

REPORT OF RESEARCH RESULTS

Title: Singapore Activities of Daily Living Inventory (S-ADL-I)

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Summary:

Aim of Research:

This study aims to develop an inventory that is more culturally relevant for evaluating functional status among the multi-ethnic elderly Asian population; the hypothesis is that this inventory will be more sensitive to identifying loss of functional ability among the Singapore elderly when compared to similar inventories being used in the current clinical setting.

1. To create an inventory of activities of daily living (ADLs) that is more culturally relevant for evaluating functional status among a multi-ethnic elderly Asian population in Singapore
2. To validate this questionnaire with similar questionnaires utilized in the clinical setting in Singapore. This questionnaire will be more sensitive to identifying loss of functional ability among the Singapore elderly when compared to similar questionnaires that were designed primarily for use in non-Asian populations.
3. To explore the caregiving practices towards elderly Singaporeans with and without cognitive impairment.

Method of Research & Progression:

This is a cross-sectional mixed methods study. 90 caregivers were interviewed for the study.

Investigators approached caregivers of elderly Singaporeans with or without cognitive impairments during their outpatient medical appointments, to participate in this research study. Upon informed consent, a trained research assistant interviewed the caregiver regarding the functional abilities of the elderly care recipient as well as their caregiving practices in assisting the elderly with daily tasks.

The interview lasted approximately 30 minutes and consisted of the following questionnaires:

1. Alzheimer's Disease Cooperative Study - Activities of Daily Living Scale (Galasko, et al., 1997)
2. Lawton-Brody Instrumental Activities of Daily Living Scale (Lawton & Brody, 1969)
3. Singapore Activities of Daily Living Inventory (Study Scale)

Singapore Activities of Daily Living Inventory (S-ADL-I) is an open-ended questionnaire developed specifically for the purpose of this study, and was administered as a semi-structured interview. It contains a set of five questions for each of the 15 (19 including parts a. and b.) ADL and IADL sections. Participants were asked to provide a dichotomous response of "Yes" or "No" to the various questions, asked in a staged-like fashion (Refer to Figure 1).

Qualitative analysis was performed using NVIVO Pro v.11. Quantitative data was analysed using the SPSS v.23.

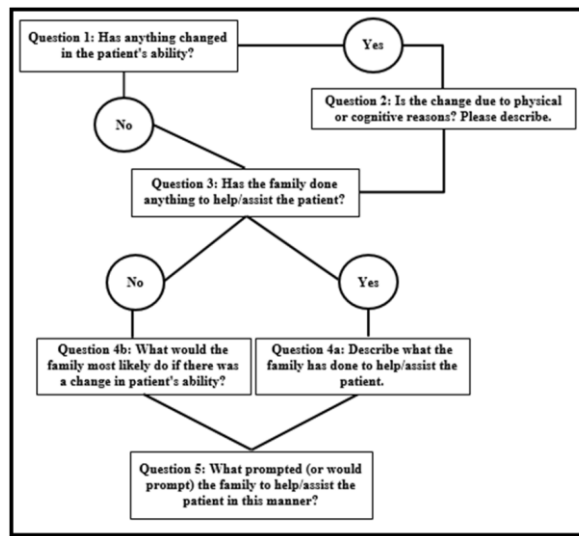


Figure 1. S-ADL-I Flowchart.

Preliminary Results:

1. Responses on ADCS-ADLs and Lawton's were compared with the responses on S-ADL-I.
 - 1.1 Responses for respective functional abilities on S-ADL-I did not map on to the similar items asked on the ADCS-ADL questionnaire; this demonstrates the cultural limitations that is not captured from responses on the ADCS-ADLs. For example, on the ADCS-ADLs an individual would score poorly for the first item on Eating Behaviours if he or she primarily eats using hands (without utensils). However, the S-ADL-I would capture this as no significant change in functional ability as the patient has always performed this task in this manner; In a multi ethnic Asian population Indians and Malays customarily eat with their hands (without utensils).
 - 1.2 Responses on the S-ADL-I reflected similar gender specificities as with the Lawton's. For example on the Lawton's men are exempted from items related to housekeeping and food preparation (averaging at a lower acceptable score versus females); this specification of functional ability was also captured by the S-ADL-I responses on the items of daily living.

This demonstrates the cultural specificity of data collected using the S-ADL-I.

2. MMSE Scores of care recipients of the participants were compared with change in functional ability and provision of caregiving per item of daily active living. There was a pattern noted on several items on the S-ADL-I questionnaire between a change or no change in functional ability and provision of assistance from their respective caregivers. This pattern was not noted on similar items in the ADCS ADLs. This pattern showed *lower MMSE scores* for care recipients *who were assisted* on a daily activity task although *no change* in ability to do that task was reported, when compared with the care recipients who did not receive any assistance regardless of change in functional ability (Figure 2).

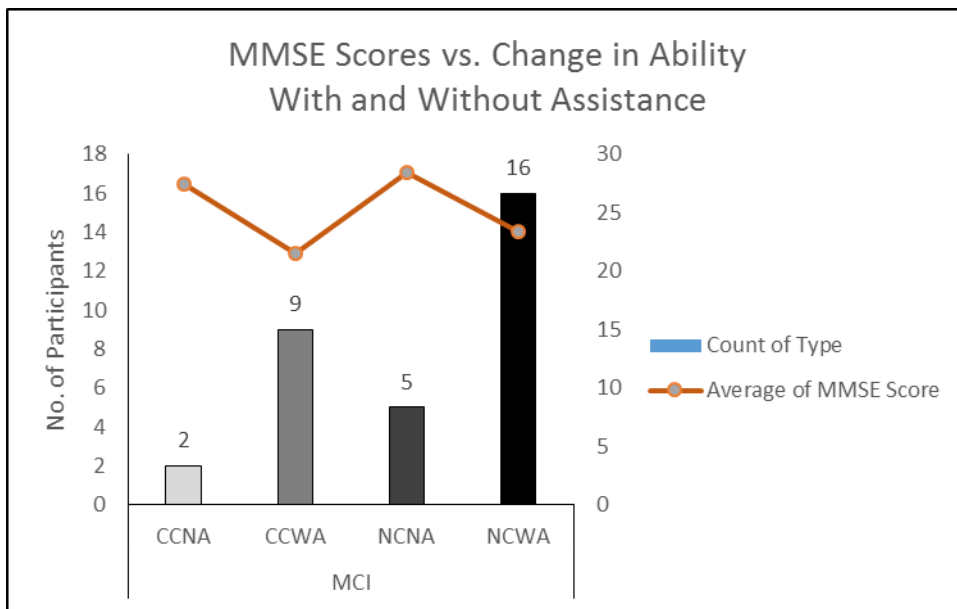


Figure 2. Illustrates the example of a pattern between the average MMSE Scores with presence of change in functional ability and assistance provided by caregivers of patients with mild cognitive impairments (MCI) on an item from S-ADL-I; i.e. Managing Finances. *Note.* Cognitive Change No Assistance (CCNA), Cognitive Change With Assistance (CCWA), No Change No Assistance (NCNA), Cognitive Change With Assistance (NCWA).

3. A qualitative analysis was performed on participants' responses regarding caregiving practices, using NVivo (Pro 11). Themes associated with the nature of how caregivers assisted their care recipients and the reasons for caregiving practices are illustrated in the diagram below (Figure 3).

Solid boxes, including change in ability, psychological changes observed by both care recipients as well as their caregivers, status quo and numerous reasons for choosing convenience to assist are indicated as the reasons caregivers gave for providing assistance to their elderly care recipients. The clear boxes elaborate on the reasons why caregivers assisted in this manner. For example, psychological changes were classified as a reason for assistance because the caregivers expressed stress or fear for their loved ones safety that prompted them to assist although no significant physical or cognitive change was observed. Finally, the shaded boxes describe the type of assistance provided by the caregivers. For instance, where they saw a change in ability of the patient, they would assistance by either teaching them how to perform the task (30%), encourage the patient to try to learn (20%) or supervise (50%) the task at hand if the patient was more or less independent of performing the task on her/ his own.

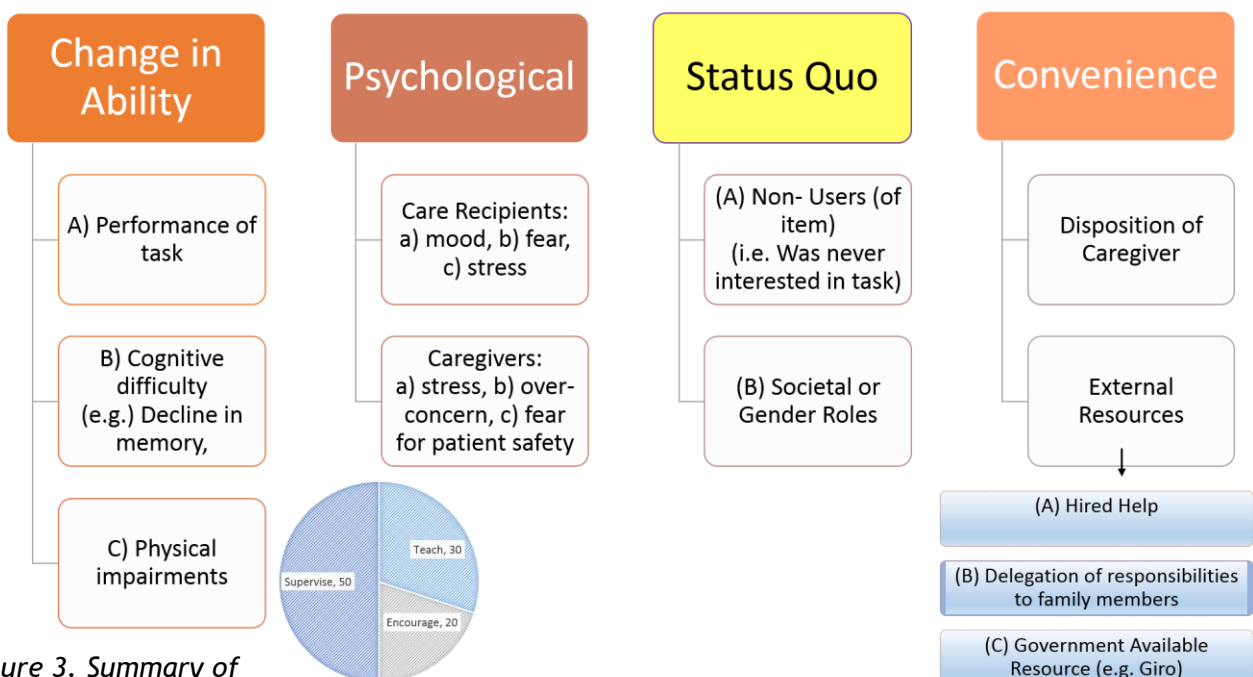


Figure 3. Summary of Qualitative Findings.

Future Areas to Take Note of, and Going Forward:

This is the first measure of functional activity and caregiver assistance designed and evaluated for use in a multi-ethnic elderly Asian population. This is also the first mixed-methods study in Singapore to evaluate the different types and reasons behind the assistance provided by caregivers.

Going forward, the S-ADL-I will be utilised as a tool to predict the relationship between caregiving practices and functional ability and cognitive decline among the elderly population in Singapore, and the relationship between caregiving practices and caregiver burden. Subsequently, this information will be used to help identify areas and types of intervention that may benefit caregivers and their elderly care recipients.

Means of Official Announcement of Research Results

Preliminary drafts have been prepared for submission to the following peer review journals; (i) Journal of Gerontology, (ii) Journal of Geriatric Psychiatry and Neurology, with reference and acknowledgement to the MSWIF Grant.