Face Validity and Clinical Utility of the Activity Card Sort - United Kingdom

a Student as Co-Researcher project

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Students as Co-Researchers

- 3rd year BHSc(Hons) Occupational Therapy students
- Collaborated in this study for their final year project
- Focus is on students and tutors collaborating in a research team
- Provides students with an experience of gaining ethical approval, participant recruitment and consent procedures, administering and scoring the ACS-UK, conducting a semi-structured interview, transcribing and data analysis.
Students as Co-Researchers

- Pedagogic drivers = Research informed Teaching (RiT) and Enquiry Based Learning (EBL).
- Professional drivers = evidence based practice
- Level 3 module in our new curriculum ‘Contributing to the Evidence Base’
- Assignment 5000 word written assignment in the format of a BJOT article
Acknowledgments

Grateful thanks to:

- 27 participants who gave up their time to participate in the data collection and the people who supported the recruitment of participants.

- The 8 occupational therapy undergraduate students who contributed to this study: Group 2: Leanne Brain, Courtney Brody, Lauren Cardy and Lisa Group 1: Jessica Harrison, Hannah Lewis, Lucy Shaw and Debbie Agar.

- Professor Carolyn Baum for permission to develop a UK version of the Activity Card Sort.
Background: Activity Card Sort (ACS)

- The Activity Card Sort (ACS; Baum & Edwards, 2008) is recognised internationally as a useful self-report measure of participation for clinical practice and research (e.g., Eriksson, et al., 2011)
- ACS-UK (Laver-Fawcett & Mallinson, 2013) has 91 Photograph cards for activities grouped in 4 categories:
  - Instrumental, Low Demand Leisure, High Demand Leisure, Social/Cultural
- 3 ACS-UK versions: Recovery, Institutional and Community Living (using the same 91 photo activity cards)
- Different sorting categories of participation levels used for each of the three versions
Sorting categories for ACS-UK

Community-Living version (Form C)

- Never Done
- Not done in past year (optional)
- Do More (score as do now)
- Do Now (1)
- Do Less (0.5)
- Given Up (0)

Done Previously
Calculated after sort:
Do More + Do Now + Do Less + Given Up

+ At the end participants are asked to “identify the five most important activities to you (they may be those you no longer do)”
## Example – part of ACS-UK scoring form (HDL domain)

<table>
<thead>
<tr>
<th>ACS-UK card</th>
<th>ACS-UK Activity</th>
<th>Never Done</th>
<th>Not done in past year</th>
<th>Do More</th>
<th>Do Now</th>
<th>Do Less</th>
<th>Given Up</th>
<th>Done Previously</th>
<th>Scores</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Demand Leisure</td>
<td>Not sorted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Going to the Beach</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Recreational Shopping</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Dancing</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>Used to go to tea dances with her husband</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>Swimming</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Indoor Bowling</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>Outdoor Bowling</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>Playing Golf</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Walking</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Hiking / Rambling</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Exercising</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Riding a Bicycle</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Going on Holiday / Travelling</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Attending a Hobby / Leisure Group</td>
<td>X</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>Joined a local tai chi club</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Going to Gardens / Parks</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>Would like to go more</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Fishing</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>But use to go with father as a child and watch him fishing</td>
<td></td>
</tr>
<tr>
<td>Total High Demand Leisure Activities</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3×0=0</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Current**: 1 + 3 = 4 (CA)

**Previous**: 10 (PA)

**% Retained**: 4/10 = 0.4 x100 = 40% (RAS)
Objectives

- Determine the time required to administer and score the ACS-UK (duration - clinical utility)
- Explore the ease of use of the ACS-UK for the people administering the assessment - occupational therapy students considering their future practice (clinical utility)
- Explore the acceptability of the ACS-UK to community dwelling older people (face validity and clinical utility)
- Measure the ACS-UK Global Activity Retention Scores among community dwelling older people.
Method

- Mixed methods approach (Creswell and Plano Clark, 2011)
- ACS-UK was administered, scores obtained for: Current Activity (CA), Previous Activity (PA) and Retained Activity (RA)
- Time taken to administer and score the ACS-UK (in seconds)
- A semi-structured interview was developed to explore aspects of face validity, content validity and clinical utility
- Open ended questions were used to allow participants to state opinions and explore ideas further
- Students carried out interviews in pairs for consistency
- Interviews were audio recorded and transcribed verbatim
Sample

- 27 White British participants (16 women; 11 men) aged 65 or over.
- Convenience Sample (recruited through local community centres, religious groups, coffee mornings, libraries and contacts known to the researchers)
- Community dwelling older adults (not living in a residential or nursing home)
- over the age of 65
- who could comprehend and communicate in English (the project did not have the resources for translation and the ACS-UK activity labels on cards are written in English)
- had capacity to provide informed consent (according to the Mental Capacity Act 2005 (English legislation)
- Exclusion criteria: people who were currently receiving secondary health care or social services
- Participants could be receiving check-ups/ routine care from their General Practitioner (e.g. seasonal flu jabs)
Qualitative Findings (n = 27)

10 participants reported the ACS-UK was ‘good’ or ‘very good’

‘amusing’ and ‘enlightening’ (P1)

6 found it: ‘interesting’ and / or ‘straightforward’

‘fine’ but it ‘did not cover every eventuality’ (P11).

‘well organised’ (P23)

‘widespread’ (P12)

‘very detailed’ (P8)

‘confusing’ (P2)

Views of the ACS-UK (question 1)
Qualitative Findings (n = 23)

85% (n = 23) stated the ACS-UK was easy and straightforward to do.

100% agreed the ACS-UK instructions were easy to follow.

4 participants were unsure where certain cards should be placed.

2 had difficulty sorting item 80 ‘being with your spouse or partner’ (they were widowed).

9 said sorting category labels made sense; ‘there couldn’t be any more alternatives’ (P25).

3 had difficulty deciding which 5 activities to choose as their most important.

Completing the ACS-UK (questions 2 and 3)
Qualitative Findings

37% (n = 10) thought the assessment was related to age

‘to see if old age is setting in’ (P22)

‘to test the level of intelligence for the age group’ (P24)

unsure of the purpose of the assessment (n = 2)

48% (n = 13) thought the assessment was to ‘see what people over 65 do with their lives’ (P23)

‘to develop some sort of a system to help people come back into normal life’ (P20).

Purpose of the Assessment (question 4)

help with student studies (n=2)

‘accounting for people’s age and what their mind is like’ (P15)
Qualitative Findings (n = 26)

100% the photographs looked like the activities they were depicting

96% agreed the activity labels matched the photographs on the cards

N = 2: age range of people in the photographs noting that they ‘showed people a lot older than 65’ (P19)

81% no activities that older people engage in had been missed

Views of the Activity Items (questions 5, 6 and 7)

Missing items: ‘volunteering with people’ (P18); ‘sleeping’ (P7); ‘football’ (P14); ‘jigsaws’ (P14, P26); and ‘playing an instrument’ (P16)
Qual. Findings (n = 26)

- ‘very quick’ (P24)
- ‘shorter than I thought it would be’ (P19)
- ‘just right’ (P21)
- ‘didn’t take long’ (P3)
- 92.6% agreed the time to complete the assessment was reasonable

Time taken (question 8)
Qual. Findings

89% did not identify anything they did not like about the assessment

70% could not think of any way to make the assessment better

Suggestion for further sorting categories:
- ‘wish I could do’ (P18);
- ‘aims for the future’ (P18);
- ‘not applicable’ (P3);
- ‘not often’ (P7); and
- ‘sometimes’ (P7)

Suggestions to improve the assessment (questions 9, 10 and 11)

P16 was unsure of the purpose of the assessment and so felt unable to answer question

N = 1: pictures did not represent 65 year olds

Some photographs did not present people physically doing the activities

N = 1: pictures did not represent 65 year olds

P16 was unsure of the purpose of the assessment and so felt unable to answer question

Suggestion for further sorting categories:
- ‘wish I could do’ (P18);
- ‘aims for the future’ (P18);
- ‘not applicable’ (P3);
- ‘not often’ (P7); and
- ‘sometimes’ (P7)
## Discussion: qualitative findings

<table>
<thead>
<tr>
<th>Feedback from study</th>
<th>Consideration</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS-UK item 80 ‘Being with your spouse / partner’ difficult to categorise for some participants</td>
<td>Identified as problematic for participants who had been widowed</td>
<td>Manual will suggest that therapists could remove this item if they are aware that the client has been widowed, divorced or separated</td>
</tr>
<tr>
<td>Most difficult aspect of the assessment appeared to be choosing five most important activities</td>
<td>ACS-NL (Jong et al., 2012) has four overview cards which show smaller size photographs of all activity items for each domain on one sheet.</td>
<td>Overview sheets showing all the ACS-UK IADL, LDL, HDL and SC activities have now been produced</td>
</tr>
</tbody>
</table>
## Discussion: qualitative findings

<table>
<thead>
<tr>
<th>Feedback from study</th>
<th>Consideration</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items that cover a number of activities, such as ‘Managing financial matters’, need more clarity</td>
<td>Consider having more than one photograph on a card or add some examples in brackets under the activity label</td>
<td>To review combined activities and add examples</td>
</tr>
<tr>
<td>Two participants who were under 70 years old commented that most of the people in the photographs appeared quite a bit older than 65 years.</td>
<td>As the assessment is for people aged 65 and over it is important that the photographs included are representative of the whole age group.</td>
<td>Several items have now been re-photographed to show people under 70 completing activities</td>
</tr>
<tr>
<td>Several participants were unsure of the purpose or had not correctly identified the reason for the assessment</td>
<td>It is important that people fully understand the purpose of an assessment</td>
<td>More detailed guidelines provided in the ACS-UK test manual to instruct therapists how to explain the purpose of the ACS to clients</td>
</tr>
<tr>
<td>Feedback from study</td>
<td>Consideration</td>
<td>Decision</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Add an item for sleeping (n = 1)</td>
<td>The ACS-UK item 15 ‘Taking a rest’ shows someone sitting on a sofa with her eyes closed. Literature review – sleeping as an occupation</td>
<td>Item for ‘Sleeping’ to be added to ACS-UK</td>
</tr>
<tr>
<td>Add an item to represent volunteering with people (n = 1) to show an active role of volunteering such as working with children or adults</td>
<td>ACS-UK item 78 ‘Volunteer Work’ can include a wider range of volunteering activities</td>
<td>Further written examples in brackets will be added to item 78</td>
</tr>
<tr>
<td>Add item for ‘playing an instrument’ (n = 1)</td>
<td>Playing instrument had not met the cut-off level for inclusion during content validity study</td>
<td>If the person mentions playing an instrument this can be added as an ‘other’ activity</td>
</tr>
<tr>
<td>Feedback from study</td>
<td>Consideration</td>
<td>Decision</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------</td>
<td>----------</td>
</tr>
<tr>
<td>Add an item for doing jigsaw puzzles (n = 2)</td>
<td>In content validity study ‘Putting together puzzles’ had mean frequency above the cut-off during Round 1. But had been combined: item 32 ‘Doing Puzzles / Crosswords’</td>
<td>New item ‘Doing Jigsaws’ has been added as ACS-UK item in the Low Demand Leisure domain.</td>
</tr>
<tr>
<td>Football was not included (n = 1); playing or watching football?</td>
<td>Item 30 ‘Going to watch a sports event’ and item 62 ‘Exercising’. Do people perceive participating in team games, such as football, as ‘exercise’?</td>
<td>Further written examples in brackets will be added to item 62.</td>
</tr>
</tbody>
</table>
Quantitative findings: Time taken to score the ACS-UK

<table>
<thead>
<tr>
<th>Sample</th>
<th>Range in seconds (minutes and seconds)</th>
<th>Mean in seconds (mins and secs)</th>
<th>Standard deviation (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample 1 (n = 16)</td>
<td>208-368 (3 m 28 s – 6 m 8 s)</td>
<td>277 (4 m 37 s)</td>
<td>47</td>
</tr>
<tr>
<td>Sample 2 (n = 11)</td>
<td>255-415 (4 m 15 s – 6 m 55 s)</td>
<td>310 (5 m 10 s)</td>
<td>50</td>
</tr>
<tr>
<td>Combined sample (N = 27)</td>
<td>208-415 (3 m 28 s – 6 m 55 s)</td>
<td>290 (4 m 50 s)</td>
<td>50</td>
</tr>
</tbody>
</table>
Time taken to administer the ACS-UK

(n = 11 participants and 4 assessors)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Range in seconds (minutes and seconds)</th>
<th>Mean in seconds (mins and secs)</th>
<th>Standard deviation (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample 2</td>
<td>290-1020 (4 m 50 s – 17 m)</td>
<td>581 (9 m 41 s)</td>
<td>225 (3 m 45 s)</td>
</tr>
</tbody>
</table>

Mean time for administering and for scoring the ACS-UK was combined. The average duration was 14 minutes 31 seconds.
Discussion: duration

- Despite having the most items of any ACS versions, the average time for administering and scoring the ACS-UK was approx. 14 ½ minutes.
- Longest scoring time < 7 minutes.
- Longest administration time was 17 minutes.
- Total assessment time approx. 24 minutes.
- Total ACS-UK time was 4 minutes longer than the 20 minutes reported for the ACS-HK (Chan et al., 2006) and ACS (Baum and Edwards, 2008).
- It may be that test administration will take longer with some client groups.
<table>
<thead>
<tr>
<th>Domain</th>
<th>Range (%)</th>
<th>Mean (%)</th>
<th>Standard deviation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Retained Activity Score (GRAS)</td>
<td>51.09 - 89.47</td>
<td>70.10</td>
<td>10.32</td>
</tr>
<tr>
<td>Instrumental Activities of Daily Living (IADL) RAS</td>
<td>66.00 - 95.83</td>
<td>79.36</td>
<td>8.42</td>
</tr>
<tr>
<td>Low Demand Leisure (LDL) RAS</td>
<td>36.84 - 96.66</td>
<td>71.78</td>
<td>14.19</td>
</tr>
<tr>
<td>High Demand Leisure (HDL) RAS</td>
<td>12.50 – 100</td>
<td>57.41</td>
<td>20.27</td>
</tr>
<tr>
<td>Social / Cultural (SC) RAS</td>
<td>28.94 - 85.71</td>
<td>63.49</td>
<td>14.60</td>
</tr>
</tbody>
</table>
Limitations and future research

- This study involved a small homogenous convenience sample.
- It would be beneficial to conduct a further study with a more ethnically diverse sample that better represents the UK older adult population.
Limitations and future research

- As a number of changes are being made to the ACS-UK in response to the results of this study, it would be useful to evaluate whether the changes lead to improved face validity with another sample.
Conclusion

- The study showed that overall the ACS-UK has good acceptability and utility in terms of older adult’s first impressions, ease of understanding instructions, activities, activity labels and carrying out the card sort.

- However, understanding of the purpose of the ACS-UK was varied and this aspect of face validity can only be considered as fair.

- In terms of clinical utility, the reasonable time required to administer and score the ACS-UK, along with the ease of administering and scoring the assessment suggests that the ACS-UK has good clinical utility.
Conclusion (continued)

- The study also identified potential additional activities for consideration and shed new light on some activities which were previously removed during initial test development.

- A sample of ACS-UK scores for community dwelling older adults was obtained for a future discriminative validity study.
Questions and discussion
References


Ethical approval

- A pilot of the Activity Card Sort – United Kingdom [ACS-UK] with a sample of community dwelling, healthy older people (ACS-UK II study)
- The York St John University ethics committee approved both rounds of data collection for this study:
  - UG10-4Nov11-DS approved on 4.11.2011
  - UG4-1NOV12-ALF approved 1.11.2012
Appendix: Interview questions

1. What are your first impressions of the Activity Card Sort?
2. Did you find the assessment straightforward to carry out?
3. How easy were the instructions to follow, in relation to:
   • Categories make sense
   • Sorting the cards
   • Choosing 5 most important / favourite activities
4. What do you think the purpose of this assessment is?
5. Do the photographs look like the activities they are representing?
6. Do the descriptions match the pictures on the cards?
7. Have we missed any activities that you know older people participate in?
8. What do you think about the time it took to complete the assessment?
9. Was there anything you didn’t like about the assessment?
10. Is there any way we can improve the assessment?
11. Do you have any additional comments you would like to make?
Contact details

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