
Effectiveness of activity programmes for older persons with dementia. A critical review of the literature by the Occupational Therapy Evidence-based Practice Research Group, McMaster University, Hamilton, Ontario.

Background

In recent years, older adults with dementia have been identified earlier and have consistently expressed their desire to remain in community settings. This has resulted in an increase in the number of day programmes offered. In both community and institutional settings, there has also been a recognition of the need to identify strengths and ongoing abilities, and to use those strengths and abilities optimally.

Many day programmes for older persons with dementia include a range of activities in which clients can participate. Occupational therapists believe that there is a therapeutic benefit to being engaged in meaningful activities. Thus, activity programmes are often designed and used by occupational therapists, and others working with people with dementia for the purpose of maintaining the clients' occupational performance and quality of life.

As these activity programmes for older persons with dementia have evolved, there has been little effort undertaken to examine their effectiveness. Occupational therapists are interested in basing their practice on best evidence. A critical review of the literature about the effectiveness of activity programmes for older persons with dementia was thus undertaken.

Objectives

A critical review of the published literature was undertaken to determine the effectiveness of activity programmes for older persons with dementia. Specifically, we were interested in the reported effectiveness of activity programmes in improving outcomes of interest to occupational therapists, namely occupational performance (ie. participation in self-care, productivity and leisure) and /or performance components (physical, affective and cognitive).

Our primary question was:

- What is the effectiveness of activity programmes in improving occupational performance (function) for older persons with dementia?

A secondary question was:

- What is the effectiveness of activity programmes in improving performance components and environmental factors for older persons with dementia?

Materials and Methods

Criteria for considering studies for this review

Types of studies

The systematic review selected randomized and quasi-randomized clinical trials which involved activity programmes for older persons with dementia.

Studies are in published literature, since 1980.

The descriptive critical review (see Table 1) included all articles which reported a study of the effect of activity programmes for older persons with dementia - the study designs included randomized controlled trials, cohort, before-after, single case, cross sectional, case control and case study.

Types of participants

Older Adults (age 65 years and older) must be part of the sample.

Inpatients and outpatients were included.

Diagnosis or description of dementia, or probable dementia, must be indicated for at least 50% of the

participants.

Types of intervention

Activity programmes include some form of activity, which may be physical, social, cognitive, or psychological/behavioural in nature.

The activity programmes may or may not be run by occupational therapists.

The activity programmes must be adequately described for the study to be included in the review.

Types of outcome measures

Outcomes should be clinically relevant to occupational therapists working with older persons with dementia.

These outcomes include:

(a) occupational performance outcomes:

in general, such as participation in daily activities, and/or

in specific areas of self-care, productivity and/or leisure, as well as global functioning, well-being and satisfaction;

(b) performance component areas:

physical components

psychological components

cognitive components;

(c) environmental factors, including family/caregiver perspectives.

Search strategy for identification of studies

Search strategies followed recommended procedures in the Cochrane Collaboration Handbook (Mulrow & Oxman, 1997).

1. Computer search - electronic data bases:

Medline, 1966 - present

CINAHL, 1966-present

Health Star, 1966-present.

Psych Lit, Social Sciences Index, Sociofile, 1980-present

Ageline, 1985-93

Review of Cochrane library.

2. Hand searching

Review of bibliographies and data bases:

Abstracts, specifically Rehabilitation and Physical Medicine, and Gerontology and Geriatrics, 1985-93,

International Abstracts, 1985-present.

3. Citation review

Review of all reference lists of retrieved articles.

Science Citations review of all primary authors and studies included in this review, from 1995 to present.

The search involved combining keywords related to activity programmes for seniors with dementia.

Key words included:

activity, daily life activity, leisure activity, activity planning, activity patterns;

aged, elderly, seniors, geriatric;

dementia, Alzheimer(s);

occupational therapy, occupation;

rehabilitation;

day care, day hospital.

A final combination was done with the following text words:

effectiveness, outcomes, program evaluation, validity, reliability, tw..

Methods of the review

(a) Article selection:

Lists of articles from the literature search were reviewed by two or more researchers for possible inclusion. Abstracts of articles were reviewed using the inclusion and exclusion criteria (above).

(b) Data abstraction:

Those articles that met the inclusion criteria were reviewed using forms and guidelines developed by the McMaster University Occupational Therapy Evidence-based Practice Research Group for critical appraisal of literature (Law et al., 1998). Data was descriptive and narrative in nature, and focused on the clinical relevance of quality of the study.

Six researchers reviewed articles in the initial phase, using the forms and guidelines, until agreement of 75% was reached. After this, one researcher completed the review.

A systematic review of articles that were experimental (RCT) or quasi-experimental in design was then conducted using guidelines for the preparation of a systematic review from the Cochrane Collaboration. A data collection form was developed specifically for this review to ensure that the data was extracted accurately from each article. Agreement of 75% was reached between 2 researchers for this form, after which one researcher completed the data collection.

(c) Data analysis:

1. The descriptive review of the studies were outlined in table form, to summarize the important clinical and methodological issues for occupational therapists (see Table 1).
2. The data from the systematic review was entered into RevMan (Review Manager) software (Cochrane Collaboration, 1998). This software summarized the results of the individual articles into 2 main tables:
 - A description of the key characteristics of the included studies (Table 2);
 - A table of comparisons of the key outcomes of the studies (Table 3).

Description of studies

Studies included in this systematic review were randomized controlled trials or quasi-experimental in design. Sufficient data was reported in the article for RevMan analysis.

Of the 19 potential articles from the descriptive critical review, 4 were selected for this systematic review based on the selection criteria.

Methodological quality of included studies

Study quality was assessed using a Quality Scale developed by Jadad et al. (1996) (see appendix 1). The main components of the quality scale were:

- allocation concealment - judged as adequate, possibly adequate and inadequate;
- study design - randomized or not;
- masking of subject, assessor and provider;
- drop-outs/withdrawals reported.

An overall quality score was assigned for each article selected for the systematic review.

Results

1. Literature search:

The first round of searching using electronic data bases found over 800 titles with the main key words related to interventions and conditions used.

Application of the inclusion and exclusion criteria narrowed this to 64 articles.

Handsearching and citation reviews found 14 more articles that met inclusion criteria.

During the review process, many articles were excluded from the final list when they were read fully. The final number of accepted articles for this review was 19.

2. Data extraction and analysis:

- (a) Descriptive review: Table 1 summarizes the important components of the accepted studies and provides

an assessment of the main methodological issues and implications for occupational therapists.

(b) Systematic review:

Of the 19 studies included in the descriptive review, 4 met the criteria for selection for a systematic review using RevMan software - these 4 studies were all experimental or quasi-experimental in design, with a control group.

Table 2 outlines the key methodological characteristics of the articles selected for systematic review following the Cochrane Collaboration guidelines, and the quality scale scores for each study.

Table 3 provides a summary of the key outcomes of the selected studies.

Discussion

The results of this critical review of the literature about the effectiveness of activity programmes for older persons with dementia indicates some support for these programmes. The descriptive review of 19 studies demonstrated that overall, some activity programmes benefitted the clients, particularly in before-after studies that examined the effects of one specific programme. However the evidence is weak and not generalizable, as many of the studies used weak methodological designs, small sample sizes and/or no control group. Although it is encouraging to see studies being carried out in this area, this review of the literature emphasized the need for studies that are methodologically rigorous and use larger sample sizes.

Four, more rigorous, studies in this review used experimental designs, and were systematically reviewed following guidelines and RevMan software from the Cochrane Collaboration. These four studies used randomized control designs to examine the effect of 4 different activity programmes, including planned walking, mental stimulation, physical activation, and/or purposeful activities. Outcomes were multivariate and included communication, performance in activities of daily living (ADL), mental status, and biochemical changes.

Although the results of this systematic review was limited by the small amount of data available, the results of the 4 studies that used rigorous methods found positive treatment effects. Statistically significant results favoured the treatment group in the outcomes of interest in all 4 studies. They support the use of activity groups for older persons with dementia for improving their well-being, communication, mental status and emotional state. Future research is needed in this area due to the small amount of evidence available.

Future research questions should focus on determining the functional outcomes of activity programmes, and the influence of the environment during these programmes. Quantitative and qualitative research designs can be used to explore the multiple perspectives and processes involved in activity programmes for older persons with dementia.

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CRITICAL REVIEW OF THE LITERATURE

Effectiveness of Activity Programs for Older Persons with Dementia

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Critical Review of Activity Programmes for Older Persons:

APPENDICES:

TABLE 1: Descriptive Review of the Literature on Activity Programmes for Older Persons with Dementia

TABLE 2: Characteristics of Included Studies for the Systematic Review using RevMan software

TABLE 3: Table of Comparison of outcomes with summary statistics and interpretation.

FIGURE 1: Validated Quality Scale

TABLE 1: DESCRIPTIVE REVIEW OF THE LITERATURE

EFFECTIVENESS OF ACTIVITY PROGRAMMES FOR OLDER PERSONS WITH DEMENTIA

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Author / date	Purpose	Design (N=)	Research Focus	Results	Conclusions & Methodology Issues
Bach et al. (1995)	- to evaluate the effects of 2 different O.T. strategies.	- randomized control trial (RCT); N = 44; 7 psychometric tests administered at 3 points in time.	- prospective study of 2 O.T. interventions (functional rehab and reactivating O.T.) for patients in a long-term care centre, in areas of cognitive, affective, social, depression, and memory functions.	- statistically significant improvements seen in depressive symptoms, cognitive function and general well-being in patients involved in functional rehab and reactivating O.T. combined.	- conclusions of study were appropriate for the short-term nature (24 weeks) of the study; - methodological limitations include heterogenous sample, no psychometric properties of measures reported; patients not blind to treatment group.
Borell et al. (1994)	- to discover the process and the outcomes of a program of occupation	- qualitative, ethnographic study; N = 4 patients and 4 staff; field note observations and interviews with patients and staff.	- to discover and understand the opportunities for conducting a programme of occupation in a day hospital unit; - analysis of patients' initiation/ participation in activities.	- contrary to goal of stimulating activity, the programme often limited or discouraged patients' activity; goals of programme conflict with staff's perceived needs for maintain order and safety; organizational barriers were identified.	- both process and outcome issues were addressed; - qualitative methods appropriate for discovery purpose of study; - no description of reasons for participant selection or of the role of the researchers in the process; no audit trail of analysis decisions provided.
Burton (1980)	- to examine the effects of environmental changes on patient behaviour	- single case design; N = 10 cases; observational measures.	- observations of patient behaviour in a psychiatry ward before, during and after an O.T. intervention	- improvements observed in interactions, appropriate use of materials and sleeping patterns.	- no clear conclusions due to single site, no control group; - purposeful selection of sample not clearly described; - observational methods of evaluation appropriate for exploratory purpose of study; - further study is required.

Author / date	Purpose	Design (N=)	Research Focus	Results	Conclusions & Methodology Issues
Friedman & Tappen (1991)	- to determine if planned walking improves communication performance.	- randomized, 2-group experimental study design; N = 30; 2 measures of communication used.	- patients from 2 nursing homes with Alzheimer's disease randomly assigned to 2 treatment groups: planned walking and conversation, for 10 weeks.	- statistically significant differences in pre and post test scores for patients in planned walking group indicated improvement in communication performance.	- conclusions limited to this convenience sample - results cannot be generalized, but are promising. Further study is warranted. - possible investigator bias, as it is unclear if assessments were blind.
Graham (1989)	- to determine level of caregiver strain following placement in adult day care.	- before and after design; N = 15; Burden interview.	- evaluation of caregiver strain for patients involved in 8 adult day care centres in one city; 3 weeks of placement required.	- no statistically significant differences in burden scores seen over time; - clinical reasons for lack of change discussed in terms of caregiver guilt re: placement and patient's adjustment to the programme.	- no definite conclusions can be drawn due to methodological limitations: no control group, convenience sample, small sample size, no psychometric properties reported for burden interview.
Holmberg (1997)	- to determine the effectiveness of a walking programme.	- case study design; N = 11; incidents of resident aggression measured.	- a walking programme for residents of a nursing unit evaluated using incident reports of aggression.	- 30% reduction in the number of aggressive incidents reported by staff on the days of the walking group: statistically significant difference.	- preliminary evidence of one programme demonstrated; - weak methodology limits conclusions: small sample size, one site, referral bias, reporting bias of staff.
Jackson (1983)	- to examine the effects of an adult day care centre.	- before and after design; quasi-experimental; N = 8; interviews with clients and family members.	- evaluation of an adult day care programme from client and family perspectives, focusing on self-care, social and leisure activities, satisfaction and emotional status.	- perceived changes in health status reported in areas of social skills, self-esteem, physical status of clients and family relationships after 6 weeks in programme. Health status was not maintained after programme closed.	- interviews focused on perceptions of clients and caregivers which was appropriate for study purpose; - no definite conclusions can be drawn due to methodological limitations: small sample size, no controls, non-standardized measures, drop-outs.

Author / date	Purpose	Design (N=)	Research Focus	Results	Conclusions & Methodology Issues
Josephsson, Backman et al. (1993)	- to study the efficacy of an intervention programme designed to support ADL performance	- before-after design; N=4 patients with dementia; process skills evaluated using AMPS.	- 4 patients in a psychogeriatric day care unit were videotaped and observed before and after 9 sessions that utilized activities that they were motivated to work on. Observations made at baseline, and post-intervention with and without environmental supports.	- statistically significant differences in some process skills were found in 3/4 patients when environmental supports (ie signs, cues) were in place; specifically, areas of knowledge and temporal organization showed improvement after intervention. - 2/4 patients did not maintain improvement when environmental supports were removed.	- results showed that it is possible to improve ADL performance in some patients with dementia when the task is motivating to the patient and appropriate environmental supports are available; - small sample size limits generalization of conclusions, but the results support further study of the benefits of activity for this population, using a more individualized approach.
Josephsson et al. (1995)	- to evaluate an O.T. intervention; to identify issues of support required for task performance.	- before and after, single case design; N = 4; videotapes used to assess patient performance using parts of AMPS and a measure of support.	- replication of an earlier study of an O.T. intervention - individualized programme using ADL's. - evaluation focused on patient's performance and frequency of support.	- intervention-related gains seen in 3/4 patients in select process skills (using knowledge during activity), with a parallel decrease in the amount of support required for task performance.	- evaluation of process skills combined with measure of support gives relevant information for O.T.'s; - no definite conclusions can be drawn due to small sample size, lack of controls, and use of non-standardized measures. - intervention and evaluation methods can be replicated for further study.

Author / date	Purpose	Design (N=)	Research Focus	Results	Conclusions & Methodology Issues
Koh, K., Ray, R., Lee, J., Nair, A., Ho, T. & Ang, P.C. (1994)	- to determine if the 3R mental stimulation programme could improve mental status score of a group of patients with dementia in a day care centre.	- cohort study of 30 patients with primary degenerative dementia attending a day care program; 15 'exposed' to the treatment and 15 in the 'control' group. Measurements were taken pre- and post-exposure.	- 3R mental stimulation programme ran for 8 weeks. Weekly sessions involved stimulation of visual, tactile, auditory, olfactory and gustatory senses using a variety of objects and activities. - Mini-mental status questionnaire (MSQ) was the outcome measure used.	- statistically significant improvement in the mean MSS score was found in the 'exposed' group, whereas there was a statistically significant decline in the mean MSS score in the 'control' group. - 12/15 patients in the 'exposed' group demonstrated some improvement in mental status, compared to no change or deterioration in all patients in the control group.	- study concluded that this activity-based, short-term programme significantly improves mental status in a group of out-patients with dementia. Serious biases exist however, in the allocation of patients to groups and lack of 'masked' measurement. - findings have implications for OT as the use of activity appeared to improve mental status. - further study is needed using RCT design and more functional outcomes.
Kovach, C.R. & Stearns, S.A. (1994).	- to examine the influence of admission to a Dementia Specific Care Unit (DSCU) on behaviours and the need for restraints.	- before and after design examining outcomes of behaviour and use of restraints with 22 patients of a DSCU. - measurement taken 1 month prior to admission and 2 months post-admission.	- DSCU programme uses a multi-disciplinary team intervention with a balance of stimulating and controlled environment. Activity programme is a key component, and includes cognitive, physical, spiritual, psychological and self-care activities.	- statistically significant differences reported in terms of behaviour change before and after admission, including reductions in activity disturbances, aggression, affective disturbances and increased social interactions. - descriptive analysis revealed minimal change in the use of restraints. Overall disruption to the patients and caregivers was decreased, but this was also descriptive.	- results indicate that improvements in behaviour were found in a group of patients admitted to a DSCU, however no causal claim can be made due to limitations of the study (eg. no control group, no reliable outcome measure used). - the results suggest for OT's that structured activities in a controlled environment may be useful for people with dementia. Further study is warranted .

Author / date	Purpose	Design (N=)	Research Focus	Results	Conclusions & Methodology Issues
Lord & Garner (1993)	- to study the effects of music on patients with Alzheimer's disease.	- randomized control trial (RCT); N = 60; mood and mental state measured with questionnaires.	- patients randomly separated into 3 groups of equal size: music group, puzzle exercise group and standard recreational group. Questionnaire administered pre and post (6 months) group involvement.	- analysis of variance showed patients in music group were more alert, happier, and had higher recall of past personal history than patients in other 2 groups; - statistically significant changes in recall, interaction and mood reported.	- conclusions were appropriate and sample size adequate for the evaluative purpose of study; - conclusions limited given some methodological weaknesses: site bias, use of non-standardized measures, observers not blind; - further study warranted.
McCormack & Whitehead , (1981)	- to determine the effectiveness of providing individual and group activities on a long-stay geriatric ward.	- descriptive study of 12 patients on a long-stay female geriatric ward, who were observed at 10-minute intervals before intervention, and during individual and group activities; outcome was engagement level.	- patients participated in a variety of individual and group activities on the ward. Engagement levels were observed and recorded in terms of socialization, use of materials, moving about, attending to an external source, or sleeping.	- prior to intervention, when there were no activities, patients were found to be engaged 28.7% of the time; - during individual activities, patients were engaged 61.2% of the time; - during group activities, engagement was 74.4%. - Five weeks after the activities stopped, engagement levels were 25.8%, which was similar to the baseline (non-intervention) level.	- results indicate that provision of activities on a psychogeriatric ward can lead to an increase in patient engagement and a decrease in sleep time during the day; - patients appeared to have interest and abilities to participate in activities, but needed stimulation and encouragement to do so; - no conclusions can be drawn from this study due to methodological weaknesses. Further study is needed re: the benefits of engagement in activity.
Neufeld & Strang (1992)	- to illustrate challenges of evaluation of activity programmes.	- case study; N = 35; standardized measures and interviews.	- evaluation of one programme, focusing on mental status, ADL participation and life satisfaction before and after programme.	- no significant differences found (T1 vs. T2) in mental status, life satisfaction and ADL; - interviews revealed positive perceptions of patients, caregivers and staff in terms of care required, family relief and enjoyment.	- use of multiple methods of evaluation (quantitative and qualitative) useful for evaluation of a programme in its early stages; - conclusions limited to one programme; limitations include lack of control group, and some measures did not have established reliability, validity.

Author / date	Purpose	Design (N=)	Research Focus	Results	Conclusions & Methodology Issues
Panella et al. (1984)	- to evaluate a day care programme.	- cohort study; N = 8; patient behaviour and level of satisfaction evaluated.	- evaluation of one day programme for patients with dementia, conducted over a 4 year time frame.	- behavioural rating scores indicated progressive decline in function over time; patient and caregiver satisfaction was maintained, family support found to be clinically important.	- qualitative and quantitative measures acknowledged clinically important outcome of family support; - no definite conclusions due to methodological limitations: no control group, small sample size, purposeful selection, non-standardized measures.
Turner (1993)	- to evaluate quality of life after introduction of activity nursing.	- before-after design; N = 17; modified mental test, communication scale and interviews.	- to explore the changes in patients' quality of life after an activity nursing programme was introduced in a continuing care unit.	- change scores indicated improvements in mental status and communication skills; interview responses from patients, staff and relatives indicated improvement in interest level, mood, conversation and morale.	- use of multiple methods of evaluation were appropriate for the pilot nature of the study; - no definite conclusions can be drawn due to methodological limitations: small sample size, no controls, sample selection not randomized, measures not standardized.
Valentine-Garzon et al. (1992)	- to determine effectiveness of dance programme.	- before-after design; N = 17; experimental and control groups; measures of ROM, self-esteem and ADL function.	- evaluation of an ROM Dance programme for patients with chronic illnesses including some with Alzheimers disease.	- no statistically significant differences found in post-group or one-month follow-up scores of ROM, self-esteem or ADL; - findings support other studies of ROM dance.	- inconclusive results due to methodological limitations: no randomization of sample, small sample size, self-report measures used with little psychometric information given, evaluation not blind, short time frame (4 weeks) for intervention.

Author / date	Purpose	Design (N=)	Research Focus	Results	Conclusions & Methodology Issues
Wallis et al. (1983)	- to determine if reality orientation therapy has any advantage over diversional occupational therapy.	- randomized control trial (RCT); N = 38 (out of an original 60 patients); measures of behaviour and cognitive functions used.	- patients from 6 long-stay wards of a hospital received either reality orientation therapy or diversional occupational therapy. Behaviour and cognitive outcomes were assessed before treatment, at 2 weeks, 3 and 4 months.	- small numbers (38) included in final analysis due to attendance; - no statistically significant differences found in behavioural or cognitive test scores for patients receiving reality orientation or diversional therapy; some post-treatment scores favoured reality orientation group, but not significant.	- study findings did not support the hypothesis that reality orientation had an advantage over diversional O.T. - this may be due to methodological weaknesses: small sample size for analysis, patients subdivided into numerous (6) groups; intervention time of 2 weeks too short to see change, outcome measures not sensitive enough.
Widerlov et al. (1989)	- to study functional and biochemical changes resulting from mental and physical activation of patients with dementia.	- before-after design; N = 35; dementia rating scale, psychological tests and concentrations of biochemicals in cerebral spinal fluid measured.	- patients in 2 nursing homes were studied: 1 ward received an integrity-promoting program of mental and physical activation, and the other ward received regular care. Concomitant changes in function and biochemistry measured.	- statistically significant improvements found in short-term memory, distant memory, physical activity, dressing and level of confusion for patients in treatment group; significant elevations in SRIF levels in CSF in 15/17 patients in treatment group.	- conclusions positive and appropriate for purpose of study; concomitant study of functional and biochemical changes useful; - well-designed before-after study - lack of randomization resulted in differences in years of hospitalization in 2 groups; - further study needed, using a randomized design.

Characteristics of Included Studies

Effectiveness of activity programmes for older persons with dementia. A critical review of the literature by the Occupational Therapy Evidence-based Practice Research Group, McMaster University, Hamilton, Ontario.

Study	Method	Participants	Interventions	Outcomes	Notes
Bach 1995	randomized clinical trial comparing 2 different OT strategies allocation concealment unclear double-blind assessments no drop-outs reported	N=44 patients of 1 long-term care centre mean age 83.4 years, range 65-95 years slight to moderate level of dementia on DSM-3-R groups matched for key variables	1 group received functional rehab only other group received functional rehab plus reactivating OT program interventions well described and could be replicated 24 weeks duration	baseline, 12 weeks and 24 weeks (post-treatment) assessments 1. Clinical Assessment Geriatric Scale (SCAG) 2. Hamilton Depression Rating Scale (HAMD) 3. Depression Status Inventory (DSI) 4. Scale of Well-being (B-S) 5. Benton Test of visual retention 6. Grumberger Verbal Memory Test 7. Nuremberg Aged Persons Inventory - parts	
Friedman 1991	randomized clinical trial, 2 group comparison allocation concealment unclear subjects and assessors not masked no drop-outs reported	N=30 subjects from 2 nursing homes diagnosis of probably Alzheimers disease, moderate to severe levels of dementia groups similar at baseline	2 treatments groups - planned walking, for 30 minutes, 3 times per week - conversation-only for same time 10 week duration individual treatment sessions	assessments pre- and post-treatment 1. Communication Assessment Scale for Cognitively Impaired 2. Communication Observation Scale for Cognitively Impaired	
Koh 1994	2 group comparison - cohort design with control group non-randomized subject and assessor masking unclear drop-outs were reported	N=30 patients attending a day-care centre primary degenerative disorder all over age 55 years	1. 3R mental stimulation programme included reminiscence, reality orientation and remotivation weekly sessions held for 8 weeks 2. control group not exposed to 3R programme	assessments pre- and post-treatment 1. modified Menal Status Questionnaire (MSQ)	
Wallis 1983	randomized clinical trial with 1 experimental and 3 control groups allocation concealment unclear subject and assessor masking unclear drop-outs were reported and not included in analysis	N=60 patients in a long-stay facility dementia of withdrawn behaviour reported classified into organic and functional diagnosis categories age range 38-90 years	1. reality orientation therapy, with OT's, 30 mins. per day, 5 days per week 2. control groups - received a variety of group and individual activities each day duration 3 months	assessments pre-treatment, 2 weeks after treatment began, and post-treatment 1. modified Crichton Scale 2. Royal College of Physician's mental state scale for the elderly	

Review: Activity programmes for older persons

Comparison or Outcome

WMD (95%CI)

Activity programme versus control condition - change scores

- well-being (negative measures)
- general behaviour/function
- cognitive skills
- communication - verbal
- non-verbal communication (observed)
- depression (negative measures)
- memory (visual recall)
- mental status



Activity Programmes for Older Persons with Dementia Analysis and Interpretation of Table of Comparisons:

This table indicates the summary statistic for the 4 studies that were systematically reviewed using RevMan software. The summary statistic for each of the outcomes listed is the “weighted mean difference (WMD)”, as all of the data was continuous. The WMD is a statistical calculation of the change scores for all of the studies that measured the outcome listed. The confidence interval is set at 95%. The scale for the weighted mean difference statistic is from -10 to +10.

In this table, the vertical line indicates “no difference” between the treatment and control groups. The summary statistic to the left of the vertical line indicates that the change scores for the outcome favour the control condition. The summary statistic to the right of the vertical line indicates that the change scores for that outcome favour the treatment condition (that is, Activity Programmes).

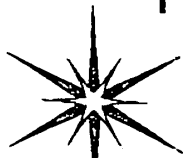
The outcomes that are compared in this table are listed on the far left side. There were 8 primary outcomes measured in the 4 studies that were reviewed. They are reported as change scores. It should be noted that some of the measures were “negative”, meaning that the lower the score the better the outcome. It is also important to note that not all outcomes were measured in all 4 studies. In fact, several outcomes were only measured in one study, and therefore the summary statistic should be considered with caution.

Interpretation:

The arrow to the far right of the scale indicates that the summary statistic (WMD) is off the scale. This means that the change scores, when calculated together as a summary statistic, strongly favour the treatment condition. The outcomes which demonstrate this are: well-being, verbal communication, and cognitive skills.

The lines and squares indicate the mean (the squares) and the confidence interval (the lines) for the summary statistic. In this table, all of the summary statistics are to the right of the vertical line, which means that they favour the treatment condition. The results would not be considered as strong if the lines and/or squares were touching the vertical (no difference) line.

The outcomes which demonstrate a positive effect for the treatment condition are: general behaviour/function, social interaction, non-verbal communication, depression, memory and mental status.



Validated quality scale

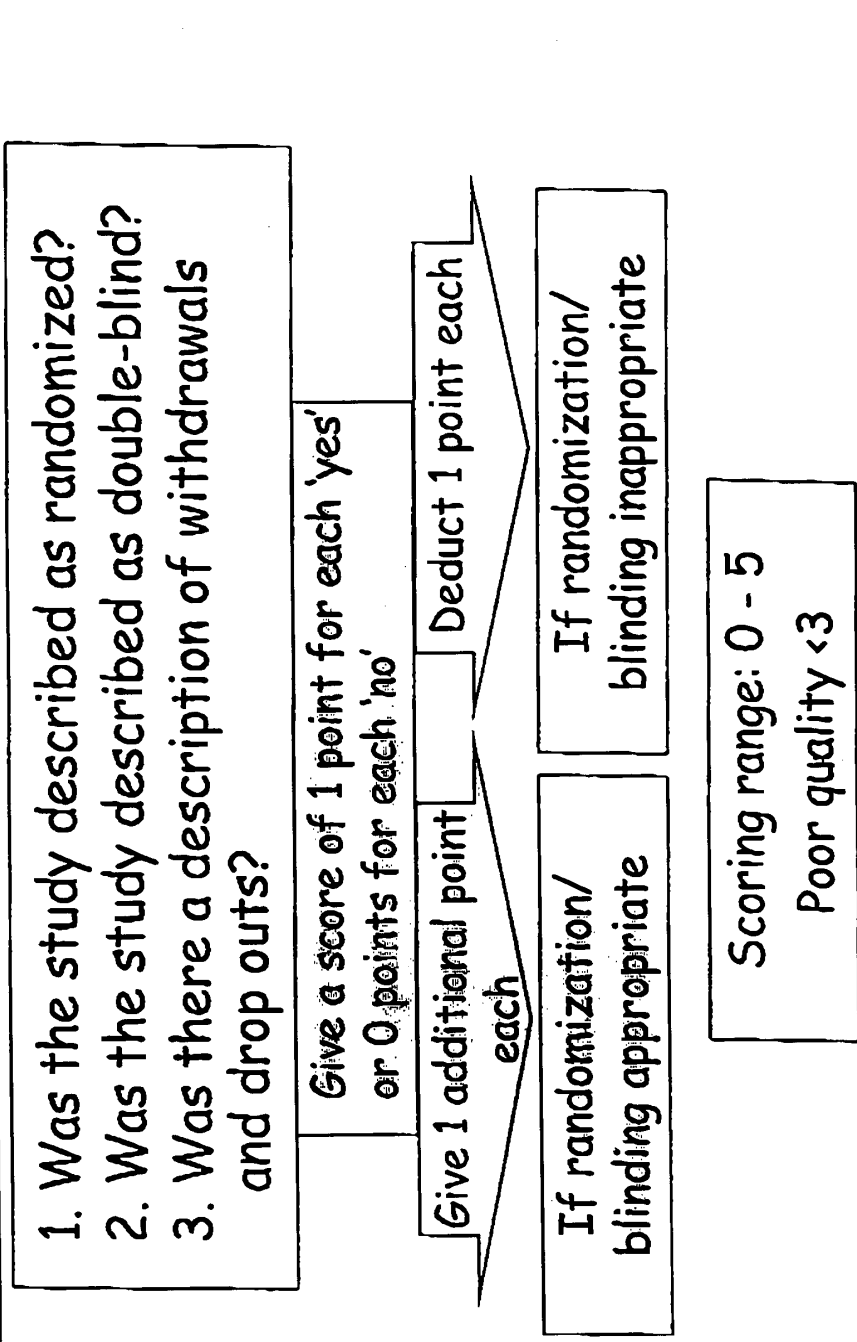


Figure 1: