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Promoting physical activity in the management of depression, the perspectives of older people.

Abstract

While exercise has been widely proposed in the management of depression in older people, the subjective experiences of individuals participating in this intervention have been neglected. Similarly, little is known about the manner in which unsupervised physical activity is adopted by older people as they recover from an episode of depression. This qualitative study sought the views of 11 older people who had recently been admitted to hospital with depression and attended regular in-patient exercise groups. It was found that participants valued opportunities to exercise when in hospital and reported a range of benefits. Following discharge unsupervised physical activity played a crucial part in the recovery process and three typologies were defined which categorised participants' motivation to be physically active. It was concluded that opportunities for older people to join exercise groups when hospitalised with depression are likely to be valued and that individual factors should be acknowledged when promoting post discharge physical activity.

Keywords, Older people, depression, exercise, physical activity

Depression is a leading cause of disability throughout the world (WHO, 2001). It significantly impacts the lives of millions of older adults (Snowden et al, 2008) and is expected to affect even greater numbers as the proportion of older people in the global population grows (Moussavi et al, 2007). Recommended treatments for depression include anti-depressants and psychological therapies (WHO, 2008; NICE, 2004; Remick, 2002). Medication, however takes several weeks to be effective and concordance in the older population can be poor (Maidment et al, 2002). Accessing psychotherapy, on the other hand is problematic due to the lack of suitably qualified professionals (MHF, 2006b; Snowden et al, 2008). Exercise provides another option and has been the focus of considerable interest in the field of mental health in recent years (Smith, 2006). Evidence from randomised controlled trials which include clinically depressed older people suggests that it is useful in the management of low mood (Sjösten & Kivelä, 2006).

Regular physical activity is also important for older people irrespective of their mental health needs because it offers a range of physical health benefits and provides some protection from medical conditions they are at risk of such as osteoporosis and hypertension (Nied & Franklin 2002; Young & Dinan, 2005). Furthermore, exercise can help maintain functional independence as even the healthiest older people lose muscle mass and experience reduced joint flexibility as a consequence of the ageing process (McMurdo, 2000; Taylor et al, 2004).

Unfortunately, despite being aware of the positive effects of an active lifestyle (Crombie et al, 2004), older adults in general are more likely than any other age group to lead a sedentary lifestyle (DOH, 2003; CDC, 2007; ABS, 2007). For older people

admitted to hospital due to severe depression, achieving the activity levels necessary to gain benefits can be particularly difficult. This is due to a combination of the reduced energy and greater fatigability (WHO, 1992) associated with depression and the fact that they are likely to spend at least a month (Sitta et al, 2006; HES, 2007) in an environment where opportunities to be physical active are often scarce (Radcliffe & Smith, 2007). Therefore, although engaging in physical activity when hospitalised with depression is potentially helpful for older people, promoting it effectively is likely to be a challenge.

Most research in this area has focused on the effects of supervised activities in terms of a measurable reduction in the symptoms of depression (Mather et al, 2002; Tsang et al, 2006; Blumenthal et al, 2007; Kerse et al, 2008). Consequently recommendations in the literature (Young & Dinan, 2005) and UK government guidelines (NICE, 2004) tend to involve structured activities such as instructor lead exercise groups. However, formal exercise programmes can be seen by older people at large as intimidating, competitive or boring and individuals may have difficulty accessing such interventions or even hearing about them in the first place (Illiffe et al, 1994). In contrast, it is recognised that research which addresses the adoption of self-directed physical activity by older people in unsupervised community settings has been scarce (Faulkner & Biddle, 2004; Craft et al, 2007).

A further result of the prevailing biomedical approach in this field is a tendency to neglect the perspective of the depressed person as they engage in physical activity (Sorensen, 2006; Wallace & Lahti, 2005). Acknowledgement of the individual context is important because each person's relationship with physical activity is

unique and changeable (Stathi et al, 2002; Faulkner & Biddle, 2004). Indeed, schemes which promote physical activity for older people in general have been criticised on the basis that little consideration is given to the variety of meanings that physical activity has for people (Thurston & Green, 2004). Similarly, each individual's experience of mental illness varies over time and is influenced by a variety of psychosocial factors (Faulkner & Carless, 2006). It is therefore highly unlikely that a single exercise based intervention will be identified which is found useful by all. In recognition of this probability, research adopting an interpretivist viewpoint has been undertaken with younger mentally ill people that has explored the experience of physical activity in terms of psychosocial benefit rather than a reduction of depressive symptoms (Carless & Douglas, 2004). However, there is little evidence of this approach being used to explore the experiences of older people receiving treatment for depression. Finally, on a practical level, talking to older people about what services they want can assist in the development of effective interventions (Wallin et al, 2007).

Study Aims

This project set out to explore the way in which older people admitted to hospital with depression experience exercise groups and the manner in which they engage in unsupervised physical activity once discharged.

Setting

The study was based at an in-patient facility for older people with mental health needs in the North of England. Exercise groups are run on five mornings a week by members of the physiotherapy team in a large room adjacent to the ward. Sessions last

for approximately 30 minutes and include warming up exercises, slow stretches and more vigorous activities designed to stimulate cardio-vascular function. Most activities are undertaken in a seated position although weight-bearing exercises are included. Music is used to encourage participation. These sessions are open to all patients on the ward who wish to join and are considered well enough to do so by nursing and physiotherapy staff.

Methods

Recruitment of participants

Local ethics committee approval was obtained and 17 potential participants were purposively selected using exercise group attendance records. All had been admitted to hospital with severe depression, attended a minimum of six exercise sessions and been discharged for at least three months prior to inclusion in the study. Individuals were approached via their community psychiatric nurse who gave short-listed individuals information about the study and asked them to return a completed consent form in a pre-paid envelope if they wished to participate. Eleven participants aged 69-86 years were recruited from the initial short list of which nine were community dwelling and two were nursing home residents. The group consisted of five males and six females. Nine were white, one black and one an Indian born Sikh. Participants' names were changed to ensure anonymity.

Data collection and analysis

Semi-structured interviews were undertaken either at the participants' homes or at a local day centre if preferred. Interviews were tape recorded and then transcribed. The framework approach to data analysis was adopted (Pope *et al*, 2000). This entailed

identifying key themes within the data which were placed into categories and tabulated in the form of matrices. Completed matrices were reviewed and interpreted in relation to the study aims.

Findings

Study findings are presented here in the form of salient shared themes which emerged from the data analysis. Themes relate to perceptions of the hospital based exercise group, attitudes to physical activity in general and then engagement in it following discharge. Three typologies to which the participants were assigned will then be described. These typologies were created through the synthesis of reported themes and illustrate each participant's overall attitude to physical activity and its role in the recovery process.

- **Attitudes to hospital based exercise groups**

All individuals described favourable attitudes to the exercise groups. Most stated that they enjoyed the sessions and a number of participants reported that they looked forward to them. While two participants reported that they attended the sessions in response to staff encouragement, the majority stated that they were sufficiently motivated to attend without persuasion. On the other hand, participation in the sessions could be difficult for some, particularly when they were first admitted and feeling very depressed:

“At first it was daunting going into any of the groups. I was overwhelmed by the people because I didn't know them. When you're really down you feel that you can't make that effort to go. You just couldn't face going”
(Male 75 years).

- **Perceived benefits of hospital based exercise**

Although comments were made that the low mood experienced when in hospital made it difficult to judge whether the exercise groups had been helpful or not, participants were able to describe a number of benefits resulting from them. Several spoke about a purely physical benefit. For example, it was reported that regular exercise made arthritic joints feel more comfortable and therefore that walking had become easier. Most participants appeared to value the opportunity to “keep active”. Others described a sense of physical well-being which resulted from the exercise;

“They said breathe in and all this sort of thing. I felt great. I always felt happier when I came out “ (Female 75).

“Enjoyment” was reported as a benefit by several participants and most of them described positive mood effects which lasted for varying amounts of time. For one participant the raised mood lasted for the rest of the day following the exercise session. Diversion emerged as another common theme with a number of people stating that the groups helped to distract them from their problems, pass time and add structure to their day. Finally, a sense of competence was reported which arose from the awareness of the ability to perform the exercises. Unfortunately these effects could be short lived;

“What I used to dread then was going to the next activity. Because I was quite happy with the exercise group. I could do that. I enjoyed that. Then I was fearful going into the discussion group. When you’re so low you feel that you don’t have the capacity to take part. You feel that you don’t know anything any more” (Male 75 years).

The following themes identify beliefs that were shared by members of the study group.

- **An identification with physical activity**

Firstly virtually all were found to identify closely with leading an active lifestyle. This association with being active was reported even among those who described low levels of physical activity both before and after their hospital admission. Their views on the subject could be expressed quite stridently:

“I think everyone should be active. Whether you’re alright or not you should be active” (Female 69).

Despite low levels of reported physical activity within the previous year or so most interviewees reported regular participation in activity in the more distant past. Familiarity with physical activity appeared to predispose individuals to engage in hospital based exercise groups. For instance, when one participant was asked why he regularly attended the groups while others did not he replied as follows:

“(It was) probably because I’d always been active. That was probably the reason. People who haven’t been active probably don’t want to be bothered” (Male 75 years).

Although being highly active in the past several members of the group spoke with resignation about being much less active currently;

“This lack of activity doesn’t bother me at all. I haven’t missed golf at all. I’ve had some great times.....good trips, smashing days out and I’ve got all of those memories you see” (Male 71 years).

- **A belief in the link between physical activity and mood**

A second belief reported by most individuals was that being active exerted a strong positive effect on their mood. This could reflect a belief in the long term effects of leading an active lifestyle;

“I think the fitter you feel the better you feel. As opposed to doing no physical activity at all and coming home and sitting in a chair and watching telly. I think it helps tremendously with being active” (Male 75).

They also acknowledged the short term effects of a single bout of activity such as feeling better for having had a walk outside their home. Although, despite associating physical activity with positive mood effects individuals also recognised that commencing activities could be difficult. Conversely, people in the study described adverse mood effects when they were unable to be as active as they wanted to be due to factors such as poor weather.

The following themes relate to participants views on being physically active following discharge from hospital;

- **Motivation for physical activity following discharge.**

Several reported that they had used physical activity after leaving hospital to lift mood and regain of self-identity. Walking outside was the most popular activity;

“If I feel down a little or low I want to go for a walk. To get out in the open air and walk around. If I can put it like this, it makes me feel normal again. So its very important to me. The physical activity that I do. Particularly on my own” (Female 86 years).

Study participants spoke about gaining a sense of accomplishment through completing physical tasks and reaching goals. Significantly, this sense of accomplishment was not necessarily the product of an enjoyable activity.

“I enjoy gardening when its finished. When its all tidy and all the lawns are trimmed. But I’m not a right lover when I’m doing it. I know it’s a bit silly. I love it when its done. When its done and looking nice I’m quite pleased with myself” (Male 71).

Just as exercise had provided a welcome diversion in hospital, physical activity was used by some following discharge as a mechanism for keeping busy and coping with living alone. One man expressed some concern that his chores around the house and garden would run out as winter set in and he would struggle to fill his time. This suggests that for some individuals ensuring that they continued to enjoy the benefits of physical activity in the future could be of concern.

- **Functional mobility and regaining independence**

The desire for functional independence was clearly expressed by members of the study group and they recognised the need to be physically active in order to achieve this. Several individuals described their intention to work hard on their mobility in order to access the community, for example:

“Its very important that I’m independent and by doing these daily walks it gives me more independence. And hopefully eventually I’ll be able to manage without my daughter being here. That’s my goal; going to Asda (the local supermarket) by myself. I want to do that because my daughter will have to go back to work and I’ll have to depend on myself then” (Female 86)

Therefore, although participants reported that they enjoyed walking outside, for some it was the fact that it enabled them to look after themselves that was most valued.

- **Physical activity as a yardstick to gauge recovery**

For some, specific events during the recovery process such as visiting their church unassisted for the first time since being in hospital held particular significance. Re-engaging in physical activity was also described as a catalyst for recovery;

“...Some children knocked some copings off outside and I looked at them and if I'd been down like before I'd not have bothered but I set to straight away. I came in, got a hammer, a chisel.....cleaned the mortar off and got some cement and started to do it. Got physically working and I just seemed to start then and it's continued ever since” (Male 75 years).

Similarly, setting themselves activity related goals such as trips on public transport and re-engaging in activities again gave the group something tangible to aim for during their recovery from depression.

- **Barriers to physical activity**

While old age in itself was rarely identified as a barrier to physical activity the physical health issues associated with getting older was considered as such by many. Health problems usually took the form of chronic disabling conditions such as arthritis and peripheral vascular disease.

“I can't walk that far...about a hundred yards and then my legs start. It's the old fashioned hardening of the arteries in my legs” (Male 71).

Leading an active life was described as difficult by one man because his wife was struggling with ill-health. Psychological barriers such as lack of confidence were also

described several months after discharge from hospital which illustrates the long lasting effects of depression;

“I could do anything before. I was always very confident, my brain working really well. I think that’s what’s affected me. I haven’t got that confidence now. I don’t feel well enough to do it” (Female 78 years).

Although some identified lack of knowledge about local exercise opportunities and public transport provision as obstacles others suggested that their needs were unlikely to be met by available services anyway. For example, one female expressed the view that local walking groups covered more distance than she was currently able to manage. Finally, wet weather was identified as being a barrier to walking outside.

- **The influence of the social context**

Re-engaging in social relationships following discharge was found to have both positive and negative impact on the physical activity levels of the study group. For some, practical help from family in the form of transport resulted in the participants becoming virtually sedentary. One participant described how she was currently being looked after by her large family;

“My daughter comes and does, like changing my duvet or turning my mattress over, things like that. She comes and does what I’m unable to do with my breathing. One of my sons will come and clean the windows inside and another comes to see to the garden. We really are being taken care of” (Female 78 years).

On the other hand, the study found that family relationships stimulated activity by providing a reason for planning visits using public transport and offering practical help in being more active. For example, one participant’s daughter worked in a nearby

gym and promised to help him to improve his fitness by providing a new programme for him to follow. Likewise, a desire to socially engage with others provided some with the motivation to leave the house and attempt to walk a quarter mile to the local day centre.

- **Motivation for post-discharge activity; three typologies**

While all members of the group described being physically active as being important to them after leaving hospital, they expressed this in a variety of ways. Three typologies emerged:

i) “Dedicated exercisers”

The members of this category described a return to activities such as swimming walking and attending the gym. They appeared highly motivated to participate in regular exercise because they enjoyed the activity itself and regular participation had been normal for them over a considerable length of time. Because they reported valuing the activity itself they can be described as being process orientated.

ii) “Active for functional benefits”

Individuals in the second category were partly motivated by enjoyment but undertook activity primarily to gain benefits such as raised mood, functional independence and fulfilment of their social role. Because individuals in this group were interested in the results of their activity rather than the activity itself they can be described as being goal orientated.

iii) “Resigned to doing less”

People in the third category benefited from exercise groups when they were in hospital but once discharged they found that the barriers to activity outweighed the facilitators and they had become resigned to leading a less active lifestyle.

Discussion

This study found that individuals can be highly motivated to participate in regular exercise groups despite being sufficiently depressed to warrant an admission to hospital. This is significant in view of the low activity levels within the older population at large (DOH, 2003; CDC 2007; ABS 2008) and the fact that depression is thought to severely limit one's ability to perform any task (Craft & Landers, 1998). The suggestion that older people value opportunities to be active when in hospital and on discharge finding echoes a recent British study involving community dwelling adult psychiatric patients who enjoyed exercise and wanted to do more (Ussher et al, 2007). Nevertheless, it should be remembered that activity was not embraced by all who were offered it and even the most committed individuals reported struggling with the barriers associated with low mood.

The fact that diversion was widely reported as a benefit in this study indicates that the psychosocial effects of physical activity may be particularly important for depressed older people in hospital. Exercise groups are welcomed partly as an opportunity to pass time and provide structure to the day. Others have described the benefit of physical activity for the mentally ill in terms of diversion (Peluso & De Andrade, 2005; Faulkner & Biddle, 2004). The implication that older people in hospital value diversion may indicate as much about the lack of activity on the ward as the attraction of exercise.

By their nature groups are social events and this characteristic was recognised by the study participants. Ironically, although promoting social interaction has been identified as being an important element in the promotion of positive mental health

(Adams et al, 2004) people admitted to mental health units are likely spend most of their time socially disengaged and alone (Radcliffe & Smith, 2007). Encouraging people to join a group provides a reason for leaving the confines of their room and relating to others.

This study suggests that depressed older people in hospital can gain a sense of competence through participation in exercise groups. This is significant because according to psychological models such as Self Determination Theory (SDT) (Deci & Ryan 1985; Ryan & Deci 2000) competence is an innate psychological need and a vital component of every individual's sense of well-being. As well as making the individual feel good about themselves, a raised sense of competence is likely to increase self-efficacy levels (Ostir et al, 2003). Self-efficacy plays a crucial role in moderating exercise behaviour as both a determinant and a consequence of physical activity (Wallace & Lahti, 2005). While low levels of self-efficacy have been identified as a barrier to physical activity by people experiencing mental ill-health (Ussher et al, 2006) raised self-efficacy can lead to increased engagement and enhanced quality of life (Elavsky et al, 2005). Theoretically therefore, promoting competence through exercise could result in a variety of other psychological benefits. This study found that the positive effects of hospital based exercise were less pronounced when the individual concerned was first admitted and severely depressed.

A theoretical construct related to SDT is "Self Schema" which refers to cognitive structures relating to behaviours that are important to the individual and which they closely associate with. Sorensen (2006) identified people with exercise self schemas by asking them whether they considered themselves to be an "active person" and

claimed that the possession of an “exercise self schema” increases the probability of engaging in physical activity. Our findings suggest people with an exercise self-schema are indeed likely to engage in exercise when in hospital, though identifying with physical activity does not necessarily translate into consistently high levels of activity after discharge. Faulkner & Biddle (2004) found similar contradictions in their study in which the individual who expressed most ambivalence about physical activity was the most active. This suggests that in the community setting other factors outweigh self schema in influencing activity levels.

Our findings suggest that after leaving hospital older people recovering from depression are able to perform self-directed activities such as walking in order to lift their mood. Participants’ accounts of physical activity in community settings fill a gap in the literature identified by other researchers (Faulkner & Biddle, 2004). Walking has been identified as being popular in both the younger severely mentally ill (Richardson et al, 2005; Sorensen, 2006; Ussher et al, 2007) and the older population in general.

However, although improving their mood was clearly part of the participants’ motivation to be active when discharged, there seems more to being active than simply reducing the symptoms of depression through diversion. Older people recovering from depression appear to care more about regaining their independence and returning to normality than engaging in specific activities. For some in the present study, improvements in mood were a welcome bi-product in the achievement of independence and a return to normality. Being active appears to play an important role in successful recovery from mental ill-health in terms of rebuilding a sense of

self in a similar manner to that described elsewhere with younger adults (Carless & Douglas, 2007). The variety of meanings that the study group attached to physical activity suggests that attempts at promoting physical activity for older people recovering from depression are most likely to be effective if the wider dimensions of their lives are taken into account. This has been pointed out in the past by Thurston and Green (2004) in reference to promoting physical activity in the older population at large.

Physical ill-health was the most widely reported barrier to activity described by the study group and is a widely discussed in the literature (Crombie et al, 2005; Illiffe et al, 1994; Stead et al, 1997). This is to be expected as chronic diseases such as osteoarthritis are commonplace within this age group (Young & Dinan, 2005) and are bound to impact on activity levels. For others in the current study, lack of confidence was a barrier to being active outside the home. Faulkner & Biddle (2004) found that low levels of confidence were also a major barrier to younger people with mental health needs attending gym at local health centre. Successfully engaging in physical activity when at home is therefore likely to be more difficult for older people than participating in a group when in the supportive environment of hospital.

Helping older people overcome the effects of chronic physical ill-health may be difficult to achieve, particularly when individuals become resigned to being less active. However, some of the other barriers mentioned by the participants such as lack of confidence and transport difficulties may be easier to address. Others have recognised the importance that older people attach to effective transport (Marsden *et al*, 2007). Tackling practical barriers is vital, particularly in the light of current UK

government guidelines which recommend the development of community based exercise programmes (NICE, 2008).

Limitations

This study has certain limitations. Firstly, the sample size was small which suggests that the results are not generalisable to the older population at large. However, qualitative studies such as this do not aim at producing findings that are relevant to all but focus more on the meaning which individuals attach to their unique experience (Litva & Jacoby, 2002). For a study of this design a small sample is sufficient to allow data saturation to occur. In fact, many studies investigating the use of physical activity in the field of mental health have included less than 10 participants (Faulkner & Biddle, 2004). Secondly, a certain amount of bias is inevitable as a result of the researcher talking to the recipients of a service that he has provided. It was therefore important to be reflexive regarding the role of the researcher as a promoter of physical activity and be as transparent as possible about the methods employed in the study (Meyrick, 2006). Finally, the study failed to recruit anyone Bradford's large pakistani community. Such an omission is significant firstly because the prevalence of depression among people living in the UK who originate from the Punjab region of India and Pakistan has been found to be higher than the white population (Bhui et al, 2004). Secondly, evidence suggests that South Asians are less likely to participate in physical activity than the wider British population (DOH, 2003). Further research is therefore needed to consider issues relating to ethnicity in this field.

Conclusions

This research suggests that depressed older people who are admitted to hospital can be well motivated to join exercise groups and are able to identify a range of physical and psycho-social benefits from participating in them. People who identify with being physically active and who are aware of the potential benefit in terms of their mood are most likely to attend. Opportunities for regular group exercise within older people's mental health services are therefore likely to be welcomed by people receiving in-patient care. Physical activity can also play an important part in the recovery process when returning home and is adopted in a highly individual manner. Some older people will search out opportunities to be active because it is important for them to perform exercise, while for others re-engaging in physical activity is an important aspect of their recovery and a vital key to regaining independence. Barriers such as ill-health, reduced motivation and practical difficulties make being active difficult for some older people. Such individuals may benefit from individualised goal orientated interventions in order to gain the benefits of being active.

Bibliography

ABS (Australian Bureau of Statistics) (2006). National Health Survey, summary of results 2004-2005. Canberra, ABS.

Adams K, Sanders S and Auth, E. (2004) Loneliness and depression in independent living retirement communities: risk and resilience factors. *Aging & Mental Health* **8** 475-485.

Blummenthal J, Babyak M, Doraiswamy P *et al.* (2007) Exercise and pharmacotherapy in the treatment of major depressive disorder. *Psychosomatic Medicine* **69** 587-596.

Bhui K, Bhugra D, Goldberg D *et al.* (2004) Assessing the prevalence of depression in Punjabi and English primary care attenders: the role of culture, physical illness and somatic symptoms. *Transcultural Psychiatry* **41** 307-322.

Carless D and Douglas K (2004) A golf programme for people with severe and enduring mental health problems. *Journal of Mental Health Promotion* **3** 26-39.

Carless D and Douglas K (2007) Narrative identity and mental health: How men with serious mental illness re-story their lives through sport and exercise *Psychology of Sport and Exercise* (In press).

CDC (Centers for Disease Control and Prevention) (2007). Prevalence of regular physical activity among adults- United States, 2001 and 2005. *Morbidity and mortality weekly report* **56** 1209-1213.

Craft L and Landers D (1998) The Effect of Exercise on Clinical Depression and Depression resulting from Mental Illness: A Meta analysis. *Journal of Sport and Exercise Psychology* **20** 339-357.

Craft L, Freund K, Culpepper L *et al.* (2007) Intensive study of exercise for depressive symptoms in women. *Journal of Womens Health* **16** 1499-1509.

Crombie I, Irvine L, Williams *et al.* (2004) Why older people do not participate in leisure time physical activity: a survey of activity levels, beliefs and deterrents *Age and Ageing* **33** 287-292.

Deci E and Ryan R (1985) *Intrinsic motivation and self determination in human behaviour*. New York, Plenum.

DOH (2003) *Health Survey for England 1994-2003*. London, Department of Health.

Elavsky S, McAuley E, Motl E *et al.* (2005) Physical activity enhances long term quality of life in older adults: efficacy, esteem and affective influences. *Am Behav Med* **3** 38-145.

Faulkner G and Biddle S (2004) Exercise and Depression: Considering Variability and Contextuality *Journal of sport and Exercise Psychology* **26** 3-18.

Faulkner G. and Carless D (2006) Physical Activity in the Process of Psychiatric Rehabilitation : Theoretical and Methodological Issues. *Psychiatric Rehabilitation Journal* **29** 258-267.

HES (2007) "Hospital episode statistics. Primary diagnosis: summary" [Internet] Available on <<http://www.hesonline.nhs.uk>> [Accessed on 1st September 2008].

Illiffe S, Tai S, Gould M *et al* (1994) Prescribing exercise in general practice. *BMJ* **309** 494-495.

Kerse N, Falloon K, Moyes S *et al.* (2008) Depression in late life: an intervention trial of exercise. Design and recruitment of a randomised controlled trial. *BMC Geriatrics* **8** 12.

Litva and Jacoby (2002) in Craig J The evidence based practice manual for nurses. Edinburgh, Churchill Livingstone (136-161).

Maidment R, Livingston G and Katona C (2002) "Just keep taking the tablets". Adherence to anti-depressant treatment in older people in primary care. *International Journal of Geriatric Psychiatry* **17** 752-757.

Marsden G, Jopson A, Cattan M *et al* (2007) *Transport and Older People: Integrating transport planning tools with user needs*. Leeds, University of Leeds and Leeds Metropolitan University.

Mather A, Rodriguez C, Guthrie M *et al.* (2002) Effects of exercise on depressive symptoms in older adults with poorly responsive depressive disorder. A randomised controlled trial. *British Journal of Psychiatry* **180** 411-415.

McMurdo M (2000) A healthy old age: realistic or futile goal. *BMJ* **321** 1149-1151.

Meyrick J (2006) What is good qualitative research? A first step towards a comprehensive approach to judging rigour/quality. *Journal of Health Psychology* **11** 799-808.

MHF (2006) We need to talk. The case for psychological therapy on the NHS. London, Mental Health Foundation.

Moussavi S, Chatterji S, Verdes E *et al.* (2007) Depression, chronic diseases, and decrements in health: results from the World Health Surveys. *The Lancet* **370** 851-858.

NICE (2004) Depression: Management of depression in primary and secondary care. Quick reference guide. London, National Institute for Health and Clinical Excellence.

NICE (2008) *Occupational therapy and physical activity interventions to promote the mental well-being of older people in primary care and residential care*. (Draft) London, National Institute for Health and Clinical Excellence.

Nied R and Franklin B (2002) Promoting and prescribing exercise for the elderly. *Am Fam Physician* **65** 419-426.

Peluso M, and Guerra de Andrade L (2005) Physical activity and mental health: the association between exercise and mood. *Clinics* **60** 61-70.

Pope C, Zeibland S and Mays N (2000) Qualitative research in health care. Analysing qualitative data. *BMJ* **320** 114-6.

Radcliffe J and Smith R (2007) Acute in-patient psychiatry: how patients spend their time on acute psychiatric wards, *Psychiatric Bulletin* **31** 167-170.

Remick R (2002) Diagnosis and management of depression in primary care a clinical update and review. *CMAJ* **167** 1253-60.

Richardson C, Faulkner G, McDevitt J *et al.* (2005) Integrating Physical activity Into Mental Health Services for Persons With Serious Mental Illness, *Psychiatric Services* **56** 324-331.

Ryan R and Deci E (2000) Self-determination theory and the facilitation of intrinsic motivation, social development, and well being. *American Psychologist* **55** 68-78.

Sitta P, Brand S, Schneider F *et al.* (2006) Duration of inpatient depression treatment. Fair benchmarks between hospitals. *Psychother Psychosom Med Psychol* **56** 128-137.

Sjösten N and Kivelä S (2006) The effects of physical exercise on depressive symptoms among the aged: a systematic review. *International Journal of Geriatric Psychiatry* **21** 410-418.

Smith T (2006) Blood, sweat, and tears: exercise in the management of mental and physical health problems. *Clinical Psychology: Science and Practice* **13** 198-202.

Snowden M, Steinman L and Frederick J (2008) Treating depression in older adults: challenges to implementing the recommendations of an expert panel. *Prev Chron Dis* **5** [internet] Available on <http://www.cdc.gov/pcd/issues/2008/jan07_0154.htm> [accessed on 15th September 2008].

Sorensen M (2006) Motivation for physical activity of psychiatric patients when physical activity was offered as part of treatment. *Scandinavian Journal of Medicine and Science in Sports* **16** 391-398.

Stead M, Wimbush E, Eadie D *et al.* (1997) A Qualitative study of older people's perception of ageing and exercise: the implications for health promotion. *Health Promotion International* **19** 379-387.

Taylor A, Cable N, Faulkner G *et al.* (2004) Physical activity and older adults: a review of health benefits and the effectiveness of interventions. *J Sports Sciences* **22** 703-725.

Thurston M and Green K (2004) Adherence to exercise in later life: how can exercise programmes be made more effective? *Health Promotion International* **19** 379-387.

Tsang H, Fung K, Chan A *et al.* (2006) Effect of qigong exercise programme on elderly with depression. *International Journal of Geriatric Psychiatry* **21** 890-897.

Ussher M, Stanbury L, Cheeseman V *et al.* (2007) Physical activity preferences and perceived barriers to activity among persons with severe mental illness in the United Kingdom. *Psychiatric Services* **58** 405-408.

Wallace K and Lahti E (2005) Motivation in later life. A psychological perspective. *Topics in Geriatric Rehab* 21(2) 95-106.

Wallin M, Talvitie U, Cattan, M. *et al.* (2007) The meaning that older people give to their rehabilitation experience. *Ageing and Society* **27** 147-164.

WHO (1992) ICD 10. Classification of mental and behavioural disorders. Clinical descriptions and diagnostic guidelines. Geneva, World Health Organisation.

WHO (2001) The World Health Report 2001. Geneva, World health Organisation.

WHO (2008) Depression Factsheet [internet] available on
<http://www.who.int/mental_health/mangement> [accessed 15th September 2008].

Young A and Dinan S (2005) Activity in later life. *BMJ* **330** 189-192.