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RESEARCH PAPER

Occupational performance issues in older adults with subjective cognitive decline

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ABSTRACT

Purpose: To describe and categorize difficulties in daily activities of older adults with subjective cognitive decline (SCD) compared to individuals with mild cognitive impairment (MCI).

Methods: Deductive quantitative content analysis was used to classify reported issues in the performance of meaningful daily activities, in older adults with SCD ($n = 67$; age= 70 ± 6.3) or MCI ($n = 42$; age= 72 ± 6.6). The occupational performance issues were identified using the Canadian Occupational Performance Measure, a semi-structured interview, and categorised using the International Classification of Functioning, Disability and Health (ICF).

Results: Both groups identified issues in all nine ICF "Activities and Participation" domains, with no significant group effects on seven of them. The most frequently affected "Activities and Participation" domains in both groups were "Self-care" (e.g. exercise and diet); "Community, social and civic life" (e.g. social-leisure activities); and "General tasks and demands" (e.g. time management). Over 90% of the issues in both groups were described in the context of difficulties in "Mental functions" (e.g. memory and higher-level cognitive functions).

Conclusions: Older adults with SCD, although independent, identified a variety of daily activities that they are not performing satisfactorily, remarkably similar in nature to the occupational performance issues described by older adults with MCI.

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➤ IMPLICATIONS FOR REHABILITATION

- Older adults with SCD identified difficulties in performing social and leisure activities, maintaining healthy lifestyle behaviours, and managing multiple daily tasks.
- The daily challenges described by older adults with SCD are similar in nature to those identified by those with MCI.
- Older adults with SCD and MCI describe their daily challenges are related not only to memory problems, but also to executive dysfunction.
- Interventions for older adults with SCD should aim to improve self-identified problems in everyday functioning.

Introduction

Subjective cognitive decline (SCD) is the phenomenology of decline in cognitive functions with no evidence for objective cognitive deficits [1,2]. Longitudinal studies show that older adults with SCD are at risk for progression to mild cognitive impairment (MCI) [3,4] and dementia [5]. While older adults with SCD are relatively independent in instrumental activities of daily living (IADL) [6], and report better functioning in basic activities of daily living (BADL) and IADL compared to those with MCI and dementia [7,8], they are more likely to develop difficulties in BADL and IADL over a one year period, compared to older adults reporting no cognitive problems [9]. Moreover, the conversion rates from SCD to dementia are higher when impairments in IADL are also present [6]. Therefore, dementia research is shifting its focus towards identifying special high-risk populations, such as those with SCD, who can be targeted in interventions designed to prevent or delay dementia onset [10].

The implications of SCD for daily functions is scarcely studied. Indeed, daily functioning was not even addressed by a group of world experts on SCD [11] who recently provided several considerations for health-care providers working with this population. However, as we have recently shown that older adults with SCD report withdrawal from social and leisure activities performed 5–10 years before [12], we argue that it is critical to address daily functioning in older adults with SCD. This withdrawal is concerning because of the association between social-leisure activities and cognitive functioning in aging [13,14]. Further, our finding that withdrawal was greater with older adults with objective cognitive deficits [12], emphasizes the importance of addressing daily functioning before it is substantively impaired as this is associated with conversion to dementia.

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Supplemental data for this article can be accessed here.

Given the lack of information about the effects of SCD on daily functioning, it is not surprising that there is also a sparsity of information about interventions designed to improve daily functioning in older adults with SCD [15,16]. Behavioural interventions are, however, commonly used to address everyday outcomes in individuals with MCI, with positive outcomes [17]. We hypothesize that, similar to older adults with MCI [18–21], those with SCD experience difficulties in performing more complex everyday activities, and may be required to use high levels of effort or compensation strategies to preserve their independence. We, therefore, set out to understand whether older adults with SCD identify issues related to daily functioning that can be addressed through behavioural interventions, and to what extent they are similar to issues identified by older adults with MCI.

The International Classification of Functioning, Disability and Health (ICF) was used to conceptualize and execute this study. The ICF classifies health and health-related domains, and outlines how daily activities (under the "Activities and Participation" domain) interact with personal and environmental factors to influence health and wellbeing [22]. Occupational science theorists suggest that the subjective meaning that individuals associate with their occupations, related to personal needs, priorities, values, and choices, is a health and wellness promoting factor, more than the level of performance and independence per se [23]. In view of that, we aimed to capture daily functioning from a broad perspective, covering the wide array of activity domains beyond the commonly examined BADL and IADL, and touching on those that are personally meaningful. Standardized self-report questionnaires or observational based assessment, commonly used to examine daily functioning of older adults, assess the person's current ability to perform daily activities and are well suited to evaluate the level of functional independence when performing daily activities [24]. However, they are not designed to capture performance issues specifically related to activities that the individual perceives as meaningful.

We used the Canadian Occupational Performance Measure (COPM) [25], an individualized, client centred, semi-structured interview, designed to evaluate occupational performance of older adults with SCD. Occupational performance is the ability to select and satisfactorily perform personally meaningful daily activities that support life enjoyment and community integration [26]. The COPM identifies difficulties performing and engaging in meaningful activities, referred to as occupational performance issues (OPIs) [25]. The term OPIs is closely related to the ICF's concept of "participation restrictions", defined as problems in involvement in life situations, in that OPIs are self reported difficulties in satisfactorily performing daily activities that are perceived by the individual to be meaningful. The COPM has been used previously with older adults with MCI, who were able to identify OPIs related to IADL, social activities, leisure and sleep [27]. Therefore, we compared the OPIs identified by older adults with SCD to those identified by people with MCI in order to answer the following research questions: (1) are older adults with SCD able to identify OPIs that can be addressed in behavioural interventions targeting daily functioning? and (2) are the OPIs identified by those with SCD similar to those identified by older adults with MCI?

We chose to classify the OPIs using the ICF model, because it provides a standard language for describing the broad consequences of health conditions across health disciplines. The ICF has been shown to be a useful way for describing information obtained from qualitative and quantitative health outcome measures [28]. For example, the ICF was used to classify the qualitative data describing the implications of health conditions on functioning of older adults with joint contractures [29], and personal goals in adults with aphasia [30]. Our specific study objectives were to: (1) describe and categorize the types of OPIs identified by older adults with SCD; and (2) examine differences in types of OPIs identified by people with SCD and those with MCI.

Methods

Design and procedure

This is a secondary analysis of qualitative data collected for a parent randomised controlled trial (RCT; NCT03495037, unpublished), examining the effectiveness of a strategy-based client centered intervention in improving daily functioning of community dwelling older adults. The COPM was administered as part of the RCT protocol (the OPIs identified through the COPM were later transformed into treatment goals and addressed in the intervention for participants allocated to the treatment arm). The COPM was used as the primary outcome measure in the RCT and was collected again at the end of the intervention, and at follow-up assessments three- and six-months post intervention. In the current study, we analyzed the COPM results of all potential participants in the RCT who completed the pre-training assessment prior to January 2019. We used deductive quantitative content analysis [31,32], designed to ascribe meaning to a phenomenon by identifying and quantifying commonalities in occurrences in qualitative data, using theory driven categories defined *a priori* [32,33]. The study received approval from the Research Ethics Board of Baycrest Health Sciences. Participants provided informed, written consent.

Participants

Participants were 109 older adults who completed the pre-training assessment as part of the parent RCT. The inclusion criteria were: (1) community-dwelling; (2) age 60–85; (3) confirmed subjective cognitive problems (defined by confirming at least one of the following questions: "Do you feel that you have problems with your memory or cognition?" and "Do you feel that your memory has become worse?"; see Jessen et al. [11]); (4) fluent in English; (5) no current depression (Patient Health Questionnaire [34] score $\leq$9, indicating low levels of depressive symptoms); (6) no self-reported neurological or psychiatric history; (7) no self-reported substance abuse; (8) not currently receiving chemotherapy. Participants were classified into the SCD ($n = 67$) or MCI ($n = 42$) group, based on criteria detailed below.

Measures & SCD/MCI classification

The following neuropsychological tests were used to screen participants for the parent RCT, was used to classify participants into either the SCD or MCI group: The Montreal Cognitive Assessment (MoCA) [35]; Wechsler Adult Intelligence Scale III (WAIS-III) - Vocabulary and Digit Symbol subsets [36]; Delis-Kaplan Executive Function System (D-KEFS) – Colour Word Interference, Trail Making, Towers and Verbal Fluency Tests [37]; Brief Visuospatial Memory Test-Revised (BVMT-R) [38]; and Hopkins Verbal Learning Test- Revised (HVLT-R) [39].

Participants were classified as having SCD if they did not score below 1.5 standard deviations of age- and education- norms on more than one neuropsychological test within a cognitive domain (i.e. memory or executive function). Participants who scored below 1.5 standard deviations on two or more tests within a

Table 1. Between group comparison of demographics, neuropsychological battery and OPI means.

	SCD, $n = 67$	MCI, $n = 42$	Analyses
Demographics	n (%)		$\chi^2(1)$
Gender – Female	48 (71.6%)	28 (66.7%)	.303
	Mean ± SD (range)	t ($df = 107$)	
Age (years)	70.06 ± 6.34 (61–85)	71.86 ± 6.57 (60–84)	−1.42
Education (years)	17.25 ± 2.66 (11–26)	16.40 ± 3.70 (8–26)	1.28
Neuropsychological measures	Mean ± SD (range)	t ($df = 107$)	
MoCA scores	26.13 ± 2.12 (20–29)	22.93 ± 3.53 (14–28)	5.32**
WAIS-III - Vocabulary	52.84 ± 11.64 (3–65)	47.38 ± 10.90 (20–63)	2.44*
D-KEFS - Colour Word Interference - Inhibition[a]	61.19 ± 14.52 (38–129)	73.54 ± 25.72 (41–180)	−2.81**
D-KEFS - Trail Making[a]	94.28 ± 36.11 (41–240)	150.50 ± 58.88 (54–240)	−5.57**
D-KEFS - Towers (achievement)	16.30 ± 4.28 (6–27)	10.57 ± 4.86 (2–20)	6.46**
D-KEFS - Verbal Fluency (letter)	43.34 ± 11.04 (17–78)	38.52 ± 11.56 (5–61)	2.18*
BVMT-R - Total Recall	20.55 ± 5.75 (9–32)	12.45 ± 5.98 (2–29)	7.05**
BVMT-R - Delayed Recall	8.51 ± 1.99 (4–12)	5.17 ± 2.32 (1–10)	7.99**
HVLT-R - Total Recall	25.46 ± 4.35 (13–34)	19.05 ± 5.21 (9–28)	6.94**
HVLT-R - Delayed Recall	9.45 ± 1.98 (5–12)	5.17 ± 2.78 (0–11)	8.68**
Occupational Performance Issues	Mean ± SD (range)	t ($df = 107$)	
Number of OPIs	6.55 ± 1.08 (4–9)	6.19 ± 1.22 (2–8)	1.63
Mean OPI importance rating	7.97 ± 0.95 (4–10)	7.93 ± 0.98 (4–10)	0.24

SCD: subjective cognitive decline; MCI: mild cognitive impairment; MoCA: Montreal Cognitive Assessment; WAIS-III: Wechsler Adult Intelligence Scale III; D-KEFS: Delis-Kaplan Executive Function System; BVMT-R: Brief Visuospatial Memory Test-Revised; HVLT-R: Hopkins Verbal Learning Test- Revised.

[a]higher scores reflect worse performance.

*$p > .05$; **$p > .001$.

cognitive domain were classified as either SCD or MCI through consensus diagnosis by two licensed clinical neuropsychologists (NA, SV), based on neuropsychological test scores, self-reported medical history, and demographic characteristics such as age, education and age of acquiring the English language if it was not their first language.

The COPM is a semi structured interview designed to identify OPIs using open-ended questions. A trained healthcare professional administered the COPM and asked participants to describe daily activities they are not performing satisfactorily. The responses were documented in writing by the interviewer and read back to the participant for confirmation or modification as needed. Although participants were not asked to provide contextual details for the occurrence of the OPIs, personal and/or environments factors that prevent satisfactory performance were documented if provided. For example: "Activity: reading books; Context: feels distracted and cannot remember what previously read". Participants rated the importance of each activity on a scale of 1 (not important) to 10 (extremely important). As per the RCT protocol, the five most important OPIs, with an importance rating of four or higher, were scored on performance and satisfaction. When it was not possible to determine a cut-off importance rating that would include exactly five OPIs (e.g. importance level of four OPIs was rated as 10 and two OPIs rated as 9), we added all additional OPIs rated at the same level of importance as that of the fifth OPI on the list. If participants had less than five OPIs, we obtained performance and satisfaction scores for all the OPIs with an importance rating of four or higher. This resulted in varying numbers of OPIs per participant that were analysed in this secondary data analysis.

Data coding

We coded the OPIs using the ICF's "Activities and Participation" (A&P) domain [22,40], that includes a hierarchically organised list of distinct activities, divided into nine broad chapters, and further divided into a varying number of categories and subcategories (A&P level-2/level-3). Where applicable, we also analysed the context in which the OPI was described, using the "Body Functions" (BF) domain of the ICF. The BF domain is divided into eight chapters, with 2–3 subordinate levels of categories and subcategories in each (BF level-2/level-3/level-4). For example: "remember words in social conversations" was coded as the A&P category "d3508 Conversation, other specified", and the BF category "b1442 Retrieval of memory". We allowed for more than one A&P or BF code to be applied per OPI, if necessary. Two researchers (CL and HQ) separately coded each OPI, and disagreements were resolved through discussion and/or by a third researcher (SR). We used the ICF's coding system, whereby chapters are numbered with a single digit (e.g. Chapter 5: Self-care). Level-2 and −3 categories are coded using a letter (d in the A&P domain, b for the BF domain), followed by a three or four digit numbers that start with the chapter number, respectively (e.g. chapter 5 level-2 category "Looking after one's health" is coded as d570, and the subordinate level-3 category "Maintaining diet and fitness" is coded as d5701).

Data analysis

We used descriptive statistics to present demographic characteristics and the distribution of the codes by group. Between group comparisons on demographic characteristics and amount of identified OPIs were performed using independent samples t-tests and Chi-square (χ^2) tests. Between group comparisons on frequency of reported A&P and BF chapters were performed using χ^2 after dichotomising the data in each chapter into "yes" (one or more OPIs in the category) or "no" (zero OPIs in the category). χ^2 analysis was performed only for ICF domains with no cells that had an expected count of less than five participants. Between group effect sizes for χ^2 were calculated using Cramer's *V*, designed for nominal variables [41]. With one degree of freedom (as in this study), Cramer's *V* effect sizes of .10, .30 and .50 are considered small, medium, and large, respectively.

Results

The SCD ($n = 67$) and MCI ($n = 42$) groups identified 439 and 260 OPIs, respectively. The demographic characteristics,

Table 2. Between group comparison on frequency of ICF chapters.

ICF chapter	SCD, $n = 67$		MCI, $n = 42$			
	No OPIs *n* (%)	1+ OPIs *n* (%)	No OPIs *n* (%)	1+ OPIs *n* (%)	$\chi^2(1)$	ES[a] (*V*)
Activities and participation						
1. Learning and applying knowledge	38 (56.7%)	29 (43.3%)	26 (61.9%)	16 (38.1%)	.29	.05
2. General tasks and demands	25 (37.3%)	42 (62.7%)	20 (47.6%)	22 (52.4%)	1.13	.10
3. Communication	32 (47.8%)	35 (52.2%)	31 (73.8%)	11 (26.2%)	7.18**	.26
4. Mobility	52 (77.6%)	15 (22.4%)	39 (92.9%)	3 (7.1%)	4.35*	.20
5. Self-care	17 (25.4%)	50 (74.6%)	10 (23.8%)	32 (76.2%)	.03	.02
6. Domestic life	38 (56.7%)	29 (43.3%)	19 (45.2%)	23 (54.8%)	1.36	.11
7. Interpersonal interactions and relationships	56 (83.6%)	11 (16.4%)	34 (81.0%)	8 (19.0%)	.12	.03
8. Major life areas	40 (59.7%)	27 (40.3%)	21 (50.0%)	21 (50.0%)	.99	.10
9. Community, social and civic life	18 (26.9%)	49 (73.1%)	8 (19.0%)	34 (81.0%)	.87	.09
Body functions						
1. Mental functions	8 (11.9%)	59 (88.1%)	9 (21.4%)	33 (78.6%)	1.77	.13
2. Sensory functions and pain	62 (92.5%)	5 (7.5%)	41 (97.6%)	1 (2.4%)	N/A	.11
4. Functions of the cardiovascular, haematological, immunological and respiratory system	62 (92.5%)	5 (7.5%)	36 (85.7%)	6 (14.3%)	N/A	.11

SCD: subjective cognitive decline; MCI: mild cognitive impairment; ICF: International Classification of Functioning, Disability and Health; OPIs: occupational performance issues; 1+: One or more; N/A: not applicable.
[a]Effect size calculated using Cramer's *V*.
*$p > .05$; **$p > .01$.
Note: χ^2 not calculated when there were cells that have expected count of less than 5, and marked as N/A.

neuropsychological test results and mean OPI by group are presented in Table 1. No significant group effects were found on demographic variables or mean number of OPIs. The comparison between the groups on the percentages of participants who had one or more OPI in each chapter revealed no significant between group differences on most of the A&P chapters, with the exception of "Communication" (ICF-d3) and "Mobility" (ICF-d4). The percentage of participants with OPIs related to communication and mobility was significantly higher in the SCD group compared to the MCI group, with small-medium effect sizes (see Table 2).

Participants reported OPIs in all nine A&P chapters, and three BF chapters in both groups. The distribution of levels 1 and 2 A&P and BF chapters and categories by group are presented in Figure 1, and a detailed description of frequencies of all chapter and category levels, with example OPIs, is presented in Supplementary Appendix A. Of the total 699 OPIs, 17 were coded with two distinct A&P categories, resulting in a total of 716 A&P category codes. The results section is presented for the five A&P chapters that were used to classify at least 10% of the OPIs.

OPIs in the A&P self-care chapter (A&P chapter 5) were identified by the highest percentage of participants in the SCD group and accounted for almost 20% of the OPIs in both groups. As shown in Table 2, 75% of the participants in the SCD group, and 76% of the MCI group reported at least one "self-care" related OPI. Over 80% of the activities in the "self-care" chapter in both groups were activities related to level-2 category of "Looking after one's health" (d570), mostly explained by level-3 activities related to "Maintaining diet and fitness" (d5701).

OPIs related to "Community, social and civic life" (A&P chapter 9) were reported by 72% of the SCD group, with more than half of those reporting two or more OPIs related to this chapter (see Figure 2). While the percentages were higher in the MCI group (81% had one OPI, 55% had two or more), this difference was not statistically significant. "Community, social and civic life" chapter was used to classify 21% of the OPIs in the SCD group, and 29% in the MCI group. In both groups, 97–98% of these were classified as A&P level-2 category "Recreation and leisure" (d920), that included mainly A&P level-3 activities such as "arts and culture" (d9202), "socializing" (d9205) and sports (d9201).

Sixty-three percent of the participants in the SCD group, and 52% of the MCI group identified OPIs related to "General Tasks and Demands" (A&P chapter 2). OPIs in this chapter accounted for 16% of the OPIs in the SCD group, and 13% in the MCI group. Of these, 97% in the SCD group and 100% in the MCI group fell under the level-2 category "Carrying out daily routine" (d230), that includes activities such as keeping track of appointments and errands; managing time; and not misplacing items.

Fifty-two percent of the participants in the SCD group reported at least one OPI related to "Communication" (A&P chapter 3), significantly more than the 26% of the MCI group. OPIs in this chapter included almost exclusively (98–100%) difficulties retrieving words and/or names during social conversations, that fell under the category of "conversation" (d350). OPIs related to "Domestic life" (A&P chapter 6) were identified by 43% and 56% of the participants in the SCD and MCI groups, respectively, and accounted for 10% and 13% of the OPIs. Most (56%) of the "Domestic life" activities in the SCD group were related to doing housework (d640).

Of the 699 OPIs, 256 were also coded using the "Body Functions" domain, 175 in the SCD groups and 81 in the MCI group. Eleven OPIs were coded with two distinct "Body Functions" codes, for a total of 267 codes. We found OPIs in three of the eight BF chapters, with no significant between-group differences on the frequency of participants reporting OPIs in any of them (see Table 2). Over 90% of the OPIs with BF classification in both groups fell under the "Mental functions" (BF chapter 1), reported by 88% and 79% of the participants in the SCD and MCI group, respectively. The two most frequently used level-2 categories under "Mental functions" were "Memory functions" (b144) and "Higher-level cognitive functions" (b164), defined as mental functions related to goal directed behavior, commonly termed executive functions [42,43].

Discussion

This is the first study to describe and classify issues related to daily functioning of older adults with SCD. Regarding our research questions, we found that community dwelling older adults with SCD were able to identify a wide variety of daily life or occupational performance issues and that these issues were very similar in nature to those identified by older adults with MCI. Indeed, after classifying OPIs using the ICF as planned, we found no significant between group differences on the proportion of participants reporting OPIs in seven of the nine A&P chapters, nor on any of the BF chapters. The similarity in the realm of activity issues identified by older adults with SCD and MCI provides

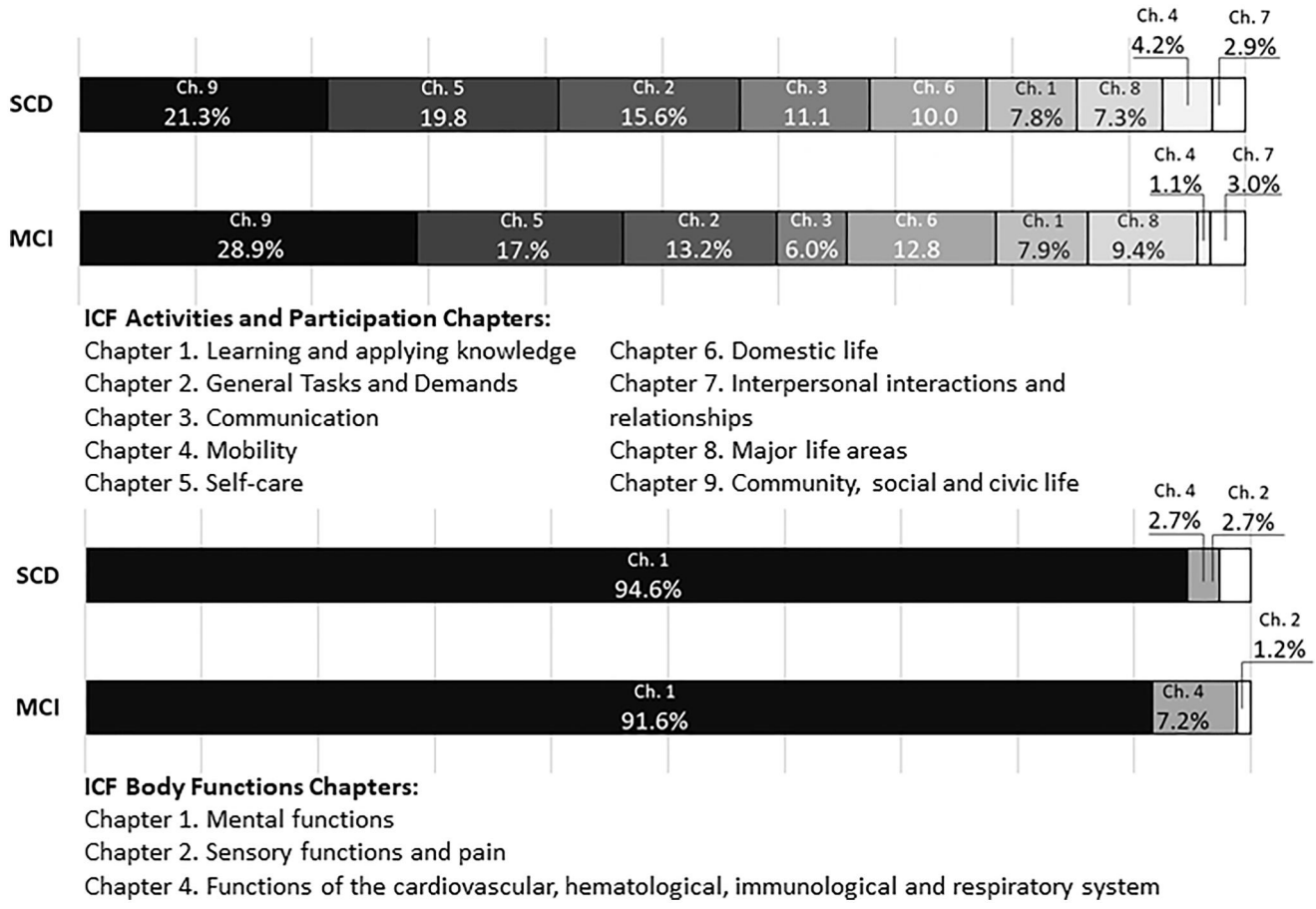

Figure 1. Distribution of OPIs: ICF Activities and Participation and Body Functions chapters by group.

support for understanding SCD as a potential early indicator of future decline, and a possible first stage in the trajectory of interwoven cognitive and functional decline [8,11]. Importantly, while similar domains of daily challenges were found in participants with SCD and MCI, this does not suggest that their level of daily functioning is also comparable. It is possible that the severity of functional difficulties is higher in those with MCI, and this should be investigated in future research.

The finding that older adults with SCD, although independent in daily living [6], were able to identify many daily activities that they were not performing satisfactorily suggests that they are experiencing functional challenges that could be addressed through behavioural interventions. Non-pharmacological interventions for people with SCD include cognitive training, psychological methods and lifestyle interventions [15,16]. Interventions aimed at preserving or improving daily functioning in older adult with SCD are rarely studied (see Dawson et al. [43]), perhaps because this population is considered to be functionally independent. Our findings support the appropriateness of targeting interventions aimed at improving self identified problems in everyday functioning towards older adults with SCD.

This study sheds light on the activity domains in which older adults with SCD report difficulties. The two A&P chapters most frequently used to classify OPIs in both groups were “Self-care” and “Community, social and civic life”. These categories reflect mainly activities related to healthy lifestyle behaviours (exercise, diet), social and leisure activities. This is concerning, as physical exercise, nutrition, and social-leisure activities are lifestyle behaviours known to are associated with preserved cognitive abilities in aging [14,44–47]. The findings of our study suggest a need to further investigate why older adults report difficulties in social and leisure activities and other health promoting lifestyle behaviours, and the underlying mechanisms that affect these, in order to support performance.

The third most frequently reported A&P chapter was "General tasks and demands”, comprised mainly of activities related to managing and tracking one’s appointment times and errands and not misplacing items (e.g. glasses, keys, wallet). The relatively high percent of participants reporting this type of OPI suggests that although older adults with SCD report little to no difficulty performing specific IADL tasks [6], they may be encountering difficulty managing multiple tasks, that require time management, prioritising and problem solving. This suggests that common IADL questionnaires that assess ability to perform isolated IADL tasks may not be fully capturing the essence of challenge to IADL functioning in older adults with SCD. The reported issues managing multiple IADL tasks raises the possibility that age related decline in executive functions may be impacting daily functioning in older adults with SCD. Although our sample of older adults with SCD were classified as scoring within age and education norms on the executive function test battery, a meta-analysis of 401 studies reports that healthy older adults score significantly lower than healthy young adults on executive function tests, with a large effect size (Hedge’s $g = 1.29$), suggesting executive decline in healthy aging [48]. Further investigation of the involvement of executive functions in the daily activities of older adults with SCD is required, yet this hypothesis is supported by our finding that

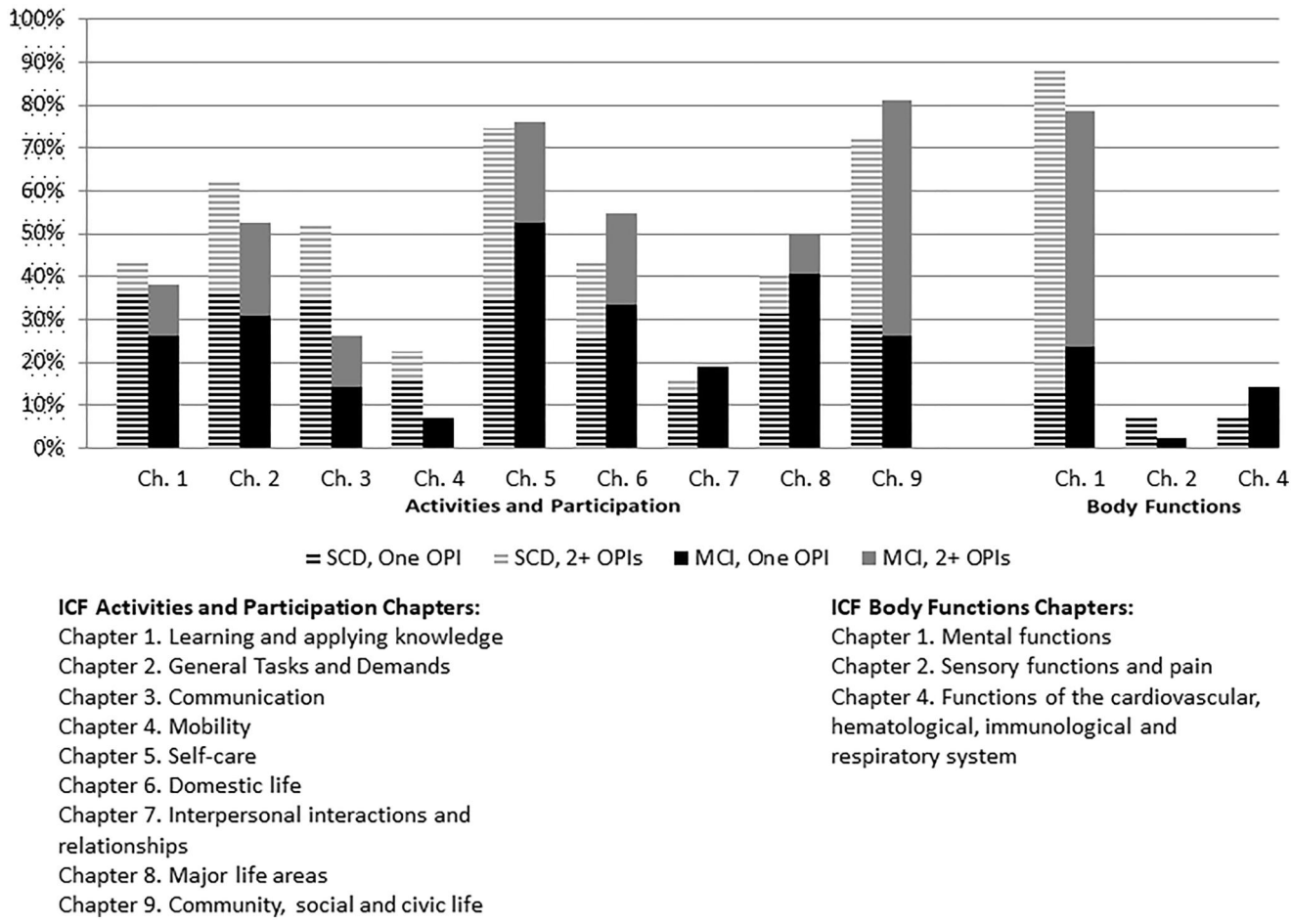

Figure 2. Frequency of participants with one; or 2+ OPIs in each Activities and Participation and Body Functions chapters, by group.

one third of the OPIs with BF classification were related to executive functions.

OPIs related to "Communication", were expressed by half of the participants in the SCD group, mostly classifying issues such as retrieval of words and names in a conversation. These issues are among the most prevalent memory related problems reported by older adults [49]. The significantly lower percentage of participants in the MCI group that reported OPIs related to communication is surprising because individuals with MCI score significantly lower than those with SCD on neuropsychological verbal fluency tests [50], as did the MCI group in this study (see Table 1). A possible explanation for this may be related to the study methodology. Because we only analysed the OPIs rated highest in importance, it is possible that although both older adults with SCD and MCI experience word retrieval issues, these issues may have been superseded by other activities in the MCI group that experiences more difficulties related to ADL, IADL, social and leisure activities than those with SCD [7,8,12]. OPIs related to word retrieval that were rated as less important than other activities were not included in the list of OPIs that were analysed. While older adults with SCD reported significantly more OPIs related to communication copared to those with MCI, the clinical significance of this finding is questionable as this A&P chapter accounted for only a small proportion of the OPIs, and the effect sizes were not large.

Many participants in the SCD group identified issues related to acquiring skills for using technological devises such as a computer, tablet or cellular telephone (classified as "Learning and applying knowledge"). This is an interesting finding, as efficient use of technology has become instrumental in multiple daily activities, and can support the performance of IADL, social and leisure activities. Older adults with SCD show reduced ability to use everyday technology (e.g. send emails, text on cell phone) compared to healthy older adults [51], but this domain is not often assessed in clinical or research contexts. Our findings suggest it may be beneficial to assess this issue explicitly in the clinical evaluation of older adults with SCD.

OPIs related to sleep and sleep quality accounted for less than 3% of the OPIs in both groups (see Supplementary Appendix A). We found this surprising, as over 65% of older adults aged 65 and older report one or more symptom/s of sleep problems [52]. The low rates of reported sleep problems may be due to the wording of the COPM interview, as some individuals may not have perceived sleep as an activity and not reported this as an issue.

The vast majority of the OPIs with BF classification in both groups were related to level-2 categories of "Memory functions" and "Higher-level cognitive functions". This is likely because our sample included participants with self-reported cognitive deficits, and those with neurological deficits that can affect physical functioning (e.g. Parkinson's disease, stroke) were excluded. In the SCD group, a third of the OPIs with BF classification were related to memory functioning, and a third to executive functions. This supports the recommendation put forward by the Subjective Cognitive Decline Initiative Working Group to include subjective measures of cognitive domains other than memory in SCD assessments [53].

Study limitations

There are several limitations to this study. First, the cognitive or physical function perceive as causing their OPIs were not explicitly elicited from participants, and were only collected if spontaneously mentioned by participants. As a result, the BF context of the OPIs was provided only for approximately one-third of the OPIs, which may have affected the findings. Second, as per the parent RCT protocol, we analysed only the five most important OPIs per participants (sometimes adding several more, see measures). This may have resulted in the exclusion of personally important OPIs, as some OPIs with relatively high importance ratings may have been excluded because they were not one of the five most important OPIs. Additionally, the variability in number of OPIs per participants may have biased the results, as a person reporting a higher number of OPIs may result in more A&P chapters being reported. The similarity in mean number of OPIs per person in both groups reduces the risk of this bias.

Conclusions

This study shows that older adults with SCD are able to identify OPIs related to a wide variety of domains of daily functioning, and that these are comparable to OPIs identified by older adults with MCI. Older adults with SCD identified many OPIs related to social and leisure activities, healthy lifestyle behaviours, and managing multiple daily tasks. The results highlight the importance of assessing everyday functioning in older adults with SCD, using an open-ended approach that can identify a wide variety of difficulties. Interventions for older adults with SCD should address individually identified limitations to daily functioning.

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