

Recommendations for environmental modification: The reliability of using digital photographs, environmental measurements and a functional status report to assess home access

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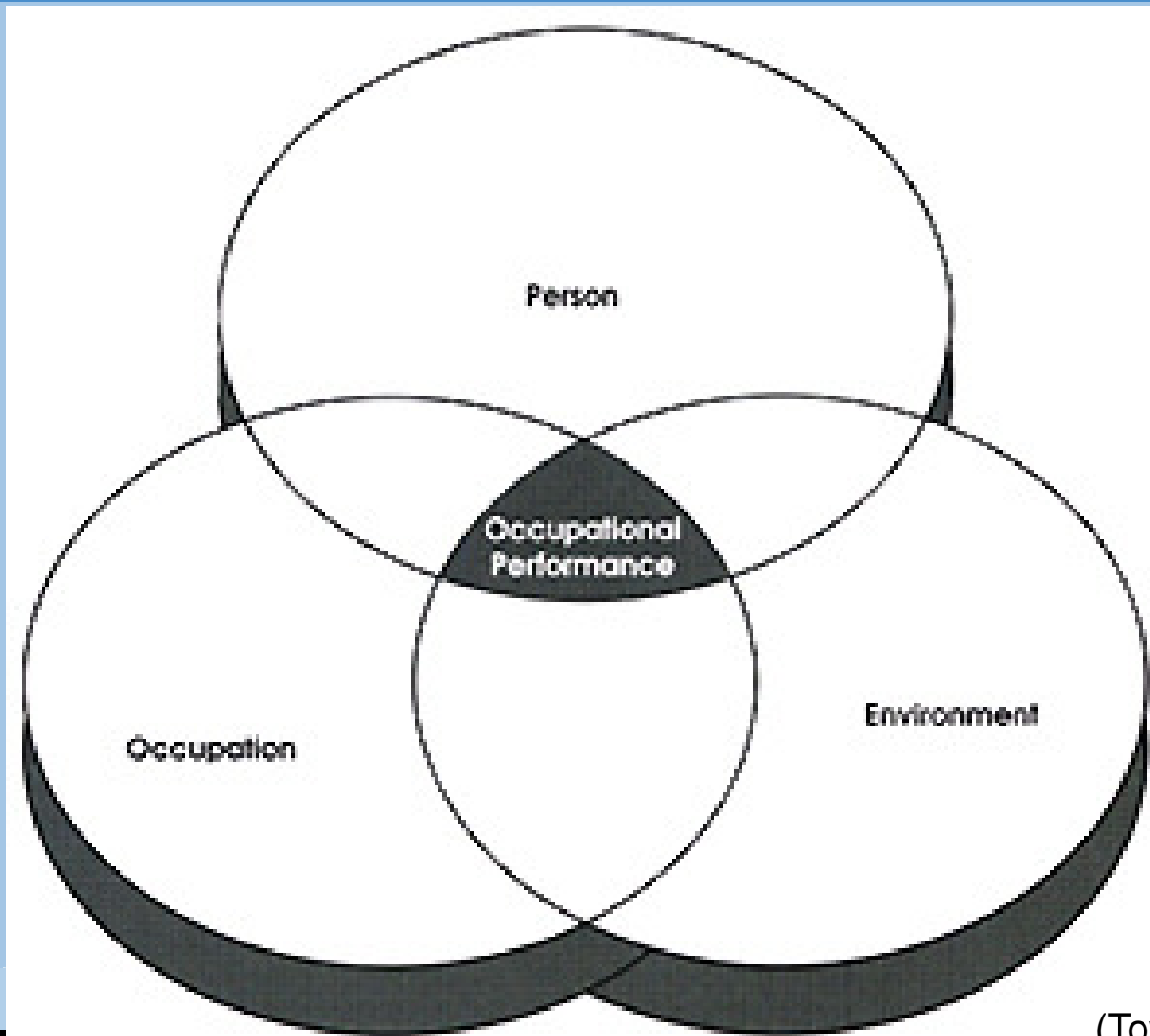
Presentation Overview

- Background and Literature
 - Research Aims
 - Methodology
 - Results
- Discussion points
 - Conclusions
 - Future research
 - References

Background and Literature Review

- Population ageing → decreased health status of Australia
(ABS, 2006b)
- Increasing demands on health care for more efficient discharges
(AIHW, 2004), (ABS, 2006a)
- Discharging older adults into their own home earlier reduces these pressures
(Stark, 2004)
- Occupational therapy models support elderly to 'age in place'
(Townsend et al., 2002)

Background and Literature Review



(Townsend et al., 2002)

Background and Literature Review

- Research supports home visits to improve safety, independence and function in the home (Beswick et al., 2008)
- However, home visits are increasing in frequency and time commitment (Welch & Lowes, 2005)
- Therefore, what are alternative solutions?
- Possible solutions to increase efficiency include completion of home visit assessments from 'off-site' (Craig & Patterson, 2005; Sanford & Butterfield, 2005)

Aims:

- Determine the *reliability* of using digital photographs with environmental measurements and a functional status report to make recommendations for environmental modifications of a home access (remote home visit)
- Investigate *occupational therapists' views* regarding the potential use of this alternative option to provide modification recommendations

Methodology - Procedure

Stage 1:

Ethics approval and recruitment of participants

Stage 2:

Home visit OTs: Complete home access assessments during routine home visits, providing modification recommendations and rationale at the home access

Stage 3:

Home access forms photocopied with recommendations and rationales removed

Methodology – Procedure cont...

Stage 4:

Digital photo OT makes environmental modification recommendations from home access form and digital photographs

Stage 5:

Focus group run with *Home visit OTs* and an semi-structured interview completed with the *Digital photo OT*

Stage 6:

Quantitative and qualitative data analysed by researcher

Results - Descriptive

Patients:

N = 12

Mean age= 79 (SD = 9.3yrs)

Home access points assessed:

N = 25

Occupational Therapists:

N = 4

Home visit occupational therapists

N = 1

Digital photo occupational therapist

12 home modification recommendations categories
(eg. declutter environment, install vertical rail, door alterations)

Results - Quantitative

Hazards identified:

<i>Home visit OT –</i>	Mean # 1.70	(min 0, max 3)
<i>Digital Photo OT –</i>	Mean # 2.43	(min 0, max 4)

Number of Recommendations:

Home visit OT-	Mean # 1.80	(min 0, max 4)
Digital Photo OT-	Mean # 3.84	(min 1, max 7)

Agreement between recommendations:

- 79% agreement between home visit and digital photograph recommendations
- Kappa, chance corrected agreement of 0.31 (fair)

Results - Qualitative

Identified themes & sub-themes

1) Information seeking

- Needing more information
- Problems with limited information
- Client centred approach
- Person-Environment-Occupation (PEO) fit

2) Making use of digital photographs

- Improvements in communication
- Preplanning
- Efficiency of service delivery

Discussion

Quantitative

- Results appear similar to previous research

Sim, 2006)

(Sanford & Butterfield, 2005;

- Kappa statistic less than prior research. Explained by high agreement low Kappa paradox

(Feinstein & Cicchetti, 1990)

Qualitative

When completing the 'off-site' home visit assessment, occupational therapists want:

- more information from digital photographs and functional status report
- contact with the patient

Discussion

When considering quantitative and qualitative data combined there are interesting findings:

- The *digital photograph OT* recognised significantly more hazards and made significantly more modification recommendations
- The *digital photograph OT* based recommendations for 17% of accesses from assumptions
- The occupational therapists felt they lacked a thorough understanding of the patient

Discussion

It is possible that the *digital photograph OT*:

- ‘Erred’ on the safe side due to lack of information (Hoenig, et. al, 2006)
- Struggled with clinical reasoning due to lack of information
- Struggled to generalise patient functional status to their actual modification needs

Limitations

- Small sample size
- Large number of categories of modification recommendations
- The study assessed home access only
- Home access assessment form lacked some required information
- Varying quality and grayscale printing of digital photographs

Conclusion

Fair inter-rater reliability indicates this alternative method:

- could be useful to replace simple home visits
 - However, this may impact on clinical reasoning, accuracy and number of recommendations

Conclusion

Given the fair reliability, the digital photo assessment tool may be more appropriate to:

- Supplement standard home visits and referrals
- Provide pre-admission information for therapists to pre-plan equipment needs on discharge
- Be adapted to complete home visits for people living in remote communities

Future research

- Further development of the home access assessment form
- Reliability of modification recommendations and equipment prescription in other areas of the home
- Inclusion of patient interviews in the remote home assessment procedure
- Benefits of using digital photographs in conjunction with standard home visits

References

- Australian Bureau of Statistics. (2006a). Health of Older People in Australia: A Snapshot, 2004-05. Retrieved 12/10/2007, from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4833.0.55.001#>
- Australian Bureau of Statistics. (2006b). Australian Social Trends, 2006. Retrieved 12/10/2007 from <http://www.abs.gov.au/ausstats/abs@.nsf/7d12b0f6763c78caca257061001cc588/f7a76dce3f8dc0a3ca2571b00013d99c!OpenDocumnet#>
- Australian Institute of Health and Welfare. (2004). Australia's health 2004. Retrieved 28/3/08, from <http://www.aihw.gov.au/publications/index.cfm/title/10014>
- Beswick, A. D., Rees, K., Dieppe, P., Ayis, S., Gooberman-Hill, R., Horwood, J., et al. (2008). Complex interventions to improve physical function and maintain independent living in elderly people: a systematic review and meta-analysis. *Lancet*, 371, 725-735.
- Chamberlain, E., Evans, N., Neighbour, K., & Hughes, J. (2001). Equipment: is it the answer? An audit of equipment provision. *British Journal of Occupational Therapy*, 64(12), 595-600.
- Clemson, L. (1997) *Westmead Home Safety Assessment (WeSHA)*. Sydney: Co-ordinates Publications
- Clemson, L., & Martin, R. (1996). Usage and effectiveness of rails, bathing and toilet aids. *Occupational Therapy in Health Care*, 10(1), 41-59.
- Craig, J., & Patterson, V. (2005). Introduction to the practice of telemedicine. *Journal of Telemedicine and Telecare*, 11(1), 3-9.
- de Jonge, D., Jones, A., & Phillips, R. (2008). *Exploring the role of home maintenance and modifications in enabling older Australians to age in place*. Paper presented at the OT Australia: 23rd National Conference and Exhibition 2008.
- Patterson, C. J., Viner, J., Saville, C., & Mulley, G. P. (2001). Too many pre-discharge home assessment visits for older patients? A postal questionnaire survey. *Clinical Rehabilitation*, 15, 291-295.
- Feinstein, A. R., & Cicchetti, D. V. (1990). High agreement but low Kappa: 1. The problems of two paradoxes. *Journal of Clinical Epidemiology*, 43(3), 543-539
- Hoening, H., Sanford, J. A., Butterfield, T., Griffiths, P. C., Richardson, P., & Hargraves, K. (2006). Development of a teletechnology protocol for in-home rehabilitation. *Journal of Rehabilitation Research and Development*, 43(2), 287-298.
- Sanford, J. A., & Butterfield, T. (2005). Using remote assessment to provide home modification services to underserved elders. *The Gerontologist*, 45(3), 389-398.
- Sim, S. (2006). Reliability of the use of digital photographs to prescribe equipment in the toilet and bathroom by occupational therapists. Unpublished Honours Thesis. LaTrobe University, Victoria.
- Stark, S. (2004). Removing environmental barriers in the homes of older adults with disabilities improves occupational performance. *OTJR: Occupation, Participation and Health*, 24(1), 32-39.
- Townsend, A., Law, M., Polatajko, H., Baptiste, S., Thompson-Franson, T., et al. (2002). *Enabling Occupation: An Occupational Perspective* (2 ed.). Ottawa, Ontario: CAOT Publications ACE.

Any Questions???

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