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Assessing the validity and reliability of the Pool Activity Level (PAL) Checklist for use with older people with dementia

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Introduction

The urge to engage in purposeful activity is a basic human need – necessary both for survival and to maintain physical and mental health and well-being. However, the normal ageing process and the impact of certain conditions, such as dementia, inevitably affect a person’s ability to engage in activity. Inactivity can have a detrimental effect on physical and mental health and, thereby, quality of life (Mozley et al., 2004). Participating in activities may reduce the frequency and severity of: depression; challenging behaviour; falls; and dependency of older people with dementia living in care homes (Mozley, 2001). The level of inactivity within care homes has been documented over the past fifty years (Challis et al., 2000; Godlove, Richard, Rodwell, 1982; Mozley et al., 2004; Nolan, Grant, & Nolan, 1995; Schneider et al., 1997; Townsend, 1962; Wilcocks, Peace, & Kellaher, 1987) but still remains unacceptably high. A multi-centre trial found daytime activities were an unmet need for 76% of residents with dementia (Hancock, Woods, Challis, & Orrell, 2006).

A number of factors can contribute to lack of activity. For example, the layout and design of the physical environment may hinder participation in activity (Brawley, 2001; Powell Lawton, 2001). Task focused care regimes plus poor staffing levels may impact on the priority given to activity provision (Challis et al., 2000; Green & Acheson Cooper, 2000).

Activity is key to maintaining physical and mental health and well-being. However, as dementia affects the ability to engage in activity, care-givers can find it difficult to provide appropriate activities. The Pool Activity Level (PAL) Checklist guides the selection of appropriate, personally meaningful activities. The aim of this study was to assess the reliability and validity of the PAL Checklist when used with older people with dementia. A postal questionnaire sent to activity providers assessed content validity. Validity and reliability were measured in a sample of 60 older people with dementia. The questionnaire response rate was 83% (102/122). Most respondents felt no important items were missing. Seven of the nine activities were ranked as ‘very important’ or ‘essential’ by at least 77% of the sample, indicating very good content validity. Correlation with measures of cognition, severity of dementia and activity performance demonstrated strong concurrent validity. Inter-item correlation indicated strong construct validity. Cronbach’s alpha coefficient measured internal consistency as excellent (0.95). All items achieved acceptable test-retest reliability, and the majority demonstrated acceptable inter-rater reliability. We conclude that the PAL Checklist demonstrates adequate validity and reliability when used with older people with dementia and appears a useful tool for a variety of care settings.

Keywords: activity; assessment; care homes; dementia

A common perception is that activity provision is something special that happens only at specified times, often provided by someone additional to the care staff (Archibald, 1999). Occupational opportunities may be integrated into daily care provision, but care staff often lack the necessary knowledge and skills to put this into action (Beck, 2001; Perrin, 1997). Expertise is also required to communicate with, engage and motivate residents; and to select, adapt and present appropriate and meaningful activities to people, especially people with the complex combination of impairments and needs resulting from dementia.

Two key aspects of effective activity provision are: the identification of activities that are personally meaningful to the individual through life history work; and knowing the individual’s current level of ability to engage in activity. The care-giver can then select a personally meaningful activity and present it at a level appropriate to the individual’s ability. Whilst a number of assessment tools do exist to evaluate an individual’s ability to engage in activity, these are occupational therapy-specific. Examples include the Allen’s Cognitive Levels Screen (ACLS: Earhart, Pollard, Allen, & David, 2003) and the Assessment of Motor and Process Skills (AMPS: Fisher, 2003).

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provision, they need a quick and easy to use an assessment tool that has good psychometric properties.

The Pool Activity Level (PAL) Instrument (Pool, 1999) was published as part of the Bradford Dementia Group Good Practice Guide series. It was developed by Jackie Pool, an occupational therapist, at the request of the late Tom Kitwood. He sought a practical resource for carers of people with dementia, to assess and enable their engagement in meaningful occupation. Pool used the underpinning theory from the Cognitive Disability Model (Allen, Earhart, & Blue, 1992), later refined and renamed the Functional Information Processing Model (Allen, 1999). This occupational therapy model outlines six cognitive levels, each of which is described in terms of the limitations and abilities observed within behavioural patterns whilst undertaking everyday tasks. The levels span from six, where functioning is normal, to one where the person is profoundly impaired.

Pool aimed to enable those who assist a person with dementia to identify and capitalise on the individual’s abilities as well as assisting with their needs. A Checklist to identify the level of ability and a Profile to guide the care-giver in engaging and enabling the person was developed. Early in its development, the Checklist was implemented in a variety of care settings for people with dementia, including a continuing care hospital ward; five social services residential care homes; and in a mental health NHS Trust providing services to people with dementia on an assessment ward and living in the community. Care workers, including nurses, occupational therapists, support workers and activity providers were guided to use the Checklist and Profile in their assessment and care planning. Following feedback, the tool was refined and the first edition published (Pool, 1999). Following further users’ feedback, a second edition containing additional refinements was published (Pool, 2002). The Pool Activity Level (PAL) Instrument (Pool, 2002) comprises a number of sections, including the PAL Checklist. It is widely used in community, day care and care home settings throughout the UK and is recommended in the National Clinical Practice Guideline for Dementia (NICE, 2006) as an instrument to guide providers of daily living and leisure activities.

The aim of the present study was to assess the validity and reliability of the PAL Checklist when used with older people who have dementia.

Methods

Study design

The study comprised two phases. Phase 1 used a postal questionnaire to assess content validity of the PAL Checklist. Phase 2 assessed the criterion, concurrent and construct validity; internal consistency; and inter-rater and test-retest reliability of the PAL Checklist in a sample of older people receiving specialist mental health services for people with dementia.

Phase 1 – content validity

The postal questionnaire was circulated to three groups: (1) the College of Occupational Therapists Specialist Section – Older People’s Dementia Clinical Forum; (2) The National Association for Providers of Activities for Older People; and (3) other experts, primarily occupational therapists and activity providers. Respondents were asked to state their professional background, whether they had previously used the PAL Checklist and, if so, in what type of setting: ward/day service/person’s home/care home? The following questions were asked: ‘Are any important items missing?’, ‘Are any items redundant?’, and ‘Are the instructions clear?’ Each question required a yes or no response and space was provided for comments. Finally, respondents were asked, ‘How easy or difficult do you think it is to complete the PAL Checklist?’ and given four options from which to choose: very difficult/quite difficult/quite easy/easy. Respondents were asked to rank the importance of each of the nine Checklist items using a four-point scale, when 1 = not important; 2 = quite important; 3 = very important; and 4 = essential. The frequency and percentage of responses for each questionnaire item was recorded and the data analysed using descriptive statistics in order to evaluate content validity.

Phase 2 - validity and reliability

A range of specialist services for people with dementia, provided by a NHS Mental Health Trust were approached by mail and then a telephone call by JW, in order to recruit 60 older people with dementia. These services comprised: two day hospitals, four admission/assessment in-patient wards and two units providing continuing care. Participants had to: be aged 60 years or over; have received the service for at least two weeks (or four visits in the case of the two day hospitals); meet the DSM-IV (American Psychiatric Association, 1994) diagnostic criteria for dementia; and score less than 24 on the Mini Mental Status Examination (MMSE: Folstein, Folstein, & McHugh, 1975). Information Sheets were provided and consent obtained directly from participants if possible. For those people unable to sign a consent form, their participation was discussed with relatives (if applicable) and relevant nursing or care staff (unit manager or keyworker) to ensure their best interests were represented. Participants’ general practitioners were informed of their inclusion within the study. Ethical approval was granted by the NHS Barking & Havering Local Research Ethics Committee, reference number: 05/Q0602/8.

Instruments

The pool activity level checklist

The PAL Checklist is a carer-rated instrument that identifies the level of cognitive ability that an
individual has to engage in activity. There are four activity levels: planned, exploratory, sensory and reflex (see Table 1).

The PAL Checklist (see Appendix 1) covers nine everyday activities: bathing/washing; getting dressed; eating; contact with others; groupwork skills; communication skills; practical activities (for example: craft, domestic chores, gardening); use of objects; and looking at a newspaper/magazine. Four descriptive statements are provided for each activity. The carer ticks the one that most accurately describes the individual’s performance of that activity over the preceding two weeks. The number of statements selected for each level is totalled and the highest ‘scoring’ one indicates the individual’s activity level. In practice, no score is recorded, just the activity level. However, to enable statistical analysis, the PAL Checklist data were entered into the SPSS database using the following nominal values: 1 = planned; 2 = exploratory; 3 = sensory; and 4 = reflex.

The PAL Instrument includes an Activity Profile for each activity level. These profiles outline the likely abilities and limitations of a person at that activity level. They also provide guidance to carers on how best to engage and enable an individual at that activity level. For example, the optimal positioning of tools, verbal instructions and non-verbal directions are described. This information can guide carers to present personally meaningful activity (as identified through completion of the PAL Personal History Profile) at an appropriate level of challenge or ‘fit’.

Mini mental state examination

The MMSE is a well-known cognitive screening test frequently used in clinical and research settings. Validity, test-retest and inter-rater reliability were established by the original authors (Folstein et al., 1975) and have been further reviewed by Tombaugh & McIntyre (1992). The maximum score of 30 indicates no cognitive impairment. A negative correlation between the MMSE score and the PAL activity level was predicted.

Clinical dementia rating scale

The Clinical Dementia Rating Scale (CDR: Hughes, Berg, Danziger, Cohen, & Martin, 1982) is a global rating of the severity of dementia. Inter-rater reliability has been established (Berg, Miller, & Storandt, 1988; Hughes et al., 1982). The Chronic Care Version includes two further categories of severity: profound and terminal and was therefore used in this study in order to cover the range of service settings included. The lowest possible score of 0 indicates no evidence of dementia. A positive correlation between the CDR score and the PAL activity level was predicted.

Barthel index

The Barthel Index (BI: Mahoney & Barthel, 1965) measures functional ability and the degree of assistance required (physical and/or verbal) in ten daily living activities. The score indicates the individual’s level of dependency. Validity, inter-rater and test-retest reliability and sensitivity have been assessed as being excellent (Wade & Collin, 1988). The activities assessed by both the BI and the PAL Checklist are: bathing/washing, getting dressed and eating. The maximum score of 100 indicates independence in daily living activities. A negative correlation between the total BI score and the PAL activity level was predicted.

Bristol activities of daily living scale

The Bristol Activities of Daily Living Scale (BADLS: Bucks, Ashworth, Wilcock, & Siegfried, 1996) is a carer rated scale comprising 20 items. It was developed...
specifically for use with people with dementia. Face, construct and concurrent validity, and test-retest reliability have been confirmed (Bucks et al., 1996). The activities assessed by both the BADLS and the PAL Checklist are: bathing/washing, dressing, eating, communication and participation in activities. The lowest possible score of 0 indicates independence in daily living activities. A positive correlation between the overall BADLS score and the PAL activity level was predicted.

Clifton assessment procedures for the Elderly – Behaviour Rating Scale

The Clifton Assessment Procedures for the Elderly – Behaviour Rating Scale (CAPE-BRS: Pattie & Gilleard, 1979) is a carer-rated scale that assesses a range of daily living activities and behaviours in order to indicate the individual’s level of dependency. Four sub-sections consider: physical dependency, apathy, communication difficulties and social disturbance. The activities assessed by both the CAPE-BRS and the PAL Checklist are: bathing, dressing, eating, communication and participation in activity, socialising and communication. The lowest possible score of 0 indicates independent function. A positive correlation between the overall CAPE-BRS score and the PAL activity level was predicted.

Assessing validity

Data were gathered, within the service settings, by one of three raters: JW, JB and NE. The MMSE was completed with the participant with dementia. A member of the nursing or care staff was interviewed regarding each participant and asked to complete the PAL Checklist. Their reported observation of how the individual had actually behaved over the preceding two weeks, together with information obtained from the care plan, enabled the rater to complete the other instruments. Criterion validity was assessed by comparing the PAL activity levels by service setting. It was predicted that the day hospital attendees (who were still living in the community) would achieve a higher PAL activity level, i.e. planned or exploratory, than those living in continuing care. An inter-item correlation matrix was used to evaluate construct validity. It was anticipated that the highest correlation would be between the following sets of activities: (1) bathing, dressing, practical activities, use of objects and looking at a newspaper, as these rely on recognising and using objects appropriately and in the correct sequence; and (2) contact with others, groupwork and communication, as these all depend on interacting and communicating with others. Concurrent validity was tested by correlating the PAL Checklist results with data obtained using the other instruments. There is no relevant ‘gold standard’ instrument against which to directly compare the PAL Checklist, i.e. a generic, quick and easy to use tool that assesses an individual’s level of ability to engage in activities. Instruments were therefore selected as they either: assess key factors that influence the ability to engage in activity, such as the severity of dementia (CDR) and degree of cognitive impairment (MMSE); or the ability to carry out specific activities that are also assessed by the PAL Checklist (BI, BADLS, CAPE-BRS).

Assessing reliability

Inter-rater reliability was assessed by completing the PAL Checklist with another staff member on the same day. Staff were asked not to confer with colleagues. Test-retest reliability was assessed by repeating the PAL Checklist with the first staff member approximately a week later.

Results

Phase 1

In total, 122 questionnaires were circulated to potentially eligible participants. One-hundred-and-two completed questionnaires were received, representing a response rate of 84%. Fifty-five (54%) respondents had previously used the PAL Checklist and forty-seven (46%) had not. Of those who had used the instrument, 25 (45%) had used it in a ward; 20 (36%) in a day service; 22 (40%) in a person’s own home; and 27 (49%) in a care home setting. Seventy-five (74%) were occupational therapists or occupational therapy support workers; twelve (12%) were activity providers; and the other fourteen (14%) were from a variety of professional backgrounds, including nursing and psychology.

Content validity

Ninety-five (97%) said the instructions for completing the PAL Checklist were clear. Using a four-point scale ranging from very difficult to very easy, 90 respondents (93%) rated the Checklist as quite easy or very easy to complete. Seven items were ranked as very important or essential by at least 73 (77%) of respondents. The most highly ranked of these seven items was contact with others, by 93 (99%) of respondents; followed by: communication skills, 89 (94%); eating, 87 (93%); getting dressed, 79 (84%); bathing/washing, 78 (82%); use of objects, 74 (78%); and practical activities, 73 (77%). Fifty-seven (60%) ranked groupwork skills as very important or essential, and a further 33 (35%) ranked it as quite important. Only 30 (32%) respondents ranked the newspaper item as very important or essential, but a further 45 (47%) ranked it as quite important. Most respondents (48/55%) said no important items were missing. Although 39 (45%) said that one or more important items were missing and 52 (60%) made comments there was no consistent pattern to their responses. Nine (17%) responses related to describing the individual's mood and motivation, for example: ‘perhaps ‘mood’ or ‘ability
to co-operate’ could be included? Eight (15%) commented on the individual’s level of orientation and/or ability to navigate their environment, for example: ‘orientation to place, e.g. ability to find way around familiar/unfamiliar buildings or places’. Five (10%) responses suggested the inclusion of mobility and another five (10%) felt that ‘having information and assessment of a person’s ability to transfer, i.e. on and off bed, chair and toilet’ was needed. A further five (10%) specifically suggested that using the toilet and/or continence should be included.

Some redundant items were identified by 24 (27%). Comments related primarily to two items: ‘groupwork’ (13/15%) and ‘looking at a newspaper’ (14/16%), based on the practitioners’ own experience of using the instrument. The difficulty of completing the groupwork item when assessing people living on their own in the community was highlighted, and its relevance questioned as this approach is not seen as appropriate for those in the later stages of dementia. It was also pointed out that ‘groupwork is the kind of skill which has something to do with staff’. There were three themes related to the newspaper item: some felt it can be difficult to assess; others that it may not be a familiar activity to some people and, therefore, not relevant to assess; whilst others stated, ‘it is very specific’, suggesting that ‘this may be better widened to include other similar activities, e.g. TV’.

**Phase 2**

Data were collected for 60 people with dementia. There were 20 from each of the following service settings: day hospital, in-patient ward and continuing care. Twenty-five (42%) participants were male and 35 (58%) were female. The mean age was 78 (range 64–96). Twenty (33%) lived in continuing care. The social situation of the remaining 40 participants, when not in hospital, was as follows: 16 (40%) lived alone; 18 (45%) lived with a spouse or relative; and 6 (15%) lived in supported accommodation. The MMSE scores ranged from 0–22, with a mean of 9. Fifty-five staff were interviewed to enable completion of the instrument. The number participating in each setting was as follows: day hospital, 12; in-patient ward, 20; and continuing care, 23. Their length of experience working with older people with dementia ranged from 10 months to 27 years. Twenty-eight (51%) had a professional qualification (primarily Registered Mental Nurse), 12 (22%) had a NVQ or equivalent level qualification and the other 15 (27%) had no formal qualification.

**Criterion validity**

The frequency of the PAL activity levels per service setting and for each Checklist item is shown at Table 2. The frequency of PAL activity levels as assessed for the total sample was 18 (30%) at planned level, 11 (18%) at exploratory level, 12 (20%) at sensory level and 19 (32%) at reflex level. Table 2 also demonstrates that, as predicted, the day hospital attendees achieved higher PAL levels overall and for all-but-one of the individual items. This indicates a higher level of ability than those requiring the additional support provided within a continuing care setting. Conversely, those in continuing care obtained lower PAL activity levels for all the individual items, reflecting their higher level of dependency.

**Concurrent validity**

Concurrent validity was demonstrated through correlation of the PAL Checklist data with the overall scores obtained on each of the other instruments. The Spearman’s rank order correlation coefficient (RHO) for each correlation were as follows: MMSE: -0.75; BI: -0.71; CAPE-BRS: 0.71; BADLS: 0.82; and CDR: 0.81. All correlations were highly significant ($p < 0.001$). As expected, the negative correlation with the MMSE and BI reflected that higher scores obtained using these tools indicate higher levels of cognitive ability and independence in daily living activities respectively. Conversely, higher scores on the CAPE-BRS, the BADLS and the CDR reflect higher dependency, poorer ability to perform daily living activities and more severe dementia.

**Construct validity**

The correlation between each item of the PAL Checklist is shown at Table 3. In terms of convergent validity, the highest correlations were found between practical activities and the use of objects (.81); dressing (.80); and bathing (.79). High correlation was also found between contact with others and groupwork (.77); and between the newspaper item and use of objects (.76).

**Internal consistency**

The Cronbach’s alpha coefficient value was 0.95. This indicates that the scale had excellent internal consistency.

**Inter-rater and test-retest reliability**

Reliability was determined using Cohen’s Kappa and the intra class coefficient (ICC). Initially the maximum range of all four activity levels, was analysed using a 4x4 table. However, the full range of levels was not utilised for one item (eating), thus preventing the coefficient values being computed. The data were therefore recoded and analysed, combining the scores for the planned and exploratory levels, as were those for the sensory and reflex levels. This reflected not only the natural division observed within the data, but also clinical experience of using the PAL Checklist. The Kappa and ICC values for inter-rater and
Table 2. Frequency (%) of PAL activity levels per service setting and per PAL Checklist items ($n=60$).

<table>
<thead>
<tr>
<th></th>
<th>Day hospital Frequency (%)</th>
<th>In-patient Frequency (%)</th>
<th>Continuing care Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned</td>
<td>11 (55)</td>
<td>4 (20)</td>
<td>3 (15)</td>
</tr>
<tr>
<td>Exploratory</td>
<td>3 (15)</td>
<td>5 (25)</td>
<td>3 (15)</td>
</tr>
<tr>
<td>Sensory</td>
<td>5 (25)</td>
<td>7 (35)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Reflex</td>
<td>1 (5)</td>
<td>4 (20)</td>
<td>14 (70)</td>
</tr>
</tbody>
</table>

Frequency of PAL activity levels for each PAL Checklist item per service setting:

<table>
<thead>
<tr>
<th></th>
<th>Day hospital</th>
<th>In-patient</th>
<th>Continuing care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bathing/washing</td>
<td>P 12 (60)</td>
<td>P 4 (20)</td>
<td>P 1 (5)</td>
</tr>
<tr>
<td></td>
<td>E 2 (10)</td>
<td>E 2 (10)</td>
<td>E 0 (0)</td>
</tr>
<tr>
<td></td>
<td>S 5 (25)</td>
<td>S 7 (35)</td>
<td>S 6 (30)</td>
</tr>
<tr>
<td></td>
<td>R 1 (5)</td>
<td>R 7 (35)</td>
<td>R 13 (65)</td>
</tr>
<tr>
<td>Getting dressed</td>
<td>P 7 (35)</td>
<td>P 5 (25)</td>
<td>P 0 (0)</td>
</tr>
<tr>
<td></td>
<td>E 7 (35)</td>
<td>E 5 (25)</td>
<td>E 3 (15)</td>
</tr>
<tr>
<td></td>
<td>S 4 (20)</td>
<td>S 2 (10)</td>
<td>S 2 (10)</td>
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<tr>
<td></td>
<td>R 2 (10)</td>
<td>R 8 (40)</td>
<td>R 15 (75)</td>
</tr>
<tr>
<td>Eating</td>
<td>P 19 (95)</td>
<td>P 15 (75)</td>
<td>P 4 (20)</td>
</tr>
<tr>
<td></td>
<td>E 1 (5)</td>
<td>E 5 (25)</td>
<td>E 7 (35)</td>
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<td></td>
<td>S 0 (0)</td>
<td>S 0 (0)</td>
<td>S 0 (0)</td>
</tr>
<tr>
<td></td>
<td>R 0 (0)</td>
<td>R 0 (0)</td>
<td>R 9 (45)</td>
</tr>
<tr>
<td>Contact with others</td>
<td>P 13 (65)</td>
<td>P 1 (5)</td>
<td>P 3 (15)</td>
</tr>
<tr>
<td></td>
<td>E 2 (10)</td>
<td>E 9 (45)</td>
<td>E 5 (25)</td>
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<td>S 6 (30)</td>
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<td>R 0 (0)</td>
<td>R 4 (20)</td>
<td>R 6 (30)</td>
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<td>Groupwork skills</td>
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<td>P 2 (10)</td>
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<td></td>
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<td>S 3 (15)</td>
<td>S 6 (30)</td>
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<td></td>
<td>R 0 (0)</td>
<td>R 1 (5)</td>
<td>R 8 (40)</td>
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<td>Practical activities</td>
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<td>E 5 (25)</td>
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<td>S 4 (20)</td>
<td>S 8 (40)</td>
<td>S 3 (15)</td>
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<td>R 1 (5)</td>
<td>R 4 (20)</td>
<td>R 15 (75)</td>
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<td>Use of objects</td>
<td>P 7 (35)</td>
<td>P 4 (20)</td>
<td>P 1 (5)</td>
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<td>S 3 (15)</td>
<td>S 11 (55)</td>
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<tr>
<td></td>
<td>R 1 (5)</td>
<td>R 0 (0)</td>
<td>R 13 (65)</td>
</tr>
<tr>
<td>Looking at a newspaper</td>
<td>P 9 (45)</td>
<td>P 4 (20)</td>
<td>P 4 (20)</td>
</tr>
<tr>
<td></td>
<td>E 7 (35)</td>
<td>E 3 (15)</td>
<td>E 0 (0)</td>
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<td>S 3 (15)</td>
<td>S 11 (55)</td>
<td>S 5 (25)</td>
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<td></td>
<td>R 1 (5)</td>
<td>R 2 (10)</td>
<td>R 11 (55)</td>
</tr>
</tbody>
</table>

Table 3. Construct validity: inter item correlation of the Pool Activity Level (PAL) Checklist.

<table>
<thead>
<tr>
<th></th>
<th>Dressing</th>
<th>Eating</th>
<th>Contact with others</th>
<th>Groupwork skills</th>
<th>Communication activates</th>
<th>Practical</th>
<th>Use of Objects</th>
<th>Newspaper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bathing</td>
<td>0.76</td>
<td>0.59</td>
<td>0.65</td>
<td>0.65</td>
<td>0.72</td>
<td>0.79</td>
<td>0.71</td>
<td>0.70</td>
</tr>
<tr>
<td>Dressing</td>
<td>0.63</td>
<td>0.63</td>
<td>0.76</td>
<td>0.71</td>
<td>0.80</td>
<td>0.79</td>
<td>0.71</td>
<td>0.63</td>
</tr>
<tr>
<td>Eating</td>
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<td>0.75</td>
<td>0.65</td>
<td>0.65</td>
<td>0.69</td>
<td>0.69</td>
<td>0.60</td>
</tr>
<tr>
<td>Contact</td>
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<td>0.72</td>
<td>0.56</td>
<td>0.56</td>
<td>0.56</td>
<td>0.64</td>
<td>0.64</td>
<td>0.68</td>
</tr>
<tr>
<td>Groupwork</td>
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</tr>
<tr>
<td>Practical</td>
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<td>0.74</td>
<td>0.76</td>
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</tr>
</tbody>
</table>

Spearman’s rho correlation used.
test-retest reliability are summarised in Table 4. Recognising the arbitrary nature of any of the yardsticks in use all items were assessed as achieving acceptable Kappa values (> .55) for test-retest reliability. Five of the nine items achieved acceptable Kappa values for inter-rater reliability, with the remaining four items demonstrating lower values.

### Discussion

This study showed that the PAL Checklist has adequate validity and reliability, which provides a psychometric underpinning for its widespread use in clinical practice and suggests it will also be useful in research with people who have dementia. The questionnaire response rate was excellent and perhaps indicates respondents' level of interest in establishing validated tools for use in this setting. The instructions for completion were rated as clear and the Checklist was seen as reasonably easy to complete, reflecting previous anecdotal feedback from practitioners. It would therefore appear to fulfil the original design remit, which was to produce a practical resource for care-givers working with people with dementia to enable their engagement in meaningful activities.

Content validity was strong with most respondents stating that no important items were missing. There was no consistent pattern of response from those who suggested additional items for inclusion. One suggestion was the inclusion of mood and motivation, but whilst this is obviously an important factor in selecting and presenting activity, it would not be appropriate to include in a scale that assesses cognitive ability to engage in activity. Another suggestion was the inclusion of orientation and ability to navigate the environment. However, whilst this depends in part on cognitive components, it is also greatly influenced by the environment itself and how familiar and/or well designed it is. Lastly, the suggestion to include further daily living activities perhaps reflects the common emphasis on personal care rather than other activities and the tendency observed in some practice settings to use the PAL Checklist as an assessment of daily living activities, which it is not designed to be.

The comments regarding redundant items reflects clinical experience that care-givers in continuing care settings often find the groupwork skills item difficult to rate; and that staff in all three settings frequently find the newspaper item difficult to rate, as newspapers and magazines may not be routinely available. These comments were also reflected in the ranking of the importance of each item with the newspaper and groupwork items being scored as very important or essential by 32 and 60% of the respondents, respectively, a much lower percentage than the other seven items, which were rated at this level of importance by more than three quarters of respondents.

The frequency of the PAL activity levels and responses for each of the Checklist items within each of the service settings mainly confirmed clinical experience and expectations. However, the absence of anyone being assessed at the sensory level within the continuing care settings was surprising and contrasts with the clinical experience of two of the authors, both specialist practitioners within this area. Perhaps it reflects the difficulty of care-givers in differentiating between the PAL activity levels when dealing with people with more severe dementia and, indeed, the tendency to underestimate a person’s ability to engage. If so it appears to reinforce Perrin’s (1997, p. 938) assertion that ‘marked occupational poverty exists’ for people with severe dementia.

The results for criterion validity were as predicted, with those people still living in the community achieving the higher PAL activity levels. This reflects the relative degrees of support and assistance (physical and/or verbal) that people with dementia in different care settings require to carry out activities. This information can be utilised in practice to inform, and thereby enable, care-givers to provide the appropriate level of support to the person. Thus, moving towards a more optimal balance between providing necessary assistance whilst also maintaining the individuals remaining abilities and level of independence.

Concurrent validity was high, demonstrating the relevance of taking the level of cognition and severity of dementia into consideration, along with information about the individual’s previous activities. This enables personally meaningful activities to be selected and then presented at the individual’s level of ability. The importance of using such personal history information in combination with the Checklist results was highlighted by several respondents. Construct validity was also strong, with the predicted correlation of bathing, dressing, practical activities, use of objects and looking at a newspaper being found with the strongest correlations observed between practical activities and the other items, save for the newspaper item. This bears out the clinical expectations, whilst the absence of the newspaper item reflects the
earlier comments reported under content validity. The other high correlations, between contact with others and groupwork, and between the newspaper item and use of objects, were also anticipated. The latter supports Pools original rationale when developing the tool, which included the newspaper item as a way of double checking the ability to handle objects (Pool, 2005).

The Cronbach’s alpha value indicated excellent internal consistency, which may be seen as highlighting the contribution of each of the items when assessing the ability to engage in activity.

Inter-rater reliability was assessed as being acceptable. The range of values for individual items perhaps reflects variations in the role of the assessor and the particular service setting. For example, the staff in a day hospital who did not routinely provide personal care assistance found it difficult to score the bathing and dressing items. Staff were interviewed separately and asked not to confer, thus reducing the risk of bias and, hence, providing a more rigorous test of reliability. Bearing in mind the number of staff involved in the study, and their differing levels of qualification and experience, the fact that inter-rater reliability for each item was acceptable reflects how quick and easy it is to learn and put into practice with reasonable consistency. Test-retest reliability was also acceptable. This would be expected for a tool that needs to be completed by care-givers who know the person well, measuring a level of performance that would not be expected to change significantly over the course of a week or so.

These results compare well to previous studies to assess other relevant instruments. Reliability and validity studies of the ACLS were primarily conducted in adult psychiatric or physically disabled populations (Allen et al., 1992). A study of 20 non-institutionalised participants assessed it as being useful for use with people with dementia (Wilson, Allen, McCormack, & Burton, 1989). A further study established the validity of an enlarged version designed for use with older people with impaired visual or manual dexterity (Kehrborg, Kuskowski, Mortimer, & Shoberg, 1992). The AMPS has been shown to be reliable and valid for use with older people with dementia living in the community (Robinson & Fisher, 1996), but it is not suitable for people who are unable to participate in the initial interview, activity selection and contract setting that is required before the two task assessments take place. This therefore excludes the use of the AMPS for people with severe dementia, such as those within continuing care settings.

It may, therefore, be concluded that the PAL Checklist tool demonstrates adequate validity and reliability when used with older people with dementia and, as such, can be described as being fit for purpose. Harmer (2006) highlighted the need to identify each resident’s individual preferences, skills and abilities and to adapt activities to their capabilities; thus facilitating engagement in activities and contributing to well-being. However, Harmer (2006) also noted that staff may lack the necessary skills to achieve this, and suggested that further research was needed to identify ways in which staff can be assisted to enable residents with dementia access meaningful activities at an appropriate level.

A future randomised controlled trial is planned to evaluate the effectiveness of an occupational therapy intervention to improve the quality of life for people with dementia in care homes. The intervention will include education sessions for care staff, who will also complete work based learning tasks to develop their knowledge and skills in the selection and provision of appropriate activities to residents. As the PAL Checklist appears to be a valid and reliable tool for use in this setting, it will form part of the intervention.

Acknowledgements

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References


Completing the checklist. For each activity, the statements refer to a different level of ability. Thinking of the last two weeks, tick the statement that represents the person’s ability in each activity. There should be only one tick for each activity. If in doubt about which statement to tick, choose the level of ability which represents the person’s average performance over the last two weeks. Make sure you tick one statement for each of the activities.

1  Bathing/Washing
   • Can bathe/wash independently, sometimes with a little help to start [ ] P
   • Needs soap put on flannel and one-step-at-a-time directions to wash [ ] E
   • Mainly relies on others but will wipe own face and hands if encouraged [ ] S
   • Totally dependent and needs full assistance to wash or bathe [ ] R

2  Getting dressed
   • Plans what to wear; selects own clothing from cupboard; dresses in correct order [ ] P
   • Needs help to plan what to wear but recognises items and how to wear them: needs help with order of dressing [ ] E
   • Needs help to plan, and with order of, dressing, but can carry out small tasks if someone directs each step [ ] S
   • Totally dependent on someone to plan, sequence and complete dressing; may move limbs to assist [ ] R

3  Eating
   • Eats independently and appropriately using the correct cutlery [ ] P
   • Eats using a spoon and/or needs food to be cut up into small pieces [ ] E
   • Only uses fingers to eat food [ ] S
   • Relies on others to be fed [ ] R

4  Contact with others
   • Initiates social contact and responds to the needs of others [ ] P
   • Aware of others and will seek interaction, but may be more concerned with own needs [ ] E
   • Aware of others but waits for others to make the first social contact [ ] S
   • May not show an awareness of the presence of others unless in direct physical contact [ ] R

5  Groupwork skills
   • Engages with others in a group activity, can take turns with the activity/tools [ ] P
   • Occasionally engages with others in a group, moving in and out of the group at whim [ ] E
   • Aware of others in the group and will work alongside others although tends to focus on own activity [ ] S
   • Does not show awareness of others in the group unless close one-to-one attention is experienced [ ] R

6  Communication skills
   • Is aware of appropriate interaction, can chat coherently and is able to use complex language skills [ ] P
   • Body language may be inappropriate and may not always be coherent, but can use simple language skills [ ] E
   • Responses to verbal interaction may be mainly through body language; comprehension is limited [ ] S
   • Can only respond to direct physical contact from others through touch, eye contact or facial expression [ ] R

7  Practical activities (craft, domestic chores, gardening)
   • Can plan to carry out an activity, hold the goal in mind and work through a familiar sequence; may need help solving problems [ ] P
   • More interested in the making or doing than in the end result, needs prompting to remember purpose, can get distracted [ ] E
   • Activities need to be broken down and presented one step at a time; multisensory stimulation can help to hold the attention [ ] S
   • Unable to ‘do’ activities, but responds to the close contact of others and experiencing physical sensations [ ] R

8  Use of objects
   • Plans to use and looks for objects that are not visible; may struggle if objects are not in usual/familiar place (i.e. toiletries in a cupboard below washbasin) [ ] P
   • Selects objects appropriately only if in view (i.e. toiletries on a shelf next to washbasin) [ ] E
   • Randomly uses objects as chances upon them; may use inappropriately [ ] S
   • May grip objects when placed in the hand but will not attempt to use them [ ] R

9  Looking at a newspaper/magazine
   • Comprehends and shows interest in the content, turns the pages and looks at headlines and pictures [ ] P
   • Turns the pages randomly, only attending to items pointed out by others [ ] E
   • Will hold and may feel the paper, but will not turn the pages unless directed and will not show interest in the content [ ] S
   • May grip the paper if it is placed in the hand but may not be able to release grip; or may not take hold of the paper [ ] R

Select the appropriate PAL Profile to act as a general guide to engaging with the person in a variety of activities.

Complete a PAL Individual Action Plan to act as a specific guide to facilitating personal activities.

Planned Exploratory Sensory Reflex