

Adherence to exercise in later life: how can exercise on prescription programmes be made more effective?

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SUMMARY

A broad consensus has emerged in relation to the desirability of promoting exercise among a variety of 'at risk' groups via 'exercise on prescription' (EoP) schemes, as an alternative to orthodox, biomedical approaches to the management of health problems. Underpinning the rationale for such schemes is the notion that they can act as vehicles for encouraging long-term adherence to exercise. Whilst there is a common sense appeal to using EoP schemes to promote exercise, research to date suggests that evidence of their impact is limited. This paper attempts to make sense of these findings in the light of recent debates about adult lifestyles and exercise. More specifically, it brings work in the sociology of leisure to bear on the topic, on the premise that any study of adults' propensity towards sustainable physical activity needs to be viewed as an aspect of their lives 'in the round'. Such an analysis points up the

value of synthesizing perspectives from across the disciplinary divide in order to shed light on particular 'problems', which obviate the necessity for further empirical work. The paper concludes by identifying a number of implications for public health policy and practice with respect to the matter of encouraging lifelong participation in sport and exercise in general, and via EoP schemes in particular. One such implication is the development of a model for understanding participation that shifts the emphasis away from a focus on motivation and behaviour change per se towards satisfaction and enjoyment through the development of skills and relationships. Reconceptualizing the matter of participation in this way is likely to lead not only to a more realistic appreciation of what can be expected from EoP schemes, but also a more adequate understanding of adherence to exercise in later life.

Key words: adherence; 'exercise on prescription'; older people

INTRODUCTION

A broad consensus has emerged in recent years in relation to the desirability of promoting exercise through the development of active lifestyles. Within the UK, this consensus is apparent in a number of government policy documents [Department of Health (DoH), 1995; DoH, 1998; DoH, 1999; DoH, 2000a; DoH, 2000b; DoH, 2001a; DoH, 2002a; DoH, 2002b], which make reference to a breadth of compelling evidence demonstrating that regular, frequent physical activity can lead to a range of health benefits. These include increased life expectancy, reduced risk of coronary heart disease,

cerebrovascular accidents, diabetes, hypertension and hip fractures (Lawlor and Hanratty, 2001), the control of obesity [National Audit Office (NAO), 2001], positive mental health outcomes (Biddle *et al.*, 2000), improved mobility, coordination and balance in older people (Young, 2001), and reduced risk from colon cancer and possibly other cancers (Hunt *et al.*, 2001; DoH, 2002b). For older people in particular, sufficient aerobic exercise, even if started as late as age 60 years, is associated with a 1- to 2-year increase in life expectancy as well as improved functional independence and quality of life

benefits (Rooney, 1993; Health Education Authority, 1999; DoH, 2001a; Young, 2001). Yet between 70 and 80% of the UK's population are insufficiently active to benefit their health (Health Education Authority and Sports Council, 1992; Erens and Primates, 1999) and 40% of adults aged >65 years report spending little time on exercise, despite being aware of the risks associated with inactivity (Ebersole and Hess, 1994, cited in Spencer, 1999).

Against this background, 'exercise on prescription' (EoP) has emerged as one type of intervention for encouraging patients to become more active through a prescription for exercise (Riddoch *et al.*, 1998; Iliffe *et al.*, 2001; Lawlor and Hanratty, 2001). Whilst there is an increasing degree of variation in the exact form of schemes, this paper focuses on the general idea of a primary care intervention making use of local community-based leisure centres, which provide structured and supported exercise programmes, and to which general practitioners (GPs) can refer their patients. Such schemes can reach a large proportion of the general population with the potential for sizeable public health benefits (Harland *et al.*, 1999; Stahl *et al.*, 2002). The UK government has continued to prioritize EoP schemes to 'increase activity levels, reduce obesity and tackle chronic disease' [(DoH, 2001b), p. iii], as well as expand their numbers through new policy initiatives such as Healthy Living Centres (Department for Culture, Media and Sport, 2002). This proliferation—a recent estimate suggests that there may be as many as 1000 schemes (Riddoch, 2002)—is reflected in the development of similar primary care based schemes in the United States and New Zealand (Norris *et al.*, 2000; Elley *et al.*, 2003).

Our concern in this paper surrounds the likely impact of EoP schemes in the promotion of sustainable physical activity in the light of what is known about adults' leisure lives. We argue that any attempt to influence adults' predispositions towards sustainable physical activity needs to view their exercise patterns as an aspect of their lives 'in the round' (Elias, 1978). Elias used this phrase to argue that human beings should be studied in relation to their 'bio-, psycho-, sociohistorical aspects, and with the complex, not well understood ways in which these aspects are interconnected' [(Dunning, 2002), p. 215]. Thus, understanding exercise patterns as an aspect of lifestyle in general and the ways in which these are profoundly shaped throughout the life-course

by age, class and gender, by drawing on the sociological literature on leisure in later life, can illuminate the problem of lifelong adherence to active lifestyles (Green, 2002).

In the first instance, we give further consideration to EoP schemes and their effectiveness by focusing on the issue of 'adherence'.

RECONSIDERING EXERCISE ON PRESCRIPTION

Prominent among the various justifications for EoP schemes has been the aim of bringing about long-term adherence to active lifestyles among those who, typically, have disengaged from physical activity earlier in their lives. Proponents also argue that patients are motivated to exercise—at least in the short term—as a consequence of receiving advice from their GP (British Heart Foundation, 1996; McKenna *et al.*, 1998; Stevens *et al.*, 1998; King, 2000; Elley *et al.*, 2003). However, recent evidence suggests that simple advice in routine primary care consultations may not be effective in leading to sustained physical activity behaviour (Lawlor and Hanratty, 2001).

There is also limited evidence regarding the impact of EoP schemes, either in the UK (Lawlor and Hanratty, 2001) or worldwide (Stahl *et al.*, 2002). Attention has been drawn to the limited amount of systematic and rigorous evaluation of such schemes (Fox *et al.*, 1997; Hammond *et al.*, 1997; Riddoch *et al.*, 1998; Lawlor and Hanratty, 2001; NAO, 2001; Carver, 2003). Where evaluation has taken place, it has tended not to involve the long-term follow up of individuals. Iliffe *et al.* (Iliffe *et al.*, 1994) point out that there is little evidence to suggest that EoP schemes attract those who have most to gain from such programmes and, moreover, that those most at risk are least likely to adhere to them (Taylor *et al.*, 1998). Despite this, from their review of the extant literature, Riddoch *et al.* felt able to conclude that although the evidence base was 'thin', on balance, EoP schemes could well lead to small but positive effects, particularly in relation to social and psychological variables, although they were '... not necessarily effective in increasing long-term physical activity' [(Riddoch *et al.*, 1998), p. xii]. Yet as Shakey observes, the critical indicator of success remains that of adherence, both during the programme and thereafter (Shakey, 1997). Evidence suggests

that between 15 and 70% of individuals starting a programme complete at least 75% of a 10–12 week programme (Shakey, 1997), and 50% of individuals who begin an exercise programme stop within the first 6 months (Robison and Rogers, 1994). Thus, the common-sense assumption that EoP can act as a vehicle for sustained behaviour change, particularly for those with poor health, merits further attention.

Understanding attrition rates on EoP schemes can illuminate the issue of longer term physical activity behaviour change, since the factors that influence attendance on the scheme are likely to be similar to those that influence physical activity behaviour once the intervention is over. Findings from a number of small-scale evaluations indicate that high attendance ($\geq 75\%$) on the scheme is significant in terms of leading to positive outcomes in the short term. Jones *et al.*, for example, found that improvements in psychosocial outcomes and their durability were strongly related to the level of attendance on the programme (Jones *et al.*, 2001). This study also followed up ‘non-attenders’, and found that people who were married or had a partner were significantly more likely to complete more sessions, and those who attended commented positively on the social aspects of the programme, a finding consistent with other studies [see, for example (Lord and Green, 1995; Hope *et al.*, 1999; Baker, 2000)]. This is also consistent with what is more generally known about activity levels being strongly influenced by degrees of enjoyment (Cale and Harris, 2001); this is particularly the case with older people (Finch, 1997).

Higher attendance on an EoP scheme is associated with degrees of flexibility: tailoring programmes of exercise to individuals’ interests and capabilities; accommodating group preferences (such as all female or all older people); scheduling sessions to accommodate weekly variation in availability (times of the day and days of the week); accommodating periods of non-attendance; and the use of physical activities that can easily be incorporated into everyday life (such as walking, swimming and cycling) (Ward, 1998; Franklin, cited in Dunlop and Barry, 1999; Hillsden *et al.*, cited in Carnall, 2000; Jones *et al.*, 2001).

This overview suggests that participation in, and adherence beyond, an EoP scheme is not simply a matter of how motivated referred individuals are. Nevertheless, much of the discourse surrounding EoP schemes (and their evaluation) makes

reference to the importance of basing programmes on an identified ‘model of behaviour change’ that emphasizes the role of primary care and leisure centre staff in ‘motivating’ referred individuals towards participation [see, for example (Riddoch *et al.*, 1998; DoH, 2001b)]. What stands out about much of this literature is the general dearth of a sociological perspective on the topic, to which we now turn.

A SOCIOLOGICAL PERSPECTIVE ON ADHERENCE TO EXERCISE

The study of adherence to physical activity has, typically, been informed by psychological perspectives. Such perspectives have tended to focus upon so-called ‘motivational orientations’ and ‘motivational climates’ (Stornes, 2001), i.e. upon ‘what it is about the nature of physical activities that make them attractive (or unattractive) to different people and what it is about the nature of those activities which encourages (or discourages) continued participation’ [(Lindner and Kerr, 2000), p. 8]. The location of EoP schemes predominantly within a psychological framework is illustrated in the *National Quality Assurance Framework (NQAF) on Exercise Referral Systems* (DoH, 2001b) as well as the review of schemes by Riddoch *et al.* (Riddoch *et al.*, 1998). Here, patients’ motivations and ‘readiness for change’ are seen as pivotal to the issue of adherence to exercise programmes *per se*. In this vein, the NQAF states that schemes ‘should employ an *accepted model of behaviour change* in interactions with potential patients participating in the referral process’ [(DoH, 2001b), p. 19] (emphasis added) and makes specific reference to the ‘stages of change’ model of Prochaska *et al.* (Prochaska *et al.*, 1992). This document also offers guidance to relevant staff on the use of ‘motivational strategies’ and the ‘setting of goals’, and stipulates that they should ‘understand and be able to apply a proven model of behaviour change’ [(DoH, 2001b), p. 31], whilst at the same time acting as role models. In this manner the guidelines recommend that staff with whom referred patients come into contact are trained in areas such as motivational interviewing and counselling, as supposedly crucial vehicles for maximizing patient motivation.

From a sociological perspective, much of this discourse fails, by degrees, to take into consideration the broader dimensions of adults’

lives beyond their individual motivations, despite the fact that exercise psychologists have increasingly spoken of the need to 'account for the context' [(Biddle, 1992), p. 107] and recognize that 'determinants of drop-out will be multifactorial and not restricted to motivation or other psychological variables' [(Wang and Biddle, 2001), p. 15]. Particularly noteworthy has been the relative absence from the literature on EoP of a substantial engagement with the burgeoning research-based literature on the sociology of adult leisure [see, for example (Roberts, 1978; Roberts, 1995; Coalter, 1996; Roberts, 1996a; Roberts, 1996b; Roberts, 1997; Vanreusel *et al.*, 1997; Roberts, 1999)]. This literature places physical activity and health within the context of adult leisure lifestyles (Green, 2002) and is considered below.

LEISURE IN LATER LIFE

As adults move through the life-course, their leisure lifestyles tend to centre on a decreasing number of familiar activities, with a period of gradual disengagement from many aspects of social life and an increasing tendency towards home-centred leisure (Roberts and Brodie, 1992; Roberts, 1999). Rarely does retirement become a seedbed for the development of new leisure interests. Yet the tendency in much of the literature on leisure in later life is to talk of the 'golden years' of retirement as representing something of a leisure renaissance. Retirement from full-time work is an especially significant transitional period in terms of the potential for people to lose not only income, but also status, sense of purpose, daily routine, social contact and so forth, and which tend to be accompanied by a decrease in leisure pastimes (Roberts, 1999). With this in mind, it is worth noting that although individualization within leisure is a long-running leisure trend across all age groups, it is especially prevalent among the elderly (Roberts, 1999).

Whilst it is well established in the sociology of leisure literature that leisure activities, including physical activity, can not satisfactorily act as a functional alternative to employment, leisure nevertheless has the potential to offset some of the more debilitating consequences of non-employment such as social contact, structure and a sense of purpose. It also allows people to recuperate, develop and enjoy social bonds and acquire satisfying skills (Roberts, 1999). Across all

age groups, it is evident that life satisfaction is associated with high levels of leisure activity and this is particularly the case among older people (Roberts, 1999). Donovan and Halpern report that those who exercise, play sport and work in the garden are more satisfied and, furthermore, that it is in part the social aspect of these activities that influences life satisfaction (Donovan and Halpern, 2002). Indeed, satisfaction with their leisure lives appears to have an especially powerful impact upon the general life satisfaction of the elderly.

EXERCISE AND SPORT IN LATER LIFE

Nowhere is the tendency towards a reduction in leisure activities with age more evident than in out-of-home leisure in general, and physical exercise in particular. At the same time, however, the elderly can be seen to be over-represented in particular forms of out-of-home leisure; most notably, and perhaps unsurprisingly, playing Bingo! Nevertheless, data from successive surveys and other similar studies [Coalter, 1996; Office for National Statistics (ONS), 1999; Sport England/UK Sport, 2001] reveal clear trends in the UK; trends since the 1980s towards increased levels of participation in physical activity and sport among adults at all stages of the life-course. Some of this over-representation is in physical recreation and sports such as walking and bowls.

A prominent feature of this rapid growth and diversification in participation has been a substantial increase in so-called 'lifestyle activities', alongside a decline in the participation rates for team sports (Coalter, 1996). Lifestyle activities are characteristically defined as those activities that are individual, flexible, non-competitive and fitness-oriented (Coalter, 1996). Thus, walking, swimming, cycling and keep-fit/aerobics feature in the top five sports and physical activities participated in by adults in the UK (ONS, 1999). Vanreusel *et al.*'s longitudinal study of adherence to sport and exercise in adulthood indicates that people with a competitive sport orientation and participation profile 'show both an earlier, as well as higher, dropout rate than (those) with a recreational sport (or lifestyle activities) profile' [(Vanreusel *et al.*, 1997), p. 377]. A particularly noteworthy feature of increased participation has been that whilst general participation in outdoor sport tails off quite markedly beyond the middle

age years (Sport England/UK Sport, 2001), participation in some outdoor activities and sports (particularly walking and bowls), and facility-based indoor sport and exercise do not suffer the same patterns of disengagement.

This pattern of drop-out and, more importantly, adherence offers some relatively clear messages for those professionally engaged with advocating active lifestyles in general, and EoP schemes in particular, among older adults. We want, therefore, to say something at this point about what is known about the process of becoming an exercise adherent or, as Roberts (Roberts, 1996a; Roberts, 1996b) puts it, 'locked-in' to exercise.

In terms of sport, the significance of age is, perhaps, self-evident: in general, participation declines with age and this decline becomes more marked after the age of 45 years (ONS, 1999; Sport England/UK Sport, 2001). Studies of participation rates and trends have tended to focus upon the readily identifiable social and personal 'barriers' to participation (such as those constraints associated with employment transitions, parenthood and physical decline). However, focusing attention upon the chief characteristics of the committed minority who become 'locked-in' to sport and physical exercise demonstrates that they have been actively engaged in *several* (usually three or more) games (or activities) throughout their sports careers [(Roberts and Brodie, 1992), emphasis added]. They typically possess what the authors refer to as a 'wide sporting repertoire'. The point about this is that this of itself appears to make it more likely that active lifestyles are sustained well into adulthood. This is particularly pertinent given that there are large continuities in leisure interests and behaviour from youth until retirement. As appears to be the case with adherence to exercise beyond the EoP programme, 'resumptions of sport careers following years of abstinence tend to be short-lived' [(Roberts and Brodie, 1992), p. 15].

It is important to bear in mind, however, that this is not just a matter of playing, enjoying or being good at several sports. Neither, as Fairclough *et al.* intimate, is it the case that exposure to a range of activities constitutes a sufficient as well as a necessary condition for lifelong participation (Fairclough *et al.*, 2002). Rather, Roberts and Brodie argue that it is the 'richness' of sporting and physical activities that is the chief characteristic marking out the sport and exercise socialization of those adults who

become 'locked-in' to sport and physical activity [(Roberts and Brodie, 1992), p. 42]. Roberts describes 'richness' in terms of satisfactions and skills that are generated and developed through particular activities, especially lifestyle activities, which individuals wish to repeat (Roberts, 1999). Regular participation can also lead to the development of habitual, routinized behaviour, underpinned and reinforced by organizational membership and social commitments that bind individuals into social networks in which physical activity is customary (Roberts and Brodie, 1992; Roberts, 1999). In this manner, regular participation is mutually reinforcing because those who are active are exposed to, and are liable to absorb, health and fitness values that can be expected to strengthen their motivation to remain active (Roberts and Brodie, 1992). This is, then, the critical issue about motivation: individuals become motivated because they come to value physical activity, in part because they wish to repeat satisfying experiences. Thus, becoming motivated is not necessarily a precursor to engagement with physical activity, as suggested by the most recent NQAF document (DoH, 2001b), for example, but rather a consequence of positive engagement and the resultant satisfaction associated with such activity.

This model for understanding participation places enjoyment and satisfaction, through social interaction and the learning of skills, centre stage, such that physical activity on an EoP scheme, for example, becomes the vehicle through which such experiences are generated. Such a model has a number of implications for policy and practice, which are explored below.

IMPLICATIONS FOR POLICY AND PRACTICE

It is difficult to escape the conclusion that the best recipe for locking people into lifelong involvement in physical activity is to focus attention on children and young people, the age group most likely to respond, particularly given that low levels of physical activity seem to be established as early as at 12 years of age (Gillander Gadin and Hammerstrom, 2002). However, there are clear lessons to be learned about later life *vis-à-vis* participation in sport and physical activity. In particular, given what is known about the transition from employment to retirement in relation to exercise adherence, it

appears to be crucial to make an impact before retirement. The realization that people do not overhaul their leisure habits as they grow older, either regularly or dramatically, leads us to conclude that EoP schemes may be more likely to have some success if they target those in their middle years as a category for referral.

It is also important to appreciate that the plural nature of the influences upon leisure patterns in general, and physical exercise in particular, means it is almost impossible for any one policy to have anything other than a marginal influence on public leisure behaviour (Roberts, 1999). Thus, as Riddoch *et al.* (Riddoch *et al.*, 1998) point out, it is necessary to be realistic about what EoP schemes on their own can achieve. However, policy initiatives are more likely to succeed if they swim with, rather than against, the trends within adults' lives and leisure preferences. This said, in our view there are grounds for optimism if those promoting and designing EoP schemes take on board the lessons from the sociology of leisure, including the recipe for becoming 'locked in' to physical activity. Crucial in this regard is the realization that later life satisfaction 'depends largely on the leisure skills and interests that individuals carry with them from earlier life stages' [(Roberts, 1999), p. 140].

Whilst there is every reason to believe that physical exercise can appeal to people, such popularity is contingent upon physical activity being 'presented appropriately' [(Roberts, 1996b), p. 105]; this is particularly the case with adults. In order to move with the prevailing grain of adults' leisure lifestyles—and particularly their preferences for individual or small group, non-competitive, flexible (so-called lifestyle) activities—there needs to be a shift in emphasis in several respects.

First, there needs to be a move within EoP schemes towards the inclusion of what might be referred to as more 'recreational' lifestyle activities, which are more likely to involve intrinsically motivating activity experiences that generate feelings of enjoyment and satisfaction. It is also noteworthy that evaluations of schemes (Riddoch *et al.*, 1998) have suggested that psychosocial outcomes are those most likely to show some improvement as a result of being on an EoP scheme, and that these may also be important in leading to adherence and generating satisfaction.

Secondly, such programmes must allow adults to sample a large number of activities whilst allowing individuals to concentrate gradually on a handful

which they see themselves as more likely to engage in regularly (Roberts and Brodie, 1992). This, it must be said, is a direction some EoP schemes are moving towards by making a wider range of activities available, such as gardening (Cole, 2002), and also by enabling scheme members to 'tailor their own sporting activities to their individual lifestyles' [(Roberts, 1996b), pp. 112–113].

Thirdly, these activities should have the potential to bind individuals into group settings, such as yoga, bowls, swimming or badminton, for we know that satisfying leisure experiences typically involve being with other people in a manner that generates social commitments (Roberts, 1999). Furthermore, these are the very kinds of activities in which older people are more likely to participate and which can be more easily integrated into everyday life (Hunt *et al.*, 2001). Indeed, the capacity for 'home-based' participation in such activities is clear and has been identified by Riddoch *et al.* (Riddoch *et al.*, 1998) as important.

Fourthly, many EoP schemes are of a finite duration, typically between 12 and 20 weeks. This may simply not be of sufficient longevity to enable a habitual pattern of exercise to develop: 3–4 months may be insufficient to allow individuals to feel 'locked into' participation by the routinization of the behaviour, the development of skills and the generation of social networks. The length of time required for such a pattern of behaviour to become established is likely to be confounded by the way in which the matters of everyday life, such as short-term health problems, interrupt efforts to adhere to any pattern of exercise. Maintaining social contact with the scheme throughout the vagaries of life would seem to be important in generating 'social commitments' (Roberts, 1999) that enable individuals to accommodate interruption to their participation on a scheme.

Fifthly, the role of the GP and leisure centre staff as part of the network of social relationships that is generated by referral onto an EoP scheme is also worthy of reconsideration in the light of what has been said regarding motivation. Different kinds of support can be critical in binding participants into networks of relationships that themselves generate satisfaction and self-esteem. This shifts the emphasis towards relationships and social contacts, rather than viewing leisure centre staff and even GPs as role models and motivators.

EoP schemes have proliferated in recent years, in spite of the fact that their evidence base is

'thin'. Given the problematic nature of empirical studies regarding evidence of impact, it is important to look for other ways of generating insight into their likely effectiveness. Furthermore, as Catford has pointed out, there is a danger in regarding evidence from randomized controlled trials as the only evidence that 'counts' (Catford, 2003). In this paper we have sought to explore a sociological understanding of leisure and adherence to physical activity in order to move towards a more adequate understanding of EoP as an intervention. In doing so, we have synthesized evidence from a variety of sources that span the 'disciplinary divide' in order to illuminate the matter of adherence to exercise in later life and view exercise on prescription schemes 'in the round'. Contributing to the evidence base in this way can be useful in that it can obviate the immediate need for 'more vigorous evaluation' of EoP (NAO, 2001) and allow 'best guess approaches—built on available evidence' [(Catford, 2003), p. 3] to proceed. Furthermore, the potential advantage of interdisciplinary perspectives on matters of public health, i.e. attempting to see issues 'in the round', lies in their potential to supply more sophisticated analyses of problems, which, in turn, highlight the necessity for complex, multi-level solutions. In the matter of understanding the role of EoP in enhancing adherence to exercise in later life, understanding the social, cultural, physical, demographic and economic influences of individual action is important in that it is a reminder that 'reliance on personal action alone is insufficient' [(Catford, 2003), p. 3]. This is a conclusion that can be reached without the necessity of additional and more rigorous evaluation of EoP schemes.

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