**Development of the Activity Card Sort – United Kingdom Version (ACS-UK)**

Alison J. Laver-Fawcett, PhD, O.T.(C), DipCOT, PCAP

Senior Lecturer (Occupational Therapy) and Research Programme Lead, Occupation and Older People’s Mental Health Research Programme, Research Centre for Occupation and Mental Health (RCOMH), Faculty of Health and Life Sciences, York St John University, York, UK

Sarah H Mallinson, MSc

Doctoral student, Faculty of Health and Life Sciences, York St John University, York, UK

Corresponding author:

Dr Alison Laver-Fawcett

Research Centre for Occupation and Mental Health

Faculty of Health and Life Sciences

York St John University

Lord Mayor’s Walk

York

YO31 7EX

United Kingdom

[a.laverfawcett@yorksj.ac.uk](mailto:a.laverfawcett@yorksj.ac.uk)

This research was supported by an internal grant from the Faculty of Health and Life Sciences at York St John University. The authors maintain sole copyright of the Activity Card Sort-United Kingdom (ACS-UK). It is planned that the ACS-UK will be published, in which case the authors / York St John University may receive financial rewards (such as royalties) from the ACS-UK in future. Anyone interested in contributing to research related to the ACS-UK prior to publication of the tool should contact the first author.

*Acknowledgments:*

This research project was supported by funding from the Faculty of Health and Life Sciences at York St John University, York, United Kingdom and undertaken at the Research Centre for Occupation and Mental Health (RCOMH). The authors express their grateful thanks to: Dr. Carolyn Baum and Dr. Dorothy Edwards, from the Program in Occupational Therapy at Washington University School of Medicine, St Louis, USA, for their permission to develop a UK version of the Activity Card Sort and to Carolyn for her advice regarding the methodology for this study; Stephen Wey, Senior Lecturer at York St John University, for his contributions to discussions pertaining to the 1st stage item generation and help with collecting some of the focus group data during the 2nd round survey; Joyce Latimer, Occupational Therapist, at The Retreat, York, for her support with subject recruitment; and to all the people who took part in this study.

Development of the Activity Card Sort – United Kingdom Version (ACS-UK)

*Keywords:* Older People, Participation, Outcome Measure

**Abstract**

The Activity Card Sort (ACS) is a valid and reliable measure of older people’s participation; however, cultural sensitivity issues are a limitation to its application in the United Kingdom (UK). A content validity study was undertaken to identify culturally relevant activity items to be included in a UK ACS version (ACS-UK). For item generation, UK time-use studies, research related to other ACS versions and expert opinions were utilised. A two-round survey of community-living UK older people (aged 65 years and older; round 1 n = 177; round 2 n = 21) was used for item selection, clarifying the wording of activity labels and agreeing activity domain classification. Ninety-one activities were identified for the ACS-UK and these have been compared and contrasted with items from other ACS versions. The ACS-UK is a culturally relevant measure that can provide useful insight into the participation of older people for clinical practice and research.

**Development of the Activity Card Sort – United Kingdom Version (ACS-UK)**

**Introduction**

The World Health Organisation (WHO, 2012) has encouraged societies to develop ‘new models of ageing for the 21st century’ because the proportion of older people in the global population is projected to increase presenting significant social and economic challenges; WHO asserts that ‘everyone benefits from communities, workplaces and societies that encourage active and visible participation of older people’ (p.10). Participation has been defined as ‘engagement in work, play, or activities of daily living that are part of one’s socio-cultural context and that are desired and / or necessary to one’s well-being’ (Kielhofner, 2002, p. 115); this definition acknowledges the importance of social factors and culture on people’s expectations of activity participation. Extant research attests to this as it indicates that participation in required activities, alongside engagement in active recreational interests, is associated with lower levels of depression, better cognition and higher health-related quality of life in older people (Kalldalen, Marcusson & Wressle, 2013).

Occupational therapists can make important contributions to both prevention and remediation services for older people through enabling participation in meaningful occupations (Clark et al., 2011). However, further research is required to increase understanding of the factors that facilitate participation and evaluate occupational therapy interventions that are directed at increasing participation (Law, 2013). This is a particular issue for older populations with stroke (Spitzer, Tse, Baum & Carey, 2011) and mental health problems (Bannigan & Laver-Fawcett, 2011). Reliable and valid measures of older people’s activity participation are essential for such research. 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).

Developed in the United States (US), the ACS is used to assess older people’s occupational histories, select activities as a focus for intervention and evaluate changes in participation levels (Baum & Edwards, 2008). However, the ‘integrity of the ACS is dependent on selection of culturally relevant, common activities as items’ (Packer, Boshoff & DeJonge, 2008, p.201). In the UK, Kessler and Egan (2012) undertook a review of measures to evaluate participation outcomes post-stroke and identified the ACS as a potentially useful measure. However, they noted limitations as the ACS depicts some activities that appear culturally specific to the US. A project undertaken by occupational therapy students in the UK (Laver-Fawcett, 2012), involved the administration of the ACS to explore the participation of older people with dementia and their care-givers. Findings indicated that the ACS was an effective measure of participation with these groups, however, a number of the ACS photographs depicting activities and some activity labels proved problematic for cultural reasons (Laver-Fawcett, 2012). A major concern related to semantics as American English is used for the wording of ACS activity descriptions and several terms used appear uncommon in the UK. For example: ‘Taking out the trash’ (the usual UK term is ‘putting out the rubbish’); ‘Yard maintenance’ (instead of ‘gardening’); and ‘Getting gas’ (rather than ‘going to get petrol / diesel’). The content of some ACS photographs depict activities less usual in the UK, such as baseball (football, cricket or rugby are more common sports). Some background environments were clearly American and cars showed the driver on the left-hand side whereas in the UK cars are right-hand drive (Laver-Fawcett, 2012). The established value of other cultural versions of the ACS (Eriksson, et al., 2011) and identified cultural sensitivity issues regarding the use of the ACS in the UK led to the decision to develop a UK version of the ACS (to be known as the ACS-UK). Researchers needed to change the terms used to describe some activity items to reflect language used by UK older people and re-photograph all the activities in UK environments. The opinion of older people needed to be sought to ensure cultural relevance of the existing ACS items and also establish any common missing activities. The purpose of this research was, therefore, to conduct a content validity study to generate and select culturally relevant activity items for inclusion in the ACS-UK. This study was undertaken with permission and advice from the authors of the ACS (Baum & Edwards, 2008).

**Literature review**

The ACS has been used to research participation for older people living in the community (Everard et al., 2000), facing disability transitions (Albert, Bear-Lehman & Burkhardt, 2009), experiencing cognitive deficits (Baum, 1995), stroke (Edwards, Hahn, Dromerick, & Baum, 2005) and vision problems (Packer, Girdler, Boldy, Dhaliwal, & Crowley, 2009). Cross-cultural research has demonstrated that the ACS has improved validity and utility when the activities depicted are relevant to people’s culture and environment (Chan, Chung & Packer, 2006; Doney & Packer, 2008; Eriksson et al., 2011; Katz, Karpin, Lak, Furman, & Hartman-Maeir, 2003). Researchers have adapted the ACS to develop eight culturally sensitive and valid versions for use in: Arab countries (A-ACS; Hamed et al., 2011; Hamed & Holm, 2013); Australia (ACS-Australia; Packer, et al., 2008); Hong-Kong (ACS-HK; Chan et al., 2006); Israel (Katz et al., 2003; Sachs & Josman, 2003); Korea (Lee, 2009, as cited in Eriksson et al., 2011); Puerto Rico (Orellano, 2008); and the Netherlands and Singapore (as reported by Eriksson et al, 2011).

All ACS versions use a Q-Sort, a method that was originally described by Stephenson (1936 as cited in Block, 1961, p. 12) for collecting subjective data and involves the sorting statements on cards to explore individuals’ perspectives. The ACS (Baum & Edwards, 2008) Q-sort comprises 89 cards each showing a photographed activity with a written description. Sorting photographed activities is beneficial because it facilitates assessment of people with lower literacy levels and prompts recall of activity engagement which supports assessment of individuals with cognitive impairment (Baum, 1995; Baum & Edwards, 2001). The ACS has three formats (institutional, recovering and community living) which use the same 89 activity cards but involve sorting into different categories (Baum & Edwards, 2008). For example, the community living ACS version (Form C) uses the sorting categories: *never done; not done since age 60; do now; do less;* and *given up*. Categorization enables the calculation of scores for current activity, activities done previously and activity retained. In all three ACS formats, individuals are asked to identify the five activities they consider most important as a guide for intervention (Baum & Edwards, 2001).

The 89 ACS cards have been classified under the four domains of: instrumental activities of daily living (IADL) defined as those ‘necessary to maintain self and property’; social activities (SC) and both high demand leisure activities (HDL) that ‘require physical endurance’ and low demand leisure activities (LDL) that ‘do not demand high physical strength and endurance’ (Baum & Edwards, 2008, p.5). Sachs and Josman (2003) undertook a factor analysis to identify domains for the Israeli ACS. ACS domain classifications are particularly useful for research purposes (Everard, Lach, Fisher & Baum, 2000). The internal consistency of domains has been found to be fair to good. For example, Katz et al (2003) examined internal consistency in the Israeli ACS (using Cronbach’s alpha) for each domain and reported high internal consistency for IADL (.83) and social-cultural (.80) domains and fair internal consistency for LDL (.66) and HDL (.61). Internal consistency of the US ACS was examined by Everard et al (2000) who reported lower Cronbach’s alpha coefficients for IADL (.71) and Social activities (.77) compared with the Israeli version, but higher levels of internal consistency for LDL (.71) and HDL (.85).

Further reliability studies have been undertaken for several ACS versions; for example, Baum and Edwards (2008) reported intra-class correlations (ICCs) of 0.79 for 2-week test-retest reliability for the total ACS Current Activity Score, and domain ICCs ranging from 0.71 for HDL to .89 for IADL. When compared to other versions, higher levels of 2-week test-retest reliability (ICC 0.98, with a 95% confidence interval of 0.97 – 0.99) have been obtained for the ACS-HK (Chan et al., 2006). Hamed and Holm (2013) reported that the A-ACS demonstrates good test-retest reliability (r = 0.80, p < 0.00) over a period of one month. Construct validity was established in the Israeli ACS which was shown to differentiate activity participation levels across five groups: adults, older adults, caregivers, and people with stroke or multiple sclerosis (Katz et al., 2003).

The challenge for test developers is ‘striking a balance between the emic perspective (seeking equivalence within the culture) and the etic perspective (maintaining comparability)’ (Alegria et al., 2004, Discussion, paragraph 3). Therefore, the methods used to develop other ACS culturally relevant versions were reviewed to inform this study’s methodology. Researchers aimed to produce a measure that included activities culturally relevant to UK older people and that replicated the ACS’ Q-sort, sorting categories and scoring method. Researchers have employed several different methodologies to generate culturally relevant ACS items which have been summarised by Eriksson et al (2011). The authors contacted Dr Carolyn Baum (author of the original ACS) who provided recommendations for methodology. These had also informed the development of the ACS-Australia (Packer, et al., 2008). To generate an ‘exhaustive and inclusive list of potential items’ (p. 201) for the ACS-Australia items were selected from the ACS (Baum and Edwards, 2001), the Israeli ACS (Katz et al, 2003) and secondary data drawn from two Australian time-diary studies. For item selection, a sample of older people (n = 57) was consulted using a two-round Delphi Survey Method to rate 114 generated activities on a five point scale (0 = no one does this activity to 4 = most people do this activity). In Round 2 a sample (n = 54) reviewed the ranked list of 114 activities and ‘were given the opportunity to make changes to the ranking of any item’ (Packer, et al., 2008, p.203). Researchers initially set a cut-off of 2 (on their 5 point scale) for inclusion of items, but later adjusted this to a cut-off of 1.75 to include an additional 10 items, resulting in 78 ACS-Australia activities.

The development of culturally sensitive ACS versions is now enabling cross-cultural research. For example, complied ACS data from well elderly samples (total *N* = 468) has enabled a cross-cultural comparison of older people’s participation (Eriksson et al., 2011). One hundred and five different ACS items were identified across eight ACS versions (not including the A-ACS), of these: 10 activities were identified as ‘central activities’ for older people in all eight countries; 16 activities were identified as ‘Central Asian Activities’; and 18 activities as ‘Central Western Activities’. Cross-cultural research can provide valuable findings but culturally relevant measures which maintain equivalence are needed for this purpose (Alegria, et al., 2004). Eriksson et al. (2011) offer their cross cultural description as ‘a starting point for further exploration of everyday occupations among older adults’ (p. 182). In order to contribute a UK perspective to this description a UK version of the ACS is required.

**Method**

**Item generation**

Item generation for the ACS-UK involved three elements. Initially, activities were drawn from the most empirically robust versions of the ACS (Australia, Packer et al., 2008; Hong-Kong, Chan et al., 2006; Israel, Katz et al., 2003; and US, Baum & Edwards, 2001; 2008). A literature search of peer-reviewed research published in the last decade identified three time-use studies involving samples of UK older people (Ball, Corr, Knight, & Lowis, 2007; Chilvers, Corr, & Singlehurst, 2010; Knight et al., 2007), which provided further potential ACS-UK activity items. Where similar wording for items from different sources existed, consensus as to the similarity of intent and agreement on relabeling, reduction, and selection was achieved through discussion of the two authors. Finally, the expert opinions of two occupational therapy researchers were sought to review the generated items and determine, from their clinical and research experience with older UK clients, if any activities were missing. This process generated a total of 125 potential ACS-UK activity items.

**Item selection and reduction**

Item selection and reduction was achieved through consulting a sample of people aged 65 years and over to determine the most common activities for this age group in the UK. A survey-based design was employed using a two-round mixed-method approach. Round 1 comprised an activity participation questionnaire (postal or on-line survey); Eriksson et al., (2011) reported that a questionnaire was also used in the Netherlands, during the development of the Dutch ACS, to seek data on the activities commonly performed by older adults. Following analysis of Round 1 data, Round 2 involved a further activity participation questionnaire completed either individually (postal or via interview) or in small focus groups. Chan et al., (2006) used a panel comprising a convenience sample of 15 community dwelling older adults to evaluate ‘whether the activities on the comprehensive list reflected those in which Hong Kong older adults typically participate’ (p. 154).

**Participants**

Inclusion criteria for both Rounds 1 and 2 were: people aged 65 years or older; living in the community; and able to communicate in English. Views were sought from healthy older people whose activity levels were not restricted by illness or disability. Therefore, individuals were excluded if they were receiving care from social or national health services (other than routine general practitioner care, e.g., annual flu vaccination). A challenge related to the development of a UK culturally relevant measure was that the UK comprises four countries (England, Scotland, Wales and Northern Ireland) and the UK’s population is not culturally homogenous. Participant recruitment was, therefore, sought from all four countries and intended to reflect UK census data regarding ethnicity (Office for National Statistics, 2001). According to the 2001 Census the total UK population comprised: White (92.1%); mixed race (1.2%); Indian (1.8%); Pakistani (1.3%); Bangladeshi (0.5%); Other Asian (non-Chinese); 0.4%, Black Caribbean (1.0%); Black African (0.8%); Black – others (0.2%); Chinese (0.45); and Other (0.4%). To achieve this, Round 1 participants were recruited: via convenience sampling through personal and professional contacts; via purposive sampling using website-advertised older people groups; and via snowball sampling. Round 2 participants were recruited from an area near to the authors’ university via convenience sampling using contacts gained in Round 1 and poster advertisements. The desired sample size was established through review of previous ACS development studies and was set at150 people. Eriksson et al., (2011) reviewed studies related to eight ACS versions and reported sample sizes of well elderly ranging from 60 to 100 participants. Whilst developing the A-ACS, Hamed et al (2011) recruited 156 Jordanians from different age groups. Ethical approval was granted by the Research Ethics Committee at XXXXXXX. All potential participants were asked to read an information sheet that explained: the research purpose; participants’ rights to refuse to take part and to withdraw from the study; storage of data; destruction of raw data on completion of the study; the proposed dissemination of results; and that their identity would not be revealed in disseminated work. Participants were allocated a subject number for data analysis to ensure anonymity. Prior to completing the questionnaire, interview or focus group, participants were asked to answer five questions relating to the participant inclusion / exclusion criteria and to indicate their consent.

**Round 1: Activity Participation Questionnaire - Procedures and instrument**

A three section questionnaire was devised to identify UK older people’s most common activities. The first section comprised 125 activity items to assess level of activity participation over the past year rated on a 5-point ordinal scale: 1 = *at least once a day;* 2 = *at least once a week;* 3 = *at least once a month;* 4 = *at least once a year;* 5 = *never* [Reversed]. Items were reverse measured because authors felt that placing the most frequently occurring rating at the beginning of the scale would minimise participant burden during completion. The second sectioninvited participants to suggest and rate their participation in up to five additional activities. Participants completed demographic questions in the third section so authors could establish whether the sample included people from the four UK countries, represented the UK population for ethnicity, and was evenly distributed in terms of age, gender and level of education. Demographic questions sought data on: gender; marital status; age; place of birth; current place of residence (identified to the nearest UK town or city); number of years resident in the UK; highest level of education achieved; and ethnicity. The current age at which people are eligible for a State Pension in the UK is age 65 years for men and 60 years for women (Pensions Advisory Service, 2013), however, not all people choose to retire at these ages, therefore, a question was added relating to participants’ retirement / work status. A pilot survey with a convenience sample (*N* =10) was recruited to review the utility of the questionnaire. Two modifications resulted: broadening the employment status category to include a homemaker role; and qualification of the activity item ‘taking a rest’ to ‘taking a rest: sitting or lying down’. Participants voluntarily completed the questionnaire during their own free time via hard copy or e-survey using an on-line survey tool (SurveyMonkey, 2012). Stamped addressed envelopes were provided for the return of postal questionnaires to increase the response rate (Edwards et al., 2002).

Means and standard deviations were calculated for each activity item to examine frequency levels and variance across the sample and items were then ranked by mean frequency. A cut off level was set to select the most common items for inclusion in the ACS-UK. This was set at a mean value < 2, in accordance with the procedures adopted by Baum and Edwards (2001) and Packer et al., (2008). A balance was sought between selecting sufficient culturally relevant activities to fully address the areas of participation relevant to the majority of older people residing in the UK whilst producing a test that would not be too lengthy to administer. The time required for administration of the ACS-UK was an important consideration for clinical utility. For example, [Alotaibi, Reed & Nadar](javascript:__doLinkPostBack('','ss%7E%7EAU%20%22Alotaibi%20NM%22%7C%7Csl%7E%7Erl','');)  (2009) reported that more than a third of occupational therapists chose assessments based upon clinical utility, including time efficiency. In the development of other ACS versions generated items have been reviewed and either excluded or collapsed into activity groupings to achieve a clinically useful measure. The number of items in different versions of the ACS ranges from 65 (ACS-HK; Chan, et al., 2006) to 89 items (ACS; Baum & Edwards, 2008) and authors for both these versions have reported that on average the ACS and the ACS-HK take around 20 minutes to complete.

**Round 2 - Procedures and instrument**

Round 2 was conducted for several reasons: 1) to consider the additional activities provided by respondents in Round 1 and establish if these new activities would be relevant to the wider UK older population; 2) to review activity items from Round 1 that fell close to the cut-off level; 3) to review the wording of activity items to ensure clarity; and 4) to consider the domain categorisation of activities. An activity participation questionnaire was used both as a stand-alone measure and as a semi-structured framework for focus groups. The questionnaire contained the same demographic information section adopted in Round 1. Twenty new activities were identified by participants in Round 1 so the Round 2 activity list comprised 145 items. Participants were asked to reflect on activities undertaken by themselves, their family, friends and acquaintances in order to indicate how common they thought each activity was for older people living in the UK. Perceived participation was rated on a 5-point ordinal scale (0 = *no-one does this activity* to 4 = *most people do this activity*) as recommended by Baum (personal communication) and adopted by Packer et al., (ACS-Australia; 2008) and Hamed et al., (A-ACS; 2011).

Focus groups were conducted by three occupational therapy researchers trained in interview skills. Hamed et al. (A-ACS; 2011) also used three occupational therapists trained to interview their participants regarding the ‘commonality of the activities in the Jordanian community’ (p. 302). Focus group discussion was audio-recorded and transcribed verbatim. One focus group was conducted as an individual interview (owing to drop-out related to illness and care-giver commitments). The three other focus groups had between two to three individuals per group. The length of group discussion varied from 60 to 90 minutes. Participants rated each of the 145 items and commented on the clarity of the activity descriptions and classification of activity items in the four domains (IADL, HDL, LDL and SC).

**Results**

The demographic characteristics of Round 1 (N = 177) and Round 2 (N = 21) samples are provided in Table 1. Of the 21 participants in Round 2, 13 people completed the questionnaire during their own time via hard copy, one was interviewed and seven took part in semi-structured focus groups. The Round 1 sample was larger than the minimum sample size of 150 identified at the start of the study and is the largest sample obtained for the initial development of any version of the ACS to date. The Round 2 sample was larger than that used by Chan et al., (2006) for their panel of community-dwelling older adults (n = 15) during the development of the ACS-HK. Two participants in Round 2 also participated in Round 1, therefore, a combined total of 196 older people contributed to the development of the ACS-UK; this was considered an adequate sample size.

Means and standard deviations were calculated for all items to determine (a) the most common activities that UK older people had participated in over the past year (Round 1); and (b) the most common activities perceived for UK older people (Round 2). Activity items with mean values of < 2.0 (the equivalent of participating ‘less than once a year or never’ in Round 1 or ‘Rare or no participation’ in Round 2) were considered for removal. Table 2 lists the activities ranked above this cut-off point at the end of Round 2 and Table 3 (available as supplemental material in the PDF version of this article) lists the activities ranked above this cut-off point at the end of Round 1. Eight of the 20 activities identified as additional potential activity items in Round 1 obtained means above 2 in Round 2. These were: voting; travelling; cultural visits (which encompassed visits to National Trust or English Heritage sites, castles and country houses); attending a hobby / leisure activity group; attending a social group; researching local history; performing charitable acts; and attending a night class / adult education group (identified by an \* in Table 2).

During Round 2 a number of activities were identified that either needed rewording or participants thought could be combined with other activities to reduce the number of items (identified in bold in Table 2). Participants suggested items that could be encompassed under broader headings, for example: ‘Paying household bills’ is an element of ‘Managing Financial matters’; ‘Walking the dog’ is an aspect of ‘Taking care of pets;’ and ‘Going to family gatherings’ was removed as it was considered to be included in other items, such as ‘Spending time with family / friends’, ‘Going to Parties’ or ‘Attending celebrations / ceremonies’. Participants advised several items could be combined, for example: ‘listening to radio / music’; ‘Maintaining the garden / tending your allotment’; ‘Going on holiday / travelling’; and ‘Researching family / local history.’ In one case an item ‘Gambling’ (which included playing the lottery, bingo, placing a bet, and going to a casino) was considered too broad and was expanded to form two separate items: ‘Gambling’ and ‘Playing Bingo’. Where activities could be eliminated in one round and not the other, item standard deviations were reviewed to consider variance, focus group transcripts were consulted and the authors considered societal trends which may impact older people’s activities in future. For example, working in paid employment was included in the ACS-UK because of planned increases in retirement age for UK employees (The Pensions Act 2011). Fishing was included because Round 2 participants indicated it was salient to the older UK male population; as both samples contained a higher proportion of female participants there was a possibility data might not have adequately represented a male perspective. The item ‘Dating / companion seeking’ was included owing to research that projects a significant increase in internet-based social networking amongst adults (Stroud, 2008). A total of 91 items were included in the final version of the ACS-UK (See Table 4: available as supplemental material in the PDF version of this article).

The 145 items were initially classified by the authors following Round 1 under the four domains used by Baum and Edwards (2001; 2008; i.e. IADL, LDL, HDL and SC). These categorisations were then explored with participants during Round 2. The 91 finalised ACS-UK items were categorized as follows: 27 instrumental activities of daily living; 25 low demand leisure; 15 high demand leisure; and 24 social / cultural activities. Like the ACS (Baum & Edwards, 2008), the ACS-UK will comprise institutional, recovery and community living forms. Researchers tried to balance making the ACS-UK comparable to the other nine ACS versions to facilitate multi-cultural research whilst also considering changes to address identified limitations.Following administration of the original ACS (Baum & Edwards, 2008) with older people with dementia and their care-givers, the first author and a group of occupational therapy students identified a number of potential modifications. An additional comments column (for therapists to record qualitative responses) has been added to ACS-UK forms. As some potential activity items (that did not meet cut-off levels) were excluded, five additional activity item rows can be used for clients to identify and rate any personally meaningful activities not captured by the core 91 ACS-UK items. Allowing for additional items and comments to be captured strengthens the client-centred nature of this instrument and further supports intervention planning. A new column to record when a client does ‘more’ of an activity has been included on the ACS-UK forms.

**Discussion**

Ninety-one activities were common to an older adult UK population and included as ACS-UK items. The ACS-UK has seven items not included in other ACS versions, these activities are: being on a committee; voting; keeping a diary / calendar of events; relaxing / meditating; attending a leisure / hobby group; going for drinks at pubs / social clubs; and attending a night class / adult education group. It is unlikely that these activities are unique to older people in the UK; voting, for example, should be applicable to older people in other democratic countries. As literature on other ACS versions does not comprehensively detail activities that have not met the cut-off criteria for inclusion it is not possible to establish whether these seven ACS-UK items have been considered for inclusion in any other ACS versions. ACS versions do not attempt to include an exhaustive number of activities, but rather activities that are the most common within a specific culture. Therefore, it appears that UK older people participate more frequently in these seven activities than older people in countries where other ACS versions have been developed. In both the ACS (Baum & Edwards, 2008) and A-ACS (Hamed et al, 2011) there is a ‘Dating / spending time with friends’ item, however, results from this study led to ‘spending time with friends’ being grouped with ‘spending time with family’ (ACS-UK item ‘Spending time with Family / Friends’) whilst dating or seeking a companion was seen by UK participants as a different activity and forms a separate ACS-UK item: ‘Dating / Companion seeking’.

The ten ACS activities identified as central to older people by Eriksson (2011) have also been included in the ACS-UK and six of these match exactly (‘Doing laundry’, ‘Food / grocery shopping’, ‘Sitting and thinking’, ‘Talking on the telephone’, ‘watching television’, and ‘listening to radio / music’). The terminology is different for the seventh activity although the activity is clearly the same (i.e. ‘Doing dishes’ is termed ‘Washing up’ in the ACS-UK). The other two activities appear closely related to those identified by Eriksson et al., ‘Shopping in a store’ compares to the ACS-UK item ‘Shopping for clothes / shoes’ and ‘Visiting with friends / relatives’ equates to the ACS-UK ‘Spending time with friends / family’ item . The ACS (Baum & Edwards, 2008) item ‘Reading magazines / books’ was separated into two items for the ACS-UK following feedback from people with dementia (Laver-Fawcett, 2012) who found this combined activity item difficult to categorize; they explained that owing to short term memory problems they were unable to remember the plot or characters required to read books, but were still able to read magazines.

Sixteen of the 18 ‘Central Western Activities’ identified by Eriksson et al. (2011, p.190) are included in the ACS-UK. The two other activities were considered during this study. The item ‘Collecting’ was considered during the item generation stage but UK older people’s participation fell below the cut-off level and it was eliminated. The item ‘Putting together puzzles’ received a mean frequency above the cut-off, but during Round 2 it was collapsed into a combined item ‘Doing Puzzles / Crosswords’. Nine of the 16 ‘Central Asian Activities’ (Eriksson et al, 2011, p. 189) were also selected for inclusion in the ACS-UK, there was some slight variation in terminology used, these activity items were: ‘Car maintenance’ (ACS-UK = Vehicle maintenance); ‘Work’ (ACS-UK= Working in paid employment); ‘Arranging bedding after one night sleep’ (ACS-UK = Making your bed); ‘Sewing’ (ACS-UK= Knitting / Needlecrafts); ‘Going to or being in garden or park’ (ACS-UK = Going to gardens / parks); and ‘Attending community activity’ (ACS-UK = Attending a Social / Community Group). The two items ‘Attending anniversary / wedding / baby shower’ and ‘Attending banquets and celebrations’ appear to relate to the ACS-UK items ‘Attending celebrations / ceremonies’ and ‘Going to Parties’.

In terms of the modifications made to the ACS-UK compared to the ACS forms (Baum and Edwards, 2008), the option to add additional activities could be omitted for research to increase comparability of assessment method across multi-cultural studies. The earlier occupational therapy student study (Laver-Fawcett, 2012) had found that participants described ‘doing more’ of some activities. However, doing more of an activity was not always a positive change, as change can arise when the person is unable to participate in more meaningful activities or takes over an activity previously undertaken by a spouse; for example when widowed or acting as a care-giver. Given that ‘doing more’, could be a negative or positive change, and in order to maintain comparability with other ACS versions, the scoring method as described by Baum and Edwards (2008) is used for the ACS-UK. This means that the ‘do more’ column is not included in the scoring but its inclusion adds useful information for guiding intervention. For example, a client may indicate that since retirement he watches more television and in the comments section the therapist could record that he perceives this negatively.

**Limitations and future directions**

These resultsshould be considered within the context of the study’s limitations. Participants were predominantly drawn from convenience samples and did not fully represent the 2001 census data regarding ethnicity (Office for National Statistics, 2001) as the sample did not include people from Chinese, Black Caribbean, Black African or Black British ethnicities. Furthermore, both samples included more female than male older people (Round 1 = 72.3 % and Round 2 = 57.1% female participants); this might relate to the higher life expectancy of women (European Health Expectancy Monitoring Unit, 2010) and has also been an issue in another ACS development study as the sample in Round 1 of the Australian ACS study (Packer, et al., 2007) comprised 74% female subjects. These could be viewed as limiting factors with regards generalising the findings to a wider UK population and so future studies may want to explore activity participation and engagement in samples with: greater ethnic diversity; individuals experiencing health conditions; and a representative gender distribution. At the development phase, the psychometric properties of the ACS-UK have yet to be established. Future research should examine inter-rater reliability, internal consistency, test-retest reliability, discriminant validity and face validity of the ACS-UK.

In conclusion, the ACS-UK is a culturally relevant measure that provides insight into older people’s participation. It can be used to support client-centred practice and in research to inform policy and provision regarding active ageing. The development of the ACS-UK will allow for data to be collected to add to cross-cultural research exploring the everyday activities of older people.

(Main body 5383 words)

**References**

Albert, S. M., Bear-Lehman, J., & Burkhardt, A. (2009). Lifestyle-adjusted function: Variation beyond BADL and IADL competencies, *Gerontologist, 49,* 767-777.

Alegria A., Vila D., Woo, M., Canino G., Takeuchi D., Vera M., Febo V., Guarnaccia P., Aguilar-Gaxiola S., & Shrout P. (2004) Cultural Relevance and Equivalence in the NLAAS Instrument: Integrating Etic and Emic in the Development of Cross-Cultural Measures for a Psychiatric Epidemiology and Services Study of Latinos. *International Journal of Methods in Psychiatric Research. 13(4)* 270–288. [Online] Available: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2771729/> [Accessed 19th March 2013]

[Alotaibi N](javascript:__doLinkPostBack('','ss%7E%7EAU%20%22Alotaibi%20NM%22%7C%7Csl%7E%7Erl','');)., [Reed K](javascript:__doLinkPostBack('','ss%7E%7EAU%20%22Reed%20K%22%7C%7Csl%7E%7Erl','');)., [Nadar M](javascript:__doLinkPostBack('','ss%7E%7EAU%20%22Nadar%20MS%22%7C%7Csl%7E%7Erl','');). (2009) Assessments used in occupational therapy practice: An exploratory study. *Occupational Therapy in Health Care,*23(4), 302-318.

Ball, V., Corr, S., Knight, J., & Lowis, M. (2007). An investigation into the leisure occupations of older adults. *British Journal of Occupational Therapy 70,* 393-400.

Bannigan, K., & Laver-Fawcett, A. (2011) Aging, occupation and mental health: the contribution of the Research Centre for Occupation and Mental Health. *WFOT Bulletin*, 63, 55-60.

Baum, C. M. (1995). The contribution of occupation to function in persons with Alzheimer’s disease. *Journal of Occupational Science, 2,* 59–67.

Baum, C. M., & Edwards, D. F. (2001). *Activity Card Sort (ACS): Test manual*. St Louis, MO: Penultima Press.

Baum, C. M., & Edwards, D. F. (2008). *Activity Card Sort (ACS): Test manual (2nd Ed).* Bethesda, MD: AOTA Press.

Block J (1961) *The Q-Sort method in personality assessment and psychiatric research.* Springfield: Charles C Thomas Publisher [On-line] Available: <http://abegs.org/sites/Research/DocLib1/أجنبية/The%20Q-Sort%20Method%20in%20Personality%20Assessment%20and%20Psychiatric%20Research.pdf> [18th September 2012].

Chan, W. K., Chung, J., & Packer, T. L. (2006). Validity and reliability of the Activity Card Sort – Hong Kong version. *OTJR:* *Occupation, Participation, and Health, 26,* 152–158.

Chilvers, R., Corr, S., & Singlehurst, H. (2010). An Investigation into the Occupational Lives of Healthy Older People through their Use of Time. *Australian Occupational Therapy Journal, 57,* 24-33.

Clark F, Jackson J, Carlson M, Chou C-P, Cherry BJ, Jordan-Marsh M, et al (2011) Effectiveness of a lifestyle intervention in promoting the well-being of independently living older people: results of the Well Elderly 2 Randomized Controlled Trial.*Journal of Epidemiology and community Health 66*(9) 782-90**.** doi:10.1136/jech.2009.099754

Doney R. M., & Packer T. L. (2008). Measuring changes in activity participation of older Australians: Validation of the Activity Card Sort–Australia. *Australasian Journal on Ageing, 27,* 33–37.

Edwards, D. F., Hahn, M., Dromerick, A. W., & Baum, M. C. (2005). Race differences in function and quality of life in mild stroke. *Stroke*, *36*, 480.

Edwards, P., Roberts, I., Clarke, M., DiGuiseppi, C., Pratap, S., Wentz, R., Kwan, I. (2002) Increasing response rates to postal questionnaires: systematic review. *British Medical Journal, 324,* 1183. [Online] doi: http://dx.doi.org/10.1136/bmj.324.7347.1183

Eriksson, G. M., Chung, J. C. C., Beng, L. H., Hartman-Maeir, A., Yoo, E., Orellano, E. M., van Nes, F., DeJonge, D., & Baum, C. (2011). Occupations of older adults: A cross cultural description. *OTJR: Occup, Partcip, Health., 31*(4) 182-92.

European Health Expectancy Monitoring Unit (EHEMU; 2010) Health Expectancy in the United Kingdom. EHEMU Country Reports. issue 3. Available from: [http://www.statistics.gov.uk/hub/release-calendar/index.html?newquery=\*&title=Stroke+Statistics+update&pagetype=calendar-entry&lday=&lmonth=&lyear=&uday=&umonth=&uyear](http://www.statistics.gov.uk/hub/release-calendar/index.html?newquery=*&title=Stroke+Statistics+update&pagetype=calendar-entry&lday=&lmonth=&lyear=&uday=&umonth=&uyear)= [accessed 17th March 2013].

Everard, K. M., Lach, H. W., Fisher, E. B., & Baum, M. C. (2000). Relationship of activity and social support to the functional health of older adults. *Journal of Gerontology: Social Sciences, 55B,* S208-S212.

Hamed R., AlHeresh R., Abu Dahab S., Collins B., Fryer J., & Holm M.B. (2011). The Development of Arab Heritage Activity Card Sort (A-ACS). *International Journal of Rehabilitation Research 34* (4), 299-306.

Hamed, R., & Holm M.B., (2013) Psychometric Properties of the Arab Heritage Activity Card Sort. *Occupational Therapy International, 20*, 23-34.

Kalldalen A, Marcusson J & Wressle E (2013) Interests among older people in relation to gender, function and health related quality of life. *British Journal of Occupational Therapy, 76* (2), 87-93.

Katz, N., Karpin, H., Lak, A., Furman, T., & Hartman-Maeir, A. (2003). Participation in occupational performance: Reliability and validity of the Activity Card Sort. *OTJR: Occupation, Participation, and Health, 23,* 10–17.

Kessler D & Egan M (2012) A review of measures to evaluate participation outcomes post-stroke. *British Journal of Occupational Therapy*, *75*(9) 403-411.

Kielhofner, G. (2002). A model of human occupation: Theory and application (3rd ed.). Hagerstown, MD: Lippincott Williams & Wilkins.

Knight, J., Ball, V., Corr, S., Turner, A., Lowis, M., & Ekberg, M. (2007). An empirical study to identify older adults' engagement in productivity. *Journal of Occupational Science, 14,* 145-153.

Laver-Fawcett, A. (2012) Activity Card Sort – Letter to the Editor. *British Journal of Occupational Therapy*, *75* (10) 482.

Law M (2013) Editorial: Participation in occupations across the lifespan. *British Journal of Occupational Therapy, 76(2),* 49.

Office for National Statistics (2001) 2001 Census: Ethnicity and Identity. [On-line] Available: <http://www.statistics.gov.uk/cci/nugget.asp?id=455> [13th March 2010].

Orellano, E. (2008). *Occupational participation of older Puerto Rican adults: Reliability and validity of a Spanish version of the Activity Card Sort.* PhD Dissertation, Nova Southeastern University, Montana.

Packer, T. L., Boshoff, K., & DeJonge, D. (2008). Development of the Activity Card Sort – Australia. *Australian Occupational Therapy Journal, 55,* 199–206.

Packer, T., Girdler, S., Boldy, D., Dhaliwal, S., & Crowley, M. (2009). Vision self-management for older adults: a pilot study. *Disability & Rehabilitation*, *31*, 1353-1361.

Pensions Advisory Service [Online] Available: *State Pensions Age Calculator.* <http://www.pensionsadvisoryservice.org.uk/state-pensions/state-pension-age-calculator>? [19th March 2013].

*Pensions Act 2011.* (UK) Part 1.1: Equalisation of and increase in pensionable age for men and women. [On-line]. Available: <http://www.legislation.gov.uk/ukpga/2011/19/contents/enacted> [10th September 2012].

Sachs, D. & Josman, N. (2003). The Activity Card Sort: A factor analysis. *OTJR: Occupation, Participation and Health, 23,* 165-174.

Spitzer, J., Tse, T., Baum C.M., & Carey, L. M. (2011). Mild Impairment of Cognition Impacts on Activity Participation after Stroke in a Community-Dwelling Australian Cohort. *OTJR: Occupation, Participation and Health*, 31 (1), S8-S15.

Stroud, D. (2008). Social networking: An age-neutral commodity: Social networking becomes a mature web application. *Journal of Direct, Data and Digital Marketing Practice 9,* 278-292.

SurveyMonkey (2012) *Surveys Made Easy* [On-line] Available: <http://www.surveymonkey.com/mp/take-a-tour/> [18th September 2012].

World Health Organisation (2012). *10 Facts on Ageing and the life course.* [Online], Available: http://www.who.int/features/factfiles/ageing/en/index.html [7th September 2012].