

# **Is health promotion an effective means of preventing ill health for people aged over 65?**

Prepared By: Victoria Wilson

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## **CLINICAL SCENARIO**

Currently New Zealand's health care sector is facing a crisis presented by an ageing population. The latest figures show that by 2040 one in four New Zealanders will be aged over 65 (Statistics New Zealand, 2006). Health promotion can be defined as the process of facilitating individuals, groups and or communities to take control over their own health (Epp, 1986 as cited in Dyck, 1993). Speaking at a New Zealand Association of Occupational Therapists conference in 2006, the Minister for Health urged occupational therapists to scrutinise and extend their involvement in health and wellness promotion, especially with those who are ageing (Wilcock, 2007). This CAT will discuss the effectiveness of health promotion in the prevention of ill health.

## **FOCUSSED CLINICAL QUESTION**

Is occupational therapist led health promotion an effective means of preventing ill health for people aged over 65?

## **SUMMARY OF SEARCH, 'BEST EVIDENCE' APPRAISED, AND KEY FINDINGS**

A thorough search of four well known databases, relevant to occupational therapy was carried out. This returned a number of studies of varying quality of which four were shortlisted based on their abstracts. These articles included one randomised control trial (RCT), one mixed method study and two qualitative studies. The RCT by Clark et al (1997) and the mixed method, qualitative and quantitative study by Mountain, Mozley, Craig and Ball (2008) were considered 'best evidence' as they contained quantitative research which according to Taylor is most effective in determining the effectiveness of interventions (2007). The studies were also closely related to the focus question and met the inclusion/exclusion criteria for this CAT.

## **CLINICAL BOTTOM LINE**

Based on a randomised control trial by Clark et al (1997) and a mixed method study by Mountain, Mozley, Craig and Ball (2008) there is significant evidence to show that occupational therapist led health promotion can successfully prevent ill health.

### LIMITATION OF THIS CAT

This critical appraisal has been peer reviewed by one lecturer as part of an assignment for Otago Polytechnic, School of Occupational Therapy. The breadth of the review has also been limited by the assignment requirements (ie. 2 articles only were reviewed).

### SEARCH STRATEGY

A thorough search was carried out of four online databases as well as a manual search of references and a hard search of occupational therapy journals held at the Robertson Library.

| Search Location | Search Terms   | Limits   | Results |
|-----------------|--|--|---------|
| CINAHL          | "Health promotion" AND<br>"Occupational Therapy AND<br>Age* OR old* OR geriatric | None   | 14      |
| Cochrane        | As above   | None   | 5       |
| OTSeeker        | "occupational therapy"   | Intervention: Health<br>promotion / risk<br>assessment | 21      |
| ProQuest        | "health promotion" AND<br>"occupational therapy"                                 | None   | 3       |

### INCLUSION CRITERIA

- Adults over 65
- Interventions with focus on physical health promotion
- Occupational therapist involvement
- Located within the community

### EXCLUSION CRITERIA

- Health promotion interventions to address specific diagnoses e.g. obesity
- Studies that did not involve occupational therapists

- Focus on mental health outcomes
- Studies published in languages other than English
- Articles not held electronically or hard copy within the University of Otago Libraries.

## RESULTS OF THE SEARCH

Four articles were explored in depth, ranked and listed below.

| Study Design             | Level | Author (Year)                         |
|--------------------------|-------|---------------------------------------|
| Randomised Control Trial | 2     | Clark et al (1997)                    |
| Mixed Method             | 3     | Mountain, Mosely, Craig & Ball (2008) |
| Qualitative              | 5     | Seymour (1999)                        |
| Qualitative              | 5     | Lauckner, Pentland & Paterson (2007)  |

## BEST EVIDENCE

I have selected two of these articles as providing 'best evidence'. They are Clark et al (1997) and Mountain, Mosley, Craig and Ball (2008). Clark et al is a large scale, highly relevant randomised control trial, influential in the realm of occupational therapist led health promotion for older adults. Mountain, Mosley, Craig and Ball (2008) is a mixed method study incorporating qualitative and quantitative research and highly relevant to the clinical question.

## SUMMARY OF BEST EVIDENCE

**Article 1:** Clark et al., (1997).

**Aim/Objective of the Study:** "To evaluate the effectiveness of preventive occupational therapy (OT) services specially tailored for multi-ethnic, independent-living older adults." (p.1321)

**Study Design:** Quantitative: A randomised controlled trial (RCT)

**Setting:** Two apartment complexes for independent older adults subsidised by the government. Angelus Plaza and Pilgrim Tower in Los Angeles and Pasadena, California respectively.

**Participants:** Participants were recruited in two cohorts to minimise subject interaction and

to rule out any effects of seasonal changes. Recruitment methods included a staffed recruitment table in the lobbies of the two facilities and also at on-site functions. Flyers, letters placed under residents' doors, articles written in the facility newsletter and presentations to groups who met regularly such as the Senior Citizens Club. An initial questionnaire was used to collect information regarding the participants' gender, age, ethnicity, medical conditions, disabilities, marital status, education level, number of children, languages spoken, and length of residence at Angelus Plaza or Pilgrim Tower. The Tinetti Balance Examination was carried out on each subject by an occupational therapist. A geriatrician then undertook a medical history, physical examination, Modified Mini-Mental State Examination, the Geriatric Depression Scale and the LaRule Global Assessment. Inclusion criteria: Adults over 60 years, living independently within Angelus Plaza or Pilgrim Tower or accessing their facilities.

Exclusion criteria: Marked dementia.

A total of 373 participants met the inclusion criteria for the study. Of these 12 withdrew prior to randomisation due to reluctance to make the time commitment. 361 participants were randomised into three groups. This randomisation resulted in 122 subjects in the occupational therapy (OT) led groups, 120 subjects in the social groups, and 119 in the non-treatment group.

Demographics: There were no statistical differences across the treatment groups. The mean age was 74.4 years, 65% of the subjects were female. Ethnic groups represented were Asian (47%), white (23%), African American (17%) and Hispanic (11%). 73% of the subjects lived alone and 23% reported at least one disability.

**Method:**

Procedure: Participants were tested via a battery of five self-administered questionnaires to attain a baseline measurement and again at the end of the nine month treatment period.

Testing was overseen by a research assistant who was blind to the group assignment and study hypothesis. Participants were assigned into one of three groups, an intervention group, active control group and a control group. There were up to ten participants in each group.

Intervention Format: Each OT (intervention) group received two hours of group intervention per week and a total of nine hours of individual OT over the treatment period. Group sessions were run by registered occupational therapists who had been trained in working with elderly populations and were blinded to the study hypothesis. Each group facilitator received ten hours (minimum) of instruction on specific interventions.

The programme for the social (active control) group received a similar amount of intervention as the OT run group. As there were no individual sessions the weekly group sessions were extended to 2.25 hours to ensure a similar number of treatment hours. Activities carried out by the group included those designed to encourage social interaction, such as community outings, craft projects, movies, games, and dances. The groups were run by non-professionals, blinded to the study hypothesis,

**Outcome Measures:** The battery included the Functional Status Questionnaire, Life Satisfaction Index-Z, Center for Epidemiologic Studies (CES) Depression Scale, Medical Outcomes Study (MOS) Short Form General Health Survey and RAND 36-Item Health Status Survey, Short Form-36

**Data Analysis:** Statistical testing was carried out at the .05 level using 2-tailed assessments to test for equivalency

**Results:** There were significant benefits for the OT treatment group across the various domains of health, function and quality of life.

10 out of 15 outcome measures examined displayed statistically significant gains made by the OT group. These gains were made in Functional Status Questionnaire ( $P=.03$ ), Life Satisfaction Index-Z ( $P=.03$ ), MOS Health Perception Survey ( $P=.05$ ) and in 7 out of 8 aspects of the RAND 36-Item Short Form: Bodily pain ( $P=.03$ ), physical functioning ( $P=.008$ ), role limitations attributable to health problems ( $P=.02$ ), vitality ( $P=.004$ ), social functioning ( $P=.05$ ), role limitations attributable to emotional problems ( $P=.05$ ) and general medical health ( $P=.05$ ).

When statistically significant findings were present the control group participants tended to decline, while the OT group displayed either improvements or fewer declines. Both control groups displayed very similar outcomes. There was only one statistically significant change indicated in post treatment outcome measures between the control and active control groups (the RAND SF-36) in which the control group had statistically significant improvement.

**Original Authors' Conclusions:** The OT treatment group displayed significant benefits across a variety of domains. The study provided evidence that preventative OT programmes may lessen the health risks for over 60's. It has dispelled the cliché of "keeping busy keeps you healthy". The study found that the active control group received no further health benefits than those in the control group.

### Critical Appraisal

When completing a critical appraisal of an RCT, Taylor (2007) suggests the study of three aspects, the validity, the results, and the implications for practice.

**Validity:** The study created a clear objective and hypothesis which correlated well to the study method. Each of the three groups was described in detail and statistics for each group were given. However the information regarding the participants was covered in two separate sections of the study. The selected outcome measures were described in detail and appeared valid, but their selection was not justified. As the eligible population for this study was wide an RCT was a valid and appropriate research design. The process of randomisation was explicit but used increasing amounts of jargon. All participant drop-outs were accounted for and the reasons were noted throughout the study, consequently removing any drop-out bias. The literature review was appropriate and provided clear justification for the study from a number of different views. The research assistant who oversaw the baseline testing was blinded to the study hypothesis as were the leaders of the intervention and active control groups. It is unclear as to whether or not the data was analysed by a third party to remove bias. Both the intervention and active control groups received approximately the same amount of contact hours. Informed consent was given by participants prior to commencement of the study. There is no mention of the study being reviewed by an ethics committee.

**Results:** The method of analysis seemed appropriate and thorough. There is detailed description of the data analysis throughout the article. Although the amount of jargon at times made it difficult to understand. As the two control groups provided similar (not exact) results, for the purpose of analysis their results were merged. Hence the three groups were not analysed separately, which may have slightly skewed the data in favour of the intervention group.

**Implications:** The results showed that preventative OT reduced ill health for over 60s. The participants of the study lived in government subsidised accommodation within the United States. This type of accommodation and its facilities appears similar to New Zealand retirement villages which should enable transference of the study. Furthermore these results

should be transferrable to the surrounding village community. The research measured all the key domains discussed in the introduction and a variety of outcomes were used. There was no review of the cost-effectiveness of the intervention in the article. These results would be highly beneficial for OT practice in elder care.

**Conclusion:** This study successfully showed that OT led health promotion can prevent ill health. The study is of a high quality with both face and content validity. The results were statistically significant and reliable. Any OT working with older people in the community or retirement villages should be aware of this study. A cost analysis would have been a useful addition to this study.

#### **Article 2: Mountain et al., (2008)**

**Aim/Objective of the Study:** “To see if an occupation-based health-promoting intervention for community-living older people would be delivered successfully” p.406

**Study Design:** Mixed Method (Qualitative/Quantitative)

**Setting:** The study was conducted in a city (not explicitly named) in the Northern England

**Participants:** Participants were recruited in two separate cohorts due to limited success of the first. The first cohort used district nurses to create interest and suggest individuals whom they thought would benefit. Posters and flyers were put up in locations frequented by older people such as doctor’s surgery, library and the post office. Information was also broadcast on local radio stations and published in local newspapers. However these methods recruited only 3 volunteers. The second cohort involved a “strategy of direct community engagement” (p.408). This strategy was successful with 42 people expressing interest in participation. 13 people consequently withdrew due to an inability to commit to the timeframe. One further person was found to be too cognitively impaired to be included (MMSE score <18). 28 people commenced the study with an age range of 60-92 years, (mean 78.5). 25 were women and 19 were living alone, of which the majority were owner-occupiers. Two people dropped out at an early stage due to ill health. 26 people went on to complete the programme.

**Method:** Prior to commencement of the programme each participant was interviewed by a third party researcher. A baseline measurement was then carried out using a Mini-Mental

State Examination (MMSE) to screen for cognitive impairment, the Geriatric Depression Scale (GDS), Barthel Activities of Daily Living Index, RAND 36 Item Health Survey Questionnaire (SF36). A questionnaire was then used to gather information regarding the participants living circumstances. The eligible participants were interviewed a second time using “qualitative methods of inquiry” (p.408) and were entered into the programme. The second interview followed a semi-structured format in which pre-determined topics were used to elicit participant views about their lifestyle, quality of life and hopes and concerns regarding involvement in the study.

Within two weeks of programme completion all participants were interviewed.

**Results/Findings:**

Quantitative: None of the outcome measures displayed statistically significant changes post intervention. The GDS mean score of the group lowered from 3.2 pre-intervention to 1.5 post-intervention. The SF36 showed an upward trend in all sections of post-intervention scores.

Qualitative: All participants described their quality of life as being heavily influenced by health. 11 participants described decreased confidence due to ageing, illness and disability. The participants displayed varying expectations of participation in the programme. Post intervention interviews produced a wide range of individualised benefits and several themes. These themes included increased self-efficacy, improved wellbeing and fulfilment through engagement. The authors also discovered that the non qualified staff were just as competent as those with qualifications.

**Original Authors’ Conclusions:** The delivery of a health promoting occupation based group was feasible. The group was both beneficial and relevant for the wide age range of participants. As self efficacy was a predominant outcome theme and it was therefore recommended as an outcome measure for future trials. The programme was flexible and appropriate for older individuals with a variety of physical needs. The author acknowledged that the extent of uncertainty in the success of the study did not lend itself to be identified as a basis for future investigations. Instead the author recommends Clark et al., 1997.

**Critical Appraisal**

When completing a critical appraisal of a mixed method study it is important to incorporate assessment of both the qualitative and quantitative aspects. In the appraisal of trustworthiness Taylor suggests investigation of several categories: validity, credibility, transferability, dependability, confirmability and the implications for practice (2007).

**Validity:** The study's broad aim, to assess 'feasibility', was not given explicit parameters and thus difficult to measure. Inclusion and exclusion criteria were mentioned throughout the article. These criteria would have been made clearer if summarised in one section. Both the intervention and active control groups were clearly explained. Finalised intervention themes were not included; instead draft themes were listed but were not discussed. The method of group allocation was not mentioned. Drop outs were accounted for and reasons were provided. The literature review was thorough and appropriate and analysed the necessity for health promoting groups from a variety of views. Ethical and governmental approval was gained prior to study commencement.

**Credibility:** From commencement to conclusion this study lasted eight months. This author believes this to be an acceptable length of time to gather results for a mixed method study. There is good evidence of triangulation of the data. Data was collected via several interviews from researchers not involved in programme delivery, questionnaires and standardised outcome measures. However there was no mention of member checking which would have increased credibility. Academic advisors were employed to analyse progress and certify research credibility. It is unclear as to whether these advisors were from a third party or blinded to the hypothesis.

**Transferability:** One of the two recruitment cohorts was described in detail, the other was not. There was an acceptable amount of information provided regarding the demographics of the groups. However this information was located in two different sections of the article. There was no description of the physical location of the programme and minimal description of the recruitment area. This lack of information results in low transferability.

**Dependability:** There was no information provided regarding the structure of the first interview. There were only vague themes provided from the second interview and the method was described as using "qualitative methods of inquiry" (p.408) no further elaboration is provided. There is no discussion of theme creation or analysis.

**Confirmability:** The study had a "steering group" (p.407) which discusses the practicalities of programme delivery, this increased confirmability. However it is unknown whether the members of this group were involved in the study or not. If the members were third party this would have increased the confirmability of the study. The use of an academic advisor throughout the study helped eliminate bias. There is no mention of member checking,

auditing or collaborative analysis.

**Results:** The methods of quantitative data analysis were clearly explained and justified. The outcome measures were clearly explained but their selection was not justified. Each group's outcomes were not compared as the study implied that the results were the same. Instead an analysis of the participants' pre and post intervention results was carried out. The lack of significant results may be partly attributed to the small sample size.

**Implications for Practice:** The study proposed that OT technical advisors could also successfully implement a health promotion intervention. The study acknowledges that there is a great amount of uncertainty in the results. Therefore I would be hesitant to use it in justification for practice. The article recommends further research into this area and into the creation of a quality of life outcome measure for future studies.

**Conclusion:** The trustworthiness of this study is limited. It claims to have proved its aim of assessing feasibility. Instead the results were ambiguous and not statistically significant. Furthermore the outcome measures were not appropriate in the assessment of feasibility.

### **IMPLICATIONS FOR PRACTICE, EDUCATION AND FURTHER RESEARCH**

The clinical question asked whether health promotion is an effective method in the prevention of ill health for the over 60s. The search results for the clinical question displayed a limited base of studies of varying quality.

Based on the review of Clark et al and Mountain, Mozley, Craig and Ball, there is significant evidence for the benefits of occupational therapist led health promotion. The clinical implication is that occupational therapists are able to successfully prevent ill health via health promoting groups. Occupational therapy technical advisors may also be used to run health promoting groups. However with the exclusion of these articles there appears to be a complete lack of in-depth studies on this topic. This creates an opening into further research on this topic. Research into the appropriateness of outcome measures used in these studies is also warranted.

In order for a study to influence practice it must have a high level of rigour. Taylor (2007) describes internal and external validity as two key factors in determining rigour. Studies also have to be relevant in terms of the participants and the location of treatment.

Clark et al is a good example of a rigorous and relevant study for an occupational therapist working with a population of people over 60 within the community. The therapist would need to weigh up the lack of supplementary studies and the validity of current outcome measures.

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