM	PAT	JIM
JIM	JIM	JIM
PAT	JIM	PAT
JIM	PAT	JIM
PAT	PAT	PAT
PAT	JIM	JIM
PAT	PAT	JIM
JIM	JIM	PAT

Hospital Anxiety and Distress Scale

Hospital Anxiety and Depression Scale (HADS)

Tick the box beside the reply that is closest to how you have been feeling in the past week.
Don't take too long over you replies: your immediate is best.

D	A		D	A	
		I feel tense or 'wound up':			I feel as if I am slowed down:
3		Most of the time	3		Nearly all the time
2		A lot of the time	2		Very often
1		From time to time, occasionally	1		Sometimes
0		Not at all	0		Not at all
		I still enjoy the things I used to enjoy:			I get a sort of frightened feeling like 'butterflies' in the stomach:
0		Definitely as much	0		Not at all
1		Not quite so much	1		Occasionally
2		Only a little	2		Quite Often
3		Hardly at all	3		Very Often
		I get a sort of frightened feeling as if something awful is about to happen:			I have lost interest in my appearance:
3		Very definitely and quite badly	3		Definitely
2		Yes, but not too badly	2		I don't take as much care as I should
1		A little, but it doesn't worry me	1		I may not take quite as much care
0		Not at all	0		I take just as much care as ever
		I can laugh and see the funny side of things:			I feel restless as I have to be on the move:
0		As much as I always could	3		Very much indeed
1		Not quite so much now	2		Quite a lot
2		Definitely not so much now	1		Not very much
3		Not at all	0		Not at all
		Worrying thoughts go through my mind:			I look forward with enjoyment to things:
3		A great deal of the time	0		As much as I ever did
2		A lot of the time	1		Rather less than I used to
1		From time to time, but not too often	2		Definitely less than I used to
0		Only occasionally	3		Hardly at all
		I feel cheerful:			I get sudden feelings of panic:
3		Not at all	3		Very often indeed
2		Not often	2		Quite often
1		Sometimes	1		Not very often
0		Most of the time	0		Not at all
		I can sit at ease and feel relaxed:			I can enjoy a good book or radio or TV program:
0		Definitely	0		Often
1		Usually	1		Sometimes
2		Not Often	2		Not often
3		Not at all	3		Very seldom

Please check you have answered all the questions

Scoring:

Total score: Depression (D) _____ Anxiety (A) _____

0-7 = Normal

8-10 = Borderline abnormal (borderline case)

11-21 = Abnormal (case)

Modified Barthel Index (MBI)

<i>MODIFIED BARTHEL INDEX (SHAH VERSION) : SELF CARE ASSESSMENT</i>		
INDEX ITEM	SCORE	DESCRIPTION
<i>CHAIR/BED TRANSFERS</i>	0	Unable to participate in a transfer. Two attendants are required to transfer the patient with or without a mechanical device.
	3	Able to participate but maximum assistance of one other person is required in <u>all</u> aspects of the transfer.
	8	The transfer requires the assistance of one other person. Assistance may be required in <u>any</u> aspect of the transfer.
	12	The presence of another person is required either as a confidence measure, or to provide supervision for safety.
	15	The patient can safely approach the bed walking or in a wheelchair, lock brakes, lift footrests, or position walking aid, move safely to bed, lie down, come to a sitting position on the side of the bed, change the position of the wheelchair, transfer back into it safely and/or grasp aid and stand. The patient must be independent in all phases of this activity.
<i>AMBULATION</i>	0	Dependent in ambulation.
	3	Constant presence of one or more assistant is required during ambulation.
	8	Assistance is required with reaching aids and/or their manipulation. One person is required to offer assistance.
	12	The patient is independent in ambulation but unable to walk 50 metres without help, or supervision is needed for confidence or safety in hazardous situations.
	15	The patient must be able to wear braces if required, lock and unlock these braces assume standing position, sit down, and place the necessary aids into position for use. The patient must be able to crutches, canes, or a walkalette, and walk 50 metres without help or supervision.
<i>AMBULATION/WHEELCHAIR</i> * (If unable to walk) Only use this item if the patient is rated "0" for Ambulation, and then only if the patient has been trained in wheelchair management.	0	Dependent in wheelchair ambulation.
	1	Patient can propel self short distances on flat surface, but assistance is required for all other steps of wheelchair management.
	3	Presence of one person is necessary and constant assistance is required to manipulate chair to table, bed, etc.
	4	The patient can propel self for a reasonable duration over regularly encountered terrain. Minimal assistance may still be required in "tight corners" or to negotiate a kerb 100mm high.
	5	To propel wheelchair independently, the patient must be able to go around corners, turn around, manoeuvre the chair to a table, bed, toilet, etc. The patient must be able to push a chair at least 50 metres and negotiate a kerb.

INDEX ITEM	SCORE	DESCRIPTION
<i>STAIR CLIMBING</i>	0	The patient is unable to climb stairs.
	2	Assistance is required in all aspects of chair climbing, including assistance with walking aids.
	5	The patient is able to ascend/descend but is unable to carry walking aids and needs supervision and assistance.
	8	Generally no assistance is required. At times supervision is required for safety due to morning stiffness, shortness of breath, etc.
	10	The patient is able to go up and down a flight of stairs safely without help or supervision. The patient is able to use hand rails, cane or crutches when needed and is able to carry these devices as he/she ascends or descends.
<i>TOILET TRANSFERS</i>	0	Fully dependent in toileting.
	2	Assistance required in all aspects of toileting.
	5	Assistance may be required with management of clothing, transferring, or washing hands.
	8	Supervision may be required for safety with normal toilet. A commode may be used at night but assistance is required for emptying and cleaning.
	10	The patient is able to get on/off the toilet, fasten clothing and use toilet paper without help. If necessary, the patient may use a bed pan or commode or urinal at night, but must be able to empty it and clean it.
<i>BOWEL CONTROL</i>	0	The patient is bowel incontinent.
	2	The patient needs help to assume appropriate position, and with bowel movement facilitatory techniques.
	5	The patient can assume appropriate position, but cannot use facilitatory techniques or clean self without assistance and has frequent accidents. Assistance is required with incontinence aids such as pad, etc.
	8	The patient may require supervision with the use of suppository or enema and has occasional accidents.
	10	The patient can control bowels and has no accidents, can use suppository, or take an enema when necessary.
<i>BLADDER CONTROL</i>	0	The patient is dependent in bladder management, is incontinent, or has indwelling catheter.
	2	The patient is incontinent but is able to assist with the application of an internal or external device.
	5	The patient is generally dry by day, but not at night and needs some assistance with the devices.
	8	The patient is generally dry by day and night, but may have an occasional accident or need minimal assistance with internal or external devices.
	10	The patient is able to control bladder day and night, and/or is independent with internal or external devices.

INDEX ITEM	SCORE	DESCRIPTION
<i>BATHING</i>	0	Total dependence in bathing self.
	1	Assistance is required in all aspects of bathing, but patient is able to make some contribution.
	3	Assistance is required with either transfer to shower/bath or with washing or drying; including inability to complete a task because of condition or disease, etc.
	4	Supervision is required for safety in adjusting the water temperature, or in the transfer.
	5	The patient may use a bathtub, a shower, or take a complete sponge bath. The patient must be able to do all the steps of whichever method is employed without another person being present.
<i>DRESSING</i>	0	The patient is dependent in all aspects of dressing and is unable to participate in the activity.
	2	The patient is able to participate to some degree, but is dependent in all aspects of dressing.
	5	Assistance is needed in putting on, and/or removing any clothing.
	8	Only minimal assistance is required with fastening clothing such as buttons, zips, bra, shoes, etc.
	10	The patient is able to put on, remove, corset, braces, as prescribed.
<i>PERSONAL HYGIENE</i> (Grooming)	0	The patient is unable to attend to personal hygiene and is dependent in all aspects.
	1	Assistance is required in all steps of personal hygiene, but patient able to make some contribution.
	3	Some assistance is required in one or more steps of personal hygiene.
	4	Patient is able to conduct his/her own personal hygiene but requires minimal assistance before and/or after the operation.
	5	The patient can wash his/her hands and face, comb hair, clean teeth and shave. A male patient may use any kind of razor but must insert the blade, or plug in the razor without help, as well as retrieve it from the drawer or cabinet. A female patient must apply her own make-up, if used, but need not braid or style her hair.
<i>FEEDING</i>	0	Dependent in all aspects and needs to be fed, nasogastric needs to be administered.
	2	Can manipulate an eating device, usually a spoon, but someone must provide active assistance during the meal.
	5	Able to feed self with supervision. Assistance is required with associated tasks such as putting milk/sugar into tea, salt, pepper, spreading butter, turning a plate or other "set up" activities.
	8	Independence in feeding with prepared tray, except may need meat cut, milk carton opened or jar lid etc. The presence of another person is not required.
	10	The patient can feed self from a tray or table when someone puts the food within reach. The patient must put on an assistive device if needed, cut food, and if desired use salt and pepper, spread butter, etc.

SCORE	INTERPRETATION
00 - 20	Total Dependence
21 - 60	Severe Dependence
61 - 90	Moderate Dependence
91 - 99	Slight Dependence
- 100	Independence

SCORE	PREDICTION
Less Than 40	Unlikely to go home - Dependent in Mobility - Dependent in Self Care
60	Pivotal score where patients move from dependency to assisted independence.
60 - 80	If living alone will probably need a number of community services to cope.
More Than 85	Likely to be discharged to community living - Independent in transfers and able to walk or use wheelchair independently.

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Assessment of Living Skills and Resources (ALSAR-R2)

ALSAR-R2

Assessment of Living Skills and Resources

Name:
ID:
Address:

Date of Assessment:

ALSAR TASKS	SKILLS Individual task accomplishment is: 0 Independent & consistent 1 Partial performance 2 Not accomplished or no responsibility for doing	S SKILL level	TASK Risk Score See scale below	R RESO URCE level	RESOURCES Support for task completion extrinsic to individual is: 0 Consistently available 1 Inconsistently available, unstable or unreliable 2 <u>Insufficient or not used</u> *Only use when Skill = 2
Telephoning	Locates phone numbers, dials sends and receives information				Resources for telephoning
Reading	Reads and uses written information				Resources for reading
Leisure	Plans and performs satisfying leisure activities				Resources for satisfying leisure activities
Medication Management	Procures and takes medicine as ordered				Resources for managing medications
Money Management	Manages finances, pays bills, does banking				Resources for managing finances
Transportation	Walks, drives or uses public transport				Resources for transportation
Shopping	Lists, selects, buys, gets, stores goods				Resources for shopping
Meal Preparation	Performs all aspects of meal preparation (planning, storage, cook & serve)				Resources for meal preparation
Laundering	Performs all aspects of doing laundering (carry, wash, dry & put away)				Resources for laundering
Housekeeping	Keeping dishes washed, cleaning own living space, sweeping paths				Resources for housekeeping
Home Maintenance	Clearing walks, mowing lawns, changing light globes, performs minor home repairs and maintenance				Resources for home maintenance

Task Risk Score Scale (high scores at highest risk):

"Skill-Resource" "0-0" = 0; "0-1" = 0; "1-0" = 1; "1-1" = 1; "2-0" = 2; "2-1" = 3; "2-2" = 4

2008 ALSAR-Revised 2 Clemson, L., Bundy A., Unsworth, C. & Fiatarone Singh, M. Adapted with permission from 1991 ALSAR-Revised Format, TJK Drinka; JH Williams; M Schram; J Farrell-Holtan; R Euhardy: VAMC, Madison

Recommended scoring of Risk (ALSAR-R2)

SKILL Individual task accomplishment is:	RISK SKILL RESOURCES INCREMENTAL SCORE	RESOURCES Support for task completion extrinsic to individual is:
'0' Task accomplished independently & consistently	'00' = 0 '01' = 0	'0' Resources adequate to consistently accomplish the task '1' Resources only <i>partially support</i> task accomplishment. Maybe inconsistently available, unstable or unreliable.
'1' Partial task accomplishment	'10' = 1 '11' = 1	'0' Resources adequate to consistently accomplish the task '1' Resources only <i>partially support</i> task accomplishment. Maybe inconsistently available, unstable or unreliable.
'2' Task not accomplished or no responsibility for doing	'20' = 2 '21' = 3 '22' = 4	'0' Resources adequate to consistently accomplish the task '1' Resources only <i>partially support</i> task accomplishment. Maybe inconsistently available, unstable or unreliable. '2' Resources are <u>insufficient for task accomplishment</u> or available resources are not being used ¹

¹Resources '2' Insufficient or not used category is not available for rating if Skill accomplished ('0') or if Skill partially accomplished ('1')

ALSAR-R2 Prompts to guide the interview and scoring of Skills and Resources

Suggested Skills QuestionsSuggested Resources Questions

<u>Telephoning (Using the phone to send and receive information)</u>	
- How often do you use the phone? - Do you make calls or only use the phone if someone calls you? - Can you hear the phone ringing? - Can you hear what is being said? - Can you get to the phone if it is ringing and use it? - What number would you dial for an emergency?	- Is the phone where it is needed, is it audible and in an accessible place? - How many phones do you have? (location) - Any special devices on your phone? Amplified handset? Large scale numbers on dial? - Are emergency phone numbers listed by each phone?
<u>Reading (Using written information)</u>	
- Do you have any difficulty reading? - What do you usually read? - Can you read newspaper size print, mail, medicine bottles? - Can you read dials on the TV, thermostats, appliances?	- Do you wear glasses? When was last eye test? - Do you have any low vision aids? Magnifier? Large print materials? Talking books? - Does someone read things for you?
<u>Leisure (Using time not spent for work, sleep or self care)</u>	
- What do you do in your spare time (for fun)? - Are you able to do your favorite leisure activity/s? - Do you have any hobbies / pastimes? - Are you active in any clubs or organizations? - Are there any activities that you have given up recently?	- Is there a senior centre near you? - How do you keep in touch with friends & family? - How often do you see them? Talk to them? - Are there any activities you would like to begin? - Does someone go with you or take you to leisure activities?
<u>Medication Management (Taking medicine as ordered, renewing prescriptions)</u>	
- Do you take any medications? How many? How often? - What are they for? - How often do you forget to take your medications? - How do you renew your prescriptions?	- Does anyone help you take your medicine or re-order medicine? - Do you have a system for taking medications? - Do you have insurance to cover medications? - Any medications you don't take because you can't pay for them?
<u>Money Management (Managing finances, paying bills, banking)</u>	
- How do you manage your finances? Pay the bills? - How do you do the banking, get cash? - Do you use a checking account? - Can you live within your income? - How do you do your taxes?	- Does anyone help you with finances? Does someone else make financial decisions for you? - Who makes sure the bills are paid? - Do you bank in person or by mail? - Do you have power of attorney?
<u>Transportation (Walking, driving and using public transit)</u>	
- Do you drive? At night? Do you drive out of town or only in town? - Are there restrictions on your license? - Do you use public transportation? - Do you arrange for your own transportation?	- How do you get around? - Do you have a person drive you? - Are your methods of transportation reliable?
<u>Shopping (Listing, selecting, carrying and storing items)</u>	
- Do you do your own shopping? - Do you carry your purchases? - How often do you go shopping? - Do you ever shop by mail or phone?	- Does someone shop for you? - Is that person available when you need them? - Are there stores located near you? - Do you use anything to carry your purchases?
<u>Meal Preparation (Food planning, storage, cooking & serving)</u>	
- Do you cook your meals? - Do you prepare your own snacks, breakfast or lunch? - What do you do when your regular system for meals is not available?	- Are there restaurants or meals sites that you use? - Does someone cook for you? - Are your kitchen appliances adequate?
<u>Laundry (Carrying, washing, drying & putting away clothing)</u>	
- Do you do your laundry? - Do you do sorting? Carrying? Folding? Putting away? Hang on line/ place in dryer? - How often is laundry done? Do you arrange for laundry service?	- Does someone do the laundry? - Where is the washer / dryer / clothes line located? - What do you use to carry the laundry? - Are the laundry facilities adequate?
<u>Housekeeping (Keeping dishes washed, pathways clear, rooms clean)</u>	
- Do you do the housekeeping? - Do you do light work such as dishwashing, dusting, vacuuming? - How often do you do the housekeeping? - Do you arrange for housekeeping services?	- Does someone do your housekeeping? How often? - Are these services adequate? - Could you afford housekeeping services?
<u>Home maintenance (Controlling temperature, clearing walks & mowing lawns)</u>	
- What type of house do you live in? - How do you do the outdoor work? Lawn? Paths? Windows? - How do you do major (e.g. Fix leaking tap) or minor (e.g. Change light bulb) repairs? - Do you have adequate heating in winter and cooling in summer?	- Does someone maintain your home for you? - What equipment do you have for home upkeep (e.g. Tools, ladder, lawn mower)? - Are maintenance supports readily available and reliable?

ALSAR-R2 Definitions

The Assessment of Living Skills and Resources, ALSAR, is an instrument developed to help health professionals assess instrumental activities of daily living. It focuses on accomplishment of tasks rather than potential capabilities. It is completed as an interview, supplemented with observation of skills whenever possible. Use the following definitions to score the Skill and Resource levels.

Rate the skill for a given task first, and then rate the Resource for the task. Use the Guidelines for a list of suggested prompts/questions. Limited space is provided to make brief comments explaining the reasons. This should be done to assist with action planning and prioritizing

Skill

SKILL is defined as **accomplishment of the task by the person.**

Rated on a scale of 0-2 according to *the level of accomplishment*:

- 0 Independent and *consistent* performance (e.g. prepares all meals or eats out regularly- able to do consistently and independently)
- 1 Partial performance (e.g. prepares some meals but does not take responsibility for all of them).
- 2 Task not accomplished or no responsibility for task (e.g. spouse does this).

If the person claims to be accomplishing a task but appearances suggest otherwise, a rating of 2 (or 1) is assigned to reflect the incongruity and the need for further evaluation.

The reasons the person may be dependent can vary, for instance, motivational, cognitive, physical, cultural, or personal reasons.

See additional explanations and examples for defining skill on the following page.

Resource

RESOURCE is defined as **support for task accomplishment extrinsic to the person.**

Resources are rated after the skill level. Resources may be human or technical, formal or informal. They may include but are not limited to persons, equipment, services, and agencies. Examples of resources for meal preparation are a spouse, caregiver, a microwave oven, restaurants, and home-delivered meals.

Rated on a scale of 0-2 according to *the level of availability and consistency of use*.

- 0 Resources are *adequate* to consistently accomplish the task (e.g. a full-time caregiver provides all meals)
- 1 Resources only *partially support* task accomplishment. A needed resource appears to be unstable, inconsistent, or unreliable or the caregiver providing the resource is evidencing strain (e.g. if the meals are only provided 5 days per week).
- 2 Resources are *insufficient* for task accomplishment or available resources are not being used (e.g., delivered meals are not available and person declines meals on wheels or other help).

A rating of 2 (or 1) is given if a safety factor or loss of the resource is imminent (e.g. home delivered meals are ending, the caregiver is going into hospital).

Additional explanations and examples

The following are some examples to assist in defining some **SKILL** situations:

- If the partner or spouse takes full responsibility and prepares all meals, does the laundry, housekeeping or home maintenance then they are given a 2 rating. If a person prepares breakfasts and snacks but gets Meals On Wheels as a resource, then their skill level is 1.
- Shopping. If the person never did the shopping now or in the past, then rate as 2.
- If the task has not yet “been accomplished” since returning home from hospital then give a 2 reflecting need for further evaluation at a later stage.
- Deciding what tasks are necessary for full independent accomplishment can sometimes vary depending upon what is culturally “normal practice.” For example, Laundry- drying tasks may or may not include using the clothes line. For instance, if the person is in a unit with a dryer and no clothes lines are available, then it is normal practice for these tenants to use the dryer -- then using a clothes line would not be considered necessary for full independence. Please do not confuse “normal practice” with an adaptation that a person has made over time. If they stopped using the clothes line because it was becoming difficult then this is an adaptation and not considered “usual practice” and is rated 1 for partial performance.
- Medication management: this includes being able to renew their medications. Do not include transport issues here if this has already been included in the transportation category.
- Money management: managing finances, paying bills and handling banking should all be included as skills. Again do not include support for transportation to the bank (e.g. daughter drives her to bank) as this is included in the transportation category. Banking via phone, internet, cheque and use of a card for cash would be rated 0 if all money management is done this way independently and there is no need to go to the bank. This is now an acceptable “normal practice.” If the person has some restriction or limitation in using the ATM then rate 1 or 2 accordingly. If the person chooses to go to the teller because that is their preference (and is still normal practice for many people) then rate 1 or 2 if they are unable to do this.

The following may assist in defining **RESOURCES**

- Caregiver capability and reserves are both important in rating the resource level. If the caregiver provides resources for a task but is evidencing strain (e.g. resents responsibility for meal preparation) to the extent that you believe that the strain has an impact on the consistency of the support, the resource should be rated as 1

Appendix B

Ethics Approval



14 July 2017

Dr Michelle Kelly
Senior Lecturer in Clinical Psychology
School of Psychology
University of Newcastle

Dear Dr Kelly

Re: Development of a Social Cognition Assessment Battery for Older Adults (14/05/21/4.02)

HNEHREC Reference No: 14/05/21/4.02
NSW HREC Reference No: HREC/14/HNE/166
NSW SSA Reference No: SSA/14/HNE/167

Thank you for submitting a request for an amendment to the above project. This amendment was reviewed by the Hunter New England Human Research Ethics Committee. This Human Research Ethics Committee is constituted and operates in accordance with the National Health and Medical Research Council's *National Statement on Ethical Conduct in Human Research (2007)* (National Statement) and the *CPMP/ICH Note for Guidance on Good Clinical Practice*. Further, this Committee has been accredited by the NSW Department of Health as a lead HREC under the model for single ethical and scientific review.

I am pleased to advise that the Hunter New England Human Research Ethics Committee has determined the variation meets the requirements of the National Statement on Ethical Conduct in Human Research and has granted ethical approval for the following amendment requests:

Document	Version	Date
Master Participant Information Sheet and Consent Form	5	30 May 2017
Master Guardian Information and Consent Form	5	30 May 2017
Master Control Participant Information and Consent Form	5	30 May 2017
Telehealth BASS Acceptability Questionnaire	-	undated
Modified Barthel Index (Shah Version): Self Care Assessment	-	undated
ALSAR-R2 Assessment of Living Skills and Resources	-	undated

- To include the use of telehealth technologies for assessing participants in their home/community centre to determine the viability of the screening tool for use via telehealth;
- For the addition of questionnaires:
 - o activities of daily living (ADLs)
 - o Telehealth BASS Acceptability questionnaire, and
 - o modified Barthel Index (SHAH version): Self Care Assessment

Hunter New England Research Ethics & Governance Office

Locked Bag No 1

New Lambton NSW 2305

Telephone: (02) 49214950

Email: HNELHD-HREC@hnehealth.nsw.gov.au

<http://www.hnehealth.nsw.gov.au/ethics/Pages/Research-Ethics-and-Governance-Unit.aspx>

Approval has been granted for this study to take place at the following sites:

- Central Coast Local Health District
- Hunter New England Mental Health
- John Hunter Hospital
- Rankin Park Centre

The *National Statement on Ethical Conduct in Human Research (2007)*, which the Committee is obliged to adhere to, include the requirement that the committee monitors the research protocols it has approved. Ethics Approval will be ongoing subject to the following conditions:

- A report on the progress of the above protocol is to be submitted at 12 monthly intervals. A proforma for the annual report will be sent at the beginning of the month of the anniversary of approval. Your review date is May 2017.
- All variations or amendments to this protocol must be forwarded to and approved by the Hunter New England Human Research Ethics Committee prior to their implementation.
- A final report must be submitted at the completion of the above protocol, that is, after data analysis has been completed and a final report compiled.
- The Principal Investigator will immediately report anything which might warrant review of ethical approval of the project in the specified format, including:
 - Notify the reviewing HREC of any adverse events that have a material impact on the conduct of the research in accordance with the NHMRC Position Statement: *Monitoring and reporting of safety for clinical trials involving therapeutic products May 2009*
https://www.nhmrc.gov.au/files/nhmrc/publications/attachments/e112_nhmrc_position_statement_monitoring_reporting_safety_clinical_trials.pdf
 - Unforeseen events that might affect continued ethical acceptability of the project.
- If for some reason the above protocol does not commence (for example it does not receive funding); is suspended or discontinued, please inform Dr Nicole Gerrand as soon as possible.

The Hunter New England Human Research Ethics Committee also has delegated authority to approve the commencement of this research on behalf of the Hunter New England Local Health District. This research may therefore commence.

Should you have any queries about your project please contact Dr Nicole Gerrand as per the contact details at the bottom of the page. The Hunter New England Human Research Ethics Committee Terms of Reference, Standard Operating Procedures, membership and standard forms are available from the Hunter New England Local Health District website.

Please quote 14/05/21/4.02 in all correspondence.

The Hunter New England Human Research Ethics Committee wishes you every success in your research.

Yours faithfully

For: Ms M Hunter
Chair
Hunter New England Human Research Ethics Committee

Hunter New England Research Ethics & Governance Office

Locked Bag No 1

New Lambton NSW 2305

Telephone: (02) 49214950

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<http://www.hnehealth.nsw.gov.au/ethics/Pages/Research-Ethics-and-Governance-Unit.aspx>

RESEARCH INTEGRITY UNIT



Registration of External HREC Approval

To Chief Investigator or Project Supervisor:	Doctor Michelle Kelly
Cc Co-investigators / Research Students:	Prof Skye McDonald Mrs Karen Bell-Weinberg Miss Kristen Kerlake Ms Kimberley Wallis Ms Katryna Harman Ms Tracy Brown Mr Luke Brock Miss Bianca Belevski Mr Simon Mierendorff
Re Protocol:	Development of a social cognition assessment battery for older adults
Date:	10-Aug-2017
Reference No:	H-2015-0255
External HREC Reference No:	14/05/21/4.02

Thank you for your Variation submission to the Research Integrity Unit (RIU) seeking to register an External HREC Approval in relation to the above protocol.

1. We currently assess participants face-to-face ONLY. We would like to include the use of telehealth technologies for assessing participants in their own home/community centre to determine the viability of the screening tool for use via telehealth. Participants will be tested twice, once face-to-face and once via telehealth. Each test will occur four weeks apart. We will request consent to video record the telehealth session. 2. We would like to add the following tests/questionnaires: o A questionnaire measure of activities of daily living (ADLs). The types of items include the level of function and independence in eating, bathing, using the telephone, completing basic errands, and managing money. It will take approximately 15 minutes to complete. The Assessment of Living Skills and Resources-r2 and the Modified Barthel Index will be used (attached). o A questionnaire about the acceptability of telehealth technologies for this purpose. This will occur during TELEHEALTH only. 3. We would like to increase the numbers of community participants to accommodate this arm of the study. We would like to recruit an additional 75 participants (targeting healthy control participants).

Your submission was considered under an Administrative Review by the Ethics Administrator.

I am pleased to advise that the decision on your submission is External HREC Approval Noted effective 10-Aug-2017.

As the approval of an External HREC has been noted, this registration is valid for the approval period determined by that HREC.

Your reference number is H-2015-0255.

PLEASE NOTE:

As the RIU has "noted" the approval of an External HREC, progress reports and reports of adverse events are to be submitted to the External HREC only. In the case of Variations to the approved protocol, or a Renewal of approval, you will apply to the External HREC for approval in the first instance and then Register that approval with the University's RIU, via

RIMS.

Linkage of ethics approval to a new Grant

Registered External HREC approvals cannot be assigned to a new grant or award (ie those that were not identified in the initial registration submission) without confirmation from the RIU.

Best wishes for a successful project.

Mr Alan Hales
Manager, Research Compliance, Integrity and Policy

For communications and enquiries:
Human Research Ethics Administration

Research & Innovation Services
Research Integrity Unit
The University of Newcastle
Callaghan NSW 2308
T +61 2 492 17894
Human-Ethics@newcastle.edu.au

RIMS website - <https://RIMS.newcastle.edu.au/login.asp>

Linked University of Newcastle administered funding:

Funding body	Funding project title	First named investigator	Grant Ref
Hunter Medical Research Institute/Project Grant(**)	Are problems with social skills related to poor quality of life for people with a diagnosis of dementia?	Kelly, Michelle	G1501431
Alzheimers Australia Dementia Research Foundation Limited/Cecilia Margaret Hudson Dementia Research Grant(**)	Does social competence impact quality of life for people with a diagnosis of dementia?	Kelly, Michelle	G1600369

Appendix C

Participant Comments on Telehealth Acceptability Questionnaire

- Online makes it more objective because it takes away distractions from personal interactions.
- I am a reasonably frequent PC user so found this process to be easy and good.
- You need to have some familiarity with computers for this to work. If you are not computer literate you would probably need an assistant in the room with you. Otherwise results could be affected by a person feeling out of their comfort zone.
- I enjoyed the experience.
- Happy to do it but prefer face to face.
- I wasn't sure how it was all going to work over the computer, but it seemed pretty good.
- Person to person is an individual choice. Some people might prefer online. Don't ask me to set up Skype though!
- All good.
- It was good, I enjoyed it.
- I know a bit about using Skype, but not for things like this.
- Would be a 10 if I lived in a remote area.
- I prefer face-to-face.
- Very impressed using Skype.
- It's ok, but I can see why face-to-face is better.
- I've never seen Skype used this way, but it was good. I was still able to connect with the person well.
- It was very different doing it over the internet. I'm not familiar with Skype.
- I prefer working face-to-face with people.
- I thought it was very good.
- I was a bit unsure using the program, but you made it easy.

Appendix D

Selected Journal, Scope, and Instructions for Authors

Journal Name. Research on Aging

Journal Scope. Research on Aging is an interdisciplinary journal designed to reflect the expanding role of research in the field of social gerontology. Research on Aging exists to provide for publication of research in the broad range of disciplines concerned with aging. Scholars from the disciplines of sociology, gerontology, history, psychology, anthropology, public health, economics, political science, criminology, social work, nursing, demography, epidemiology, and geography are encouraged to contribute articles to the journal. Emphasis will be on materials of broad scope and cross-disciplinary interest. Assessment of the current state of knowledge is as important as provision of an outlet for new knowledge, so critical and review articles are welcomed. Systematic attention to particular topics will also be featured.

Instructions for Authors. Manuscripts should be prepared in accordance with the most recent APA Reference Style, using a word-processor (save as .doc, .docx, or .rtf). Do not send PDF files. Times New Roman (12 pt) is the preferred text font. All manuscripts should be double-spaced with at least 1" margins on all sides. Please number all pages beginning with the abstract, including the reference pages, tables and figures. In order that manuscripts may be sent anonymously, authors are requested to place no form of identification either upon the body of the manuscript, upon the required abstract or in the file names. Submission of a manuscript implies commitment to publish in *Research on Aging*. Authors submitting a manuscript to the journal should not simultaneously submit the same manuscript to another journal, nor should manuscripts have been published elsewhere in substantially similar form

or with substantially similar content. Content should be uploaded and placed in the following order.

- Title Page: The title page should be a separate document and include:
- All authors' names, affiliations, e-mail addresses, and highest professional degrees, and the corresponding author's address and telephone number.
- Any acknowledgements should appear at the bottom of the title page. Funding acknowledgements should include the full name of the funding agency followed by the grant number.
- A brief (50 word maximum) biographical statement for all authors at the bottom of the title page.

Original Research

First submissions of manuscripts should not contain more than 6,000 words of text (not including abstract, references and exhibits). Shorter length manuscripts are appreciated. Also, these manuscripts should not contain more than 10 pages of references, tables and figures combined. The following organization applies to all research article submissions:

Abstract: Authors should include an abstract of no more than 150 words in paragraph form without citations as the first page of the manuscript. This abstract should be factual and present the objective of the study, methods, main findings, and the principal conclusions. The abstract should be followed by 4 to 6 key words for indexing.

Introduction: Rationale for the study and statement of purpose.

Literature Review: Literature review with sub-headings, as necessary, and conceptual framework (where appropriate).

Research Design: Specify design features including sampling strategy, data collection, measurement, and analytic strategy. Additionally, please note the approval of human subjects research by all Institutional Review Boards, where appropriate. If reporting qualitative methodology, please review the COREQ guidelines for reporting qualitative research: <http://www.equator-network.org/resource-centre/library-of-health-research-reporting/reporting-guidelines/qualitative-research/>

Results: Describe the sample attributes and present the results for each research question or hypotheses. When statistical tests are performed, provide test statistics and p values.

Discussion: Interpret the findings in the context of other research, conceptual frameworks, theory, and study design. Address the study limitations.

Conclusion: State the bottom line and what the results mean for policy, practice with seniors, or future research.

Tables and Figures: Tables and figures generally convey information not presented in the text. Word processing programs should be used to produce tables without vertical lines, following the most recent edition of the APA Style Manual. Tables should be placed at the end of the article, following the references. Each figure should be submitted as a separate file. Preferred placement of tables and figures should be noted in the text. Example:

[Insert Table 1 about here]

Appendix E

Participant Information Statement

**DEVELOPMENT OF A SOCIAL COGNITION ASSESSMENT BATTERY****INFORMATION FOR CONTROL PARTICIPANTS****For people without a diagnosis of dementia****Introduction**

You are invited to take part in a research study that aims to develop a test that will allow people with a diagnosis of dementia to be assessed for problems with social skills. In particular, we want to put together some tasks that investigate their ability to recognise emotions in others, understand how others may be feeling, and understand what others may be thinking.

The study is being conducted within Hunter New England Health together with the University of New South Wales and the University of Newcastle by Dr Michelle Kelly (Ph: 49216838) and Professor Skye McDonald (Ph: 9385 3029).

Why were you invited to enter the study?

In order to better understand the sorts of social difficulties experienced by people with a diagnosis of dementia, we need to include individuals who have a diagnosis of dementia in our research, and include people who do not have a diagnosis of dementia in order to compare performance. You are being invited to participate in this study because you have NOT been diagnosed with dementia.

Study Procedures

If you agree to participate in this study, you will be asked to sign the Consent Form. This study is conducted over approximately 1-2 hours. Most sessions will take place at the McAuley Centre, The University of Newcastle, HMRI, Alzheimer's Australia Hamilton, at your home, or via telehealth, and will be recorded via film. The overall assessment involves simple tasks such as looking at photos, cartoons and videos of people engaged in everyday tasks and answering questions about them.

We will also ask you some brief questions about your education and occupational history, as well as family history of dementia.

Risks

As part of this study we will conduct a short screening test of dementia. If the results are of concern, we will make you aware of this by phone, and with your consent, send a letter to your GP outlining our concerns. Your GP may then suggest further, more comprehensive and reliable assessment.

Benefits

We cannot suggest that completing these tasks will result in direct benefits. In the longer term we expect that the knowledge we gain from this study will enable clinicians to treat emotion

perception difficulties in those diagnosed with dementia, and use the knowledge gained from assessing this aspect of functioning in improving quality of life for people with dementia and their families.

Costs

Participation in this study will not cost you anything.

Voluntary Participation

Participation in this study is entirely voluntary. You do not have to take part in it. If you do take part, you may withdraw at any time without having to give a reason. Simply let the researcher know that you wish to stop. Whatever your decision, please be assured that it will not affect any medical treatment you are currently receiving, or may receive in the future from NSW Health. If you withdraw from the study, all the information you have provided will be destroyed.

Confidentiality

All the information collected from you as part of this study will be treated confidentially, and only the researchers named above will have access to it. The study results may be presented at a conference or in a scientific publication, but individual participants will not be identifiable in such a presentation.

Further Information

When you have read this information, Dr Michelle Kelly will discuss it with you further and answer any questions you may have. If you would like to know more at any stage, please feel free to contact her on (02) 49216838.

Taking part in future research

If you would like, you can agree that your data can be used as part of future research projects. This is entirely voluntary. Deciding that you do not want your data to be used in future research will not affect your participation in the current study.

You can also agree to be contacted about future research. Agreeing to be contacted does not obligate you to take part; participation in any future research is entirely voluntary.

Complaints about this Research

This research has been approved by the Hunter New England Human Research Ethics Committee of Hunter New England Local Health District, Reference 14/05/21/4.02. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to Dr Nicole Gerrand, Manager Research Ethics and Governance, Hunter New England Local Health District, Locked Bag 1, New Lambton NSW 2305, telephone (02) 49214950, email Hnehrec@hnehealth.nsw.gov.au.

Further information

If you require further information on this research, please contact Michelle Kelly (49216838; michelle.kelly@newcastle.edu.au).



Health
Hunter New England
Local Health District

DEVELOPMENT OF A SOCIAL COGNITION ASSESSMENT BATTERY

CONSENT FORM

For participants without a diagnosis of dementia

I, [name]

of [address]

have read and understood the Information for Participants on the above named research study and have discussed the study with

I have been made aware of the procedures involved in the study, including any known or expected inconvenience, risk, discomfort or potential side effect and of their implications as far as they are currently known by the researchers.

I freely choose to participate in this study and understand that I can withdraw at any time.

I also understand that the research study is strictly confidential.

I do / do not give consent for research collected as part of this project to be used in future research (delete as applicable).

I do / do not give consent to be contacted about future research (delete as applicable).

I hereby agree to participate in this research study.

NAME:

SIGNATURE:

DATE:

NAME OF WITNESS:

SIGNATURE OF WITNESS:

Appendix F

Study Advertisement



Health
Hunter New England
Local Health District

Development of a Social Skills Screening Test for Dementia

You are invited to take part in a research study that looks at problems in social skills. We want to put together some tests that assess your understanding of how others may be feeling, and what others may be thinking. We are inviting people both with and without a diagnosis of dementia to take part in this study.



The study is being conducted within Hunter New England Health together with the University of New South Wales and University of Newcastle by Dr Michelle Kelly (Ph: 49216838) and Professor Skye McDonald (Ph: 9385 3029). The study is supported by Alzheimer's Australia.

If you require further information on this research, please contact Dr Michelle Kelly (49216838; michelle.kelly@newcastle.edu.au).