

## **'Functional assessments for older people with dementia'**

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### **Clinical scenario:**

Occupational therapists are required to analysis the information gained from assessments in order to predict whether a client with dementia is able to return home and guide further interventions. Inherent to making such predictions, is the assumption that performance in assessments performed in a clinical setting provide a legitimate substitute for an environment which is familiar to the client (Park, Fisher & Velozo, 1994). The study of motor control has in recent years hypothesised that movement is "geared to" specific environments. Clinical and home environments contain both physical and social differences which may afford different performances in assessments. This is especially pertinent in patients with dementia who have a declined cognitive function, communication, memory and self-care abilities (Molly & Lubinski, 1995).

### **Focussed clinical question:**

What is the evidence for the effects of the environmental context on functional performance in assessments in elderly (65 year of age plus) clients with dementia.

Summary of search, 'best evidence' appraised, and Key findings:

Both Tullis et al (1999) and Hoppes et al (2003) articles found that the environment has some effect on the motor performance aspects of an assessment with people with Dementia. However the evidence presented was not very strong, with both studies recommending further research needed in this area. Some of the evidence presented was stated as not being statistically significant or the research approach was not appraised well enough and therefore the results were not convincing.

### **Clinical bottom line:**

There is no conclusive evidence which indicates that the environmental context in which you administer functional assessments in clients with dementia has any effect on their functional performance.

### **Limitation of this CAT:**

This critical appraisal has been peer reviewed by one lecturer as part of an assignment.

### **Search strategy:**

CINAHL, PubMed (MEDLINE) and the Cochrane library were all accessed online in the search for articles for this CAT. Citation tracking (following up references in other articles) followed by manual searching of journals.

### **Inclusion and exclusion criteria:**

There were three main inclusion criteria used in this search:

- Articles were searched using the key words Dementia, Assessment and environment.
- Articles featuring any subtype of dementia were also included.
- Only articles which were published no later than ten years ago (post 1998) were included in the search.
- Only articles which were published and in journals or available off data bases were considered (CINAHL, PubMed and Cochrane library).

**Exclusion criteria:**

- Studies were excluded if they were published earlier than 1998 not specific to the key words or had little relevance to the research question.
- Studies were also excluded if their were more than one group of participants which suffered from a illness other than the specified dementia.
- The studies included population was under the age of 65 years of age they were also excluded.

**Result of the search:**

| <b>Study design/<br/>methodology of<br/>the articles<br/>retrieved</b> | <b>Level of evidence</b> | <b>Author (year)</b>            |
|--|--------------------------|---------------------------------|
| Systematic review  | Level I-1                | Tullis & Nicol (1999)           |
| Quasi-experimental design (control trial)                              | Level II-1               | Hoppes, Davis & Thompson (2003) |
| Quasi-experimental Design (control trial)                              | Level II-1               | Davis, Hoppes & Hasbro (2005)   |

**Best evidence:**

The article which was selected for critical appraisal was Hoppes, S., Davis, L. A. & Thomson, D. (2003). Environmental effects on assessment of people with dementia: A pilot study.

This article was chosen because it was one of only two articles found on the subject. The two articles followed the same design and had two of the three same authors and also came to the same conclusions. Thus this article was chosen because it was published in an occupational therapy journal (The American journal of Occupational Therapy) and the other article in a Geriatric journal (Topics in Geriatric Rehabilitation)

Critical appraisal

Hoppes, S., Davis, L. A. & Thompson, D. (2003). Environmental effects on the assessment of people with Dementia: A pilot study. *The American Journal of Occupational Therapy*, 57(4), 396-402.

**Are the results valid?**

*Did the trial address a clear focused issue?*

Yes, the research had a clearly outlined objective

Aim of the study was to see if the three different environments affect the performance of

dementia patients in a standardised assessment of independent living skills.

The study clearly states the research question: "Do individuals with dementia perform differently on a standardised assessment of independent living skills administered in three environments: clinic, adult day-services facility where they regularly attend, and home?"

*Population was clearly stated:*

12 participants (6 male, 6 female) had been diagnosed with dementia within the last year and regularly attend an adult day-service. All participants live with family members in the community". The small sample size of the study makes the results statistically insignificant (Hoppes et al, 2003)

*Outcomes and outcome measures clearly defined:*

The focus of the article was functional performance, which although stated and broken down into respective sections was not defined any further.

The MMSE was initially used to establish the participant's degree of dementia, with clear evidence employed by the researcher to validate their selection of this tool.

The study used structured assessment of independent living skills (SAILS) as the outcome measure to assess the participant's functional ability. The article gives a clear explanation of why the assessment was used.

*Was the assignment of participant to treatments randomised?*

No, the trial was a controlled clinical trial and it was not appropriate to assign participants randomly.

*Were all the participants who entered the trial accounted for at its conclusion?*

Yes, the number of participants is clearly stated and accounted for throughout the article. Twelve participants consented to the study while ten participated were assessed in all three environments, one did not regularly attend the adult day service and one became ill which prevented the third assessment.

*Is the literature review appropriate?*

Yes, literature was given from various sources (Occupational therapy journal articles, books and assessment tools) which related to the topic at hand. It was discussed in detail the background of the topic and its context.

*Were participants, health workers and study personnel 'blind' to the treatment?*

No, The raters were however were blind to the any previous score of the participants who were randomly allocated to a rater for each new assessment. Raters were also blind to the results of assessments done by the other members of the team during the study ensuring inter-rater reliability.

*Were ethical issues considered?*

Cannot tell, the participants of the study were voluntary and informed consent from the carers and participants were obtained before the beginning of the trial. The trial was also approved by an "Institutional review board", however the ethical issues such as confidentiality, distress etc were not discussed.

**What were the results?**

*Was there an adequate description of the data collection methods used?*

Yes, the outcome measures used were standardised and commonly used assessments in the

specified area. The study clearly outline the inclusion criteria for the assessments and their reasons for there use. They measured the specific areas of interest to the study and provided statistical data and the way in which they were implemented was clearly outlined. The methods used to ensure Inter-rater reliability was outlined in detail.

*Were the methods of analysis appropriate, clearly described and justified?*

Yes somewhat, the analysis is appropriate as the statistical analysis is explained in small detail as 'determined measures analysis of variance' (pp. 399). The results are also set out in 3 clear tables which support the analysis, however little justification of chosen method of analysis is made.

*What are the key findings?*

The three tables provide a clear overview of the order and learning effects, correlation between the MMSE and SAILS and the summary of the statistics (descriptive). The summary of the descriptive statistics provides a good comparison and breakdown of the different performance areas in reference to the three different environments. This outlines the markedly better motor scores in the home environment compared with the other environments in relation to performance of the motor tasks (difference of 3.5). The cognitive score, instrumental activity score and social score all showed little significant difference in scores.

*How significant were the results?*

The difference in performance in the home of motor tasks was 3.5 points above that of the clinic and day centre settings which is significant ( $p = 0.0138$ ), however this was the only significant difference in subscales in the SAILS. There was no significant difference in performances among the home, clinic or day centre in the total SAILS ( $p = 0.3176$ ) score or in the other three subscales (cognitive [ $p = 0.04648$ ], instrumental [ $p = 0.2777$ ], social interaction [ $p = 0.7147$ ]) The key findings however stated that the results were different from that of other studies in relation to the three insignificant findings in he three subscales and thus the study would benefit from a larger sample size.

*Have the research aims/questions/hypothesises been addressed?*

Yes, the aim of the study was to establish if the environment had any effect on a client's performance in assessments with elderly dementia clients. The study hypothesised that the dementia clients would overall perform better in the familiar environment (home) than the unfamiliar environment (day centre and Clinic).

The study found that the environment effected the dementia patients motor task performance but not their performances in cognitive, instrumental or social tasks. The participants performed better on the motor task in the familiar environment (home) than in the clinic or day centre environment.

However, the small sample group included in the study and the unforeseen exclusion of two participants from being assessed in the day centre may have prevented the detection of further differences in the study.

This article has been appraised using Taylor's (2007) format.

#### Critical Appraisal:

Tullis, A. & Nicol, M. (1999). A systematic review of the evidence for the value of functional assessment of the older person with dementia. *British Journal of Occupational therapy*, 62(12), 554-563.

### **Are the results valid?**

*Did the review address the clearly focused issue?*

Yes the review has a clearly stated focus:

Review the evidence (literature) no more than ten years old, and to present an informative summary of the value of functional assessments in older people with dementia (65 years plus). Evidence based practice and efficacy or treatment are both current issues with health care professionals. Tullis and Nicol point out that occupational therapists are responsible for the assessment of patients abilities in regard to functional status. The information gathered from the functional assessments performed by occupational therapists is used to determine whether a patient is safe to return home and thus it important that the optimal method of assessing patients abilities is used.

The reviews goal is to establish whether there is any strong evidence to support the value functional assessments in dementia patients. ....

*Do you think the important, relevant studies were included?*

The published literature was extensively searched drawing from databases (CINAHL, Medline and PsychLit), the internet and manual searching. An appropriate range of key words was used (Elderly, Dementia, Functional assessment) with inclusion of other areas related closely to the key words (Alzheimers type etc).

*Did the reviewers establish clear inclusion and exclusion criteria for the identified studies?*

A number of inclusion and exclusion criteria appear to be used:

Inclusion - published material, research or based on research.

- 1989 onwards

- specific to key words

- articles that relate to the above outlined factors that appeared to enhance or diminish the value of functional assessments.

- dementia as according to the ICD 10

- 65 years of age and older

Exclusion - not specific to the key words

- dementia under the age of 65 years of age

The inclusion/exclusion criteria were stated to be 'rigorously applied' however how this was achieved was not stated.

Sixteen studies were found by the authors which meet the criteria, no mention was made of how many were excluded or for what reasons.

*Did the reviews authors do enough to assess the methodological quality of the included studies?*

yes, Some of the studies methodology were stated (quantitative & phenomenological) and where appropriate the authors commented on whether the articles research approach was justified enough. An example of this is clearly outline in the discussion of Borell, Ronnberg & Sandman's (1995) article where the authors critique whether the reader would be able to appraise their findings due to there lack of justification of there approach.

*If the results of the review have been combined, was it reasonable to do so?*

The findings of the review drew from three stands the development and evaluation of functional performance measurement tools, the influence of context and environment on the performance

of patients and the relevance of perceptions and views of the family/caregiver and the patient with dementia. Due to the heterogeneity of the three strands related to the topic, statistical synthesis of the strands was not produced. The results were thus presented as a synthesis in narrative form and a summary tables of the respective groupings of articles.

### **What are the results?**

*Were the methods of meta-analysis and synthesis appropriate and clearly justified?*

As stated above, the review did not synthesis the findings as three clear strands relating to functional assessments were identified. The findings of the review were presented in a narrative form.

*What is the overall result of the review?*

The study identified three strands of interest which relate to the functional assessments of people over the age of 65 with a diagnosis of dementia.

The identified strands are presented as narrative summaries of the studies, with comparisons made within the respective strands. Eight studies were reviewed which identified the merits and limitations of their respective functional performance measurement tools. The authors identified that while the assessment of key functional tasks is essential for occupational therapists, less reductionist methods would enhance the standardised methods, which were utilised.

Four studies were reviewed in relation to the influence of context on assessments. The review provided striking support for the influence of the environment on performance in clients with dementia.

The third strand identified by the authors was the influence of views held by the family, caregivers and the person with dementia (four studies). Tullis and Nicol conclude that although there is little evidence which demonstrates any influence it is an area it is an area which should be explored when making decisions regarding a clients ability to return home.

No statistical evidence is given for the individual studies with only population number specified.

*How precise are the results?*

As mentioned above there is little statistical evidence on the individual studies and the narrative synthesis of the articles only focused on the respective strands. It is therefore hard to conclude whether

*Are the conclusions and recommendations based on the review findings?*

Tullis and Nicol conclude by stating that there is little evidence which can strengthen or contest the current home assessment strategies used in occupational therapy for people with dementia. The authors go onto discuss the three sub groups which were identified and recommend from these four aspects of assessing which are relevant in establishing patient safety and wellbeing on their discharge.

The review ends with a recommendation for further 'exploration and evaluation' in regard to the areas discussed in the articles but does not identify any specifics.

### ***Implications for practice, education and future research:***

Although the research reviewed indistinctly supported the idea that the environmental context has some degree of effect on assessments with dementia patients, they still ended with somewhat inconclusive statements. The articles reviewed in the Tullis et al (1999) review, surrounding the influence of context, offer results which are either statistically insignificant or methodology which is question the appraisability of the studies. The limited credible evidence offered by this review does however yield some pertinent ideas concerning assessing functional

performance of clients with dementia in their natural setting. The small sample size (n=12) in Hoppes et al (2003) article means the results are statistically insignificant however the authors elaborated on their results. They offer a possible explanation for the increase in only the motor task subscale which is backed up by credible literature. Tullis et al (1999) makes some good recommendations which support the weak results of the Hoppes et al (2003) article, which states that the functional performance of the dementia patient should be assessed in their 'natural setting' (Tullis et al, 1999, pp. 561). All the articles reviewed suggested the need for more research into this context as the results of the studies were statistically insignificant due to sample size or there was a need for more knowledge regarding this aspect. Having a larger sample size would allow the detection of the exact differences found within motor performances and provide a more credible argument for the effect of the environmental context on dementia clients. In order to implement any of the information gained from these articles into practice, there would need to be more research done in the area of environmental context, which is more conclusive. In order for occupational therapists to consider substituting the clinical assessment environment for that which is familiar to a client with dementia the evidence would need to be more compelling and credible. An occupational therapist does not only have to consider the benefits to the client of such modifications to their practice but also time, funding and numerous other contextual factors. Therefore it is not realistic for an occupational therapist to do all functional assessments in a familiar setting with dementia patients based on the evidence available.

#### **References:**

- Borell, L., Ronnberg, L., & Sandman, P. O. (1995). The ability to use familiar objects among patients with Alzheimer's disease. *Occupational Therapy Journal of Research*, 15(2), pp. 111-21.
- Davis, L. A., Hoppes, S., & Chesbro, S. B. (2005). Cognitive-communicative and independent living skills assessment in individuals with dementia: A pilot study of environmental impact. *Topics in Geriatric Rehabilitation*, 21(2), pp. 136-143.
- Hoppes, S., Davis, L. A., & Thompson, D. (2003). Environmental effects on the assessment of people with dementia: A pilot study. *The American Journal of Occupational Therapy*, 57(4), pp. 396-402.
- Molloy, D., & Lubinski, R. (1995). Dementia: Impact and Clinical Perspectives. In R. Lubinski (Ed.). *Dementia and communication*. San Diego: Singular
- Park, S., Fisher, A., & Velozo, C. (1994). Using the assessment of motor and process skills to compare occupational performance between home and clinic settings. *The American Journal of Occupational therapy*, 48(6), pp. 697-709.
- Taylor, M. C. (2007). *Evidence-Based Practice For Occupational therapists* (2<sup>nd</sup> Ed.). Blackwell Publishing: Oxford.
- Tullis, A., & Nicol, M. (1999). A systematic review of the evidence for the value of functional assessment of older people with dementia. *British Journal of Occupational Therapy*, 62(12), pp. 554-563