Ageing & Society **22**, 2002, 501–515. © 2002 Cambridge University Press
DOI: 10.1017/S0144686X02008760 Printed in the United Kingdom

The role of age in moderating access to cardiac rehabilitation in Scotland

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ABSTRACT
Access to health care should be determined by clinical need and not by age. Older people form an increasing proportion of the general population and of those with coronary heart disease, but compared with younger people they are less likely to be invited for cardiac rehabilitation programmes and more likely not to complete them. This study examined the factors that contribute to these trends in Scotland. A national survey of rehabilitation centres (n = 30) found that the majority of their programme co-ordinators believe that age does influence access to rehabilitation. While only one programme used an overt age criterion, age was widely perceived to influence access, both during initial assessment and in assessments for exercise components; and while the respondents acknowledged that other criteria influenced selection, the factors cited most often were all more common during old age, *e.g.* the presence of other medical ailments, lower initial exercise tolerance, and poor access to private or public transport. Focus groups undertaken with a sub-sample of the co-ordinators revealed that staff appeared to have knowledge of the benefits of cardiac rehabilitation for older people, but that the scarcity of resources prevented them from offering more accessible and appropriate services.

KEY WORDS – heart, coronary heart disease, prevention, rationing, decision-making, resources.

Introduction

Recent British government health policies emphasise that older people must be assessed individually and not discriminated against in their access to health services: 'Decisions about treatment and health care should be made on the basis of health needs and ability to benefit rather

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than of patient's age' (Department of Health 2001 : 17). Cardiac rehabilitation services have multiplied throughout Europe and the United States (Balady *et al.* 2000; Bethell 2000; Wenger *et al.* 1995). These interventions can reduce mortality and morbidity and improve the quality of life of those with coronary heart disease (CHD) (Jolliffe *et al.* 2001; Linden 2000; Oldridge *et al.* 1988; O'Conner *et al.* 1989), while patients over 75 years of age make up an increasingly large proportion of the population with CHD (British Heart Foundation 2000). As more cardiac rehabilitation services are developed and become menu-based, their eligibility criteria widen to include those at high risk of developing CHD, heart failure or angina, and an increasing number of older patients become eligible (Department of Health 2000; Scottish Needs Assessment Programme (SNAP) Working Group for Cardiac Rehabilitation 2001; Wenger *et al.* 1995).

Less widely appreciated among health professionals is that older people acquire similar benefits to those of younger people after cardiac rehabilitation (Ades *et al.* 1987; Ades 1999; Balady *et al.* 1996; Forman and Farquhar 2000; Lavie *et al.* 1993; Lavie and Milani 1995, 1999; Milani and Lavie 1998; Oldridge 1998; Williams *et al.* 1985). For instance, exercise training can provide a significant improvement in exercise tolerance among older men and women, as experienced by individuals younger than 70 years (Ades *et al.* 1995). While no adverse effects of rehabilitation or exercise training have been identified in older people, there is evidence that they are less fit after a coronary event (Wenger *et al.* 1995). A convincing case can therefore be made that, after a CHD event, older people are more responsive to the effects of cardiac rehabilitation, because they have greater disability and less independence than younger people (Oldridge 1998).

Despite the evidence that older people benefit from cardiac rehabilitation, they are less likely to be invited and less likely to attend hospital-based cardiac rehabilitation programmes (Blackburn *et al.* 2000; Evenson *et al.* 1998; Filip *et al.* 1999; McGee and Horgan 1992; Thomas *et al.* 1996; NHS Centre for Reviews and Dissemination 1998; Scottish Intercollegiate Guidelines Network (SIGN) 2001). Certain groups, particularly women, the socially deprived and older patients, still do not get equal access to cardiac treatments (Barron *et al.* 1998; Clarke *et al.* 1994; Dong *et al.* 1998; Giles *et al.* 1995; Krumholz *et al.* 1992; MacLeod *et al.* 1999; Maynard *et al.* 1996). The increasing demands being placed on health services caused by the ageing population, rising public expectations, and advances in new technology, have resulted in the development of managed health care policies, where the commitment to access, equity and effectiveness has

given way to efficiency (Tallis 1994; Audit Commission 1995). More specifically, it has resulted in attempts to ration health care by age (Audit Commission 1995; Williams 1997; Bowling 1999; Department of Health 2001).

The need to reconcile growing demands and expectations with constrained resources is a reality for all health care delivery systems. Improvements in treatments and technology create competing demands for health services that must be resolved, and many decisions about the allocation of scarce resources have to be made (Morris 2001). Although some such decisions are made at the national level, as in the United Kingdom through the National Health Service 'frameworks', and by the guidance from the *National Institute for Clinical Excellence* on allocating resources, many rationing decisions are made by individual clinicians or managers (Rationing Agenda Group 1996). It is at this level that personal views and values may affect treatment. Some may argue, for example, that older people are more expensive to treat, have had a fair chance at life, or are unlikely to benefit as much from treatment because of frailty (Bowling 1999).

The utilisation of cardiac rehabilitation by older people

It is at this local level that age appears to have affected the availability of cardiac rehabilitation to older people. In the early 1990s, it was shown that health professionals did not vigorously encourage older patients to attend cardiac rehabilitation (Ades *et al.* 1992*a*, 1992*b*). Surveys during the mid-1990s found that 36–40 per cent of cardiac rehabilitation programmes had an upper age limit, and that most frequently people over 70 years of age were ineligible (Davidson *et al.* 1995). Certainly, younger men were most likely to attend (Thompson *et al.* 1997). While the most recent survey found that only 14 per cent still used age as an exclusion criterion (Bethell 2000), even in settings where this does not occur, age may still influence access to services through co-variates, as when access is restricted for those with other illnesses, poor mobility or poor vision (Pell and Morrison 1998). It therefore remains important to investigate the role that practitioners have in mediating access.

Even when cardiac rehabilitation services are made available to patients, their utilisation may be affected by personal factors such as the availability of safe, reliable and affordable public or private transport, the influence of other illnesses, or negative health beliefs

(Kelly *et al.* 1991; Pell and Morrison 1998). To understand older patients' attendance at rehabilitation, both professional and patient factors must therefore be examined. Few previous studies have, however, examined the issues, and consequently little is known about the influential factors (Wenger *et al.* 1995). The research reported here should therefore be seen as a preliminary investigation.

Research design and methods

To examine the factors that affect older people's attendance at cardiac rehabilitation, both quantitative and qualitative methods have been used, in the forms respectively of a structured questionnaire survey and focus groups. The combination ensured that the study both identified the influential factors and explored the ways that they impinged on older patients' attendance (Patton 1987). The cross-sectional survey collected information on the access policies and practices employed by cardiac rehabilitation programmes in Scotland: 14 in primary care and 24 in secondary care were identified from a national register (British Association of Cardiac Rehabilitation 1999). As four programmes had ceased operation, the questionnaire was sent to 34 co-ordinators. It sought information on the types of cardiac rehabilitation services currently offered by NHS service providers, and the role that age played in regulating access to them.

The information gathered through the questionnaires informed the development of the focus group schedule. The focus groups were designed to provide a deeper understanding of the processes by which age influenced access to the services (Patton 1987). The participants were the programme co-ordinators who accepted our invitation to discuss the role of age in moderating access. Two focus groups containing nine health professionals were undertaken (five nurses, two physiotherapists, and two health visitors). The participants co-ordinated programmes in primary ($n = 3$) and secondary care settings ($n = 6$), and in both urban ($n = 7$) and rural areas ($n = 2$). The focus groups were tape-recorded and transcribed.[1] Pseudonyms were used to maintain the confidentiality of the participants. The summarised data were reviewed to identify consistent or patterned responses within and between groups, and to assess the level of consensus about the points raised and their congruence with the survey data.

TABLE 1. *Health professionals involved in programmes*

Professional group	Programmes involving group		Co-ordinators[1]	
	Per cent	Number	Per cent	Number
Physiotherapists	93	28	17	5
Specialist nurses	80	24	60	18
Dieticians	80	24	0	0
Cardiologists	70	21	0	0
Community/liaison staff	53	16	0	0

[1] Seven (23%) programmes were jointly co-ordinated by physiotherapists and nurses.
Source: Authors' survey.

Results: the provision of cardiac rehabilitation to older patients

Thirty completed questionnaires were returned, giving a response rate of 88 per cent. As Table 1 demonstrates, although nurses and physiotherapists were most likely to be involved in and to co-ordinate the cardiac rehabilitation programmes, several other health professionals were involved. All the units that responded included exercise and education in their programmes; the majority also included counselling and relaxation and stress management, and 90 per cent (n = 27) provided a low intensity component in their exercise sessions.

Respondents were asked what type of professional normally decides whether a patient is invited to their programme. The most common answer was that the decision was taken by a team including doctors, nurses and physiotherapists (n = 10); others reported that it was taken by nurses (n = 5), general practitioners (n = 3), medical consultants (n = 2), and physiotherapists (n = 2). In six programmes, eligibility to the exercise component of the programme was decided by a cardiologist or a physiotherapist.

All 30 respondents thought that there should *not* be an age limit for entry to cardiac rehabilitation programmes. Although 23 of the 24 programmes invited older patients to take part in the non-exercise components of their programmes, 77 per cent (n = 23) believed that rationing by age still occurred. To identify the processes that may influence decision-making about patient care, respondents were asked various questions about the structure of programmes and the decision-making employed to determine eligibility. Respondents from all programmes identified several factors that influenced the decision to invite *an* individual to cardiac rehabilitation (see Figure 1). All of the most commonly cited related to health, *i.e.* other medical conditions, level of present activity and frailty.

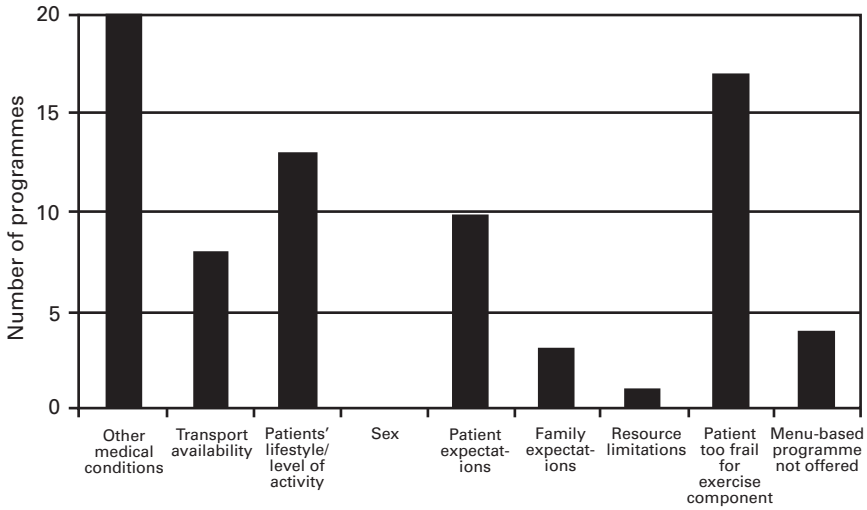

Figure 1. Factors perceived to influence the decision to invite to cardiac rehabilitation

TABLE 2. *Perceptions of influence of age on eligibility decisions in cardiac rehabilitation*

	Level of influence (percentages)			
Nature of influence	Never	Sometimes	Always	Number
On decision to invite patients to the whole programme	60	40	0	30
On the inclusion in the exercise component of the programme	48	52	0	29
On the intensity of exercise prescribed	33	57	7	30

To identify at which point a patient's age influenced the decision-making process, respondents were asked about the initial invitation and their decisions to allow a patient to take part in the exercise component and about the prescribed level of exercise (Table 2). A significant minority (12) of respondents reported that age did 'occasionally' or 'sometimes' influence decisions to invite patients to programmes. Even for the programmes that admitted older individuals, half of the respondents (n = 15) believed that age occasionally or sometimes influenced their subsequent inclusion in exercise components, while the majority (n = 17) believed that age then influenced the intensity of exercise that was prescribed.

The respondents who said that age did influence decisions in some way were asked to indicate whether the criterion was a specific chronological age or an estimation of biological or functional age, *i.e.* an indicator of the physical fitness of the patient. Only one respondent indicated that chronological age was used, although even in this case it was a rule that was 'generally understood' not an explicit or written policy. Sixty three per cent (n = 19) of respondents reported that their decisions were based primarily on biological age, while 11 of the respondents stated that patients were assessed individually. At the end of the questionnaire, general comments were solicited regarding the role of age in influencing access to treatments. While these are difficult to quantify, there was a widespread awareness of the physiological, psychological and quality-of-life benefits that older patients can derive from cardiac rehabilitation. It was also widely believed that older people were as likely to complete their programmes of rehabilitation as younger service users.

Focus group opinions

The two focus groups allowed a deeper examination of the factors and processes associated with age and access to cardiac rehabilitation (Patton 1987). Participants in both groups suggested that older patients had different and many more complex needs as well as more medical complications than younger patients. As had been shown by the survey, participants tended to associate old age with illness and having a lower capability to complete cardiac rehabilitation successfully, as the following quotations reveal:

> There might be other factors that would make you think twice about putting an older person on the treadmill – they've got underlying pathology or something.

> Whether a patient is exercise tested, it's not age-related; it's more of a physical thing in these older patients.

> Certainly where I work, if they have other problems with arthritis or are waiting a tremendous long time for other types of tests to see whether they can come into the rehab programme or not … that definitely has an effect on whether they are invited into rehab or not.

> I think that they (older patients) are a difficult group to target because their needs are different. They quite often have other medical problems like arthritis and mobility.

The risks associated with carrying out symptom-limited exercise tolerance tests in older patients were identified as being a problem in

both focus groups. It was acknowledged widely that access to hospital-based programmes in particular was still largely determined by results from these tests, and that this often posed a considerable barrier to older patients' inclusion. Many of the participants also expressed reservations about the capability of older patients to cope with the intensity of exercises involved in cardiac rehabilitation.

The resources available to programmes were considered to be the prime influence on accessibility to cardiac rehabilitation by older patients. More funds than are available were seen as a prerequisite for a flexible service that can cater for individuals with complex needs during both the early and later stages of rehabilitation. Older patients were seen as requiring more staff time, the provision of transport, and dedicated programme choices and locations. The participants in both focus groups agreed that cardiac rehabilitation was often inadequately funded, and that older patients suffered most from the resource constraints. There were many expressions of the links between resources and the range, quality and availability of the service, and frequent reports that older patients were not offered adequate choice, particularly in the provision of low-intensity exercise programmes:

I know most areas would like to have more [service] options but they can't because of the staffing so you're sticking to the core services … we might have excluded people of an older age group in the wards just for pressure of work … Others (programme co-ordinators) may not have written criteria but, when they are busy, they are going to select those who could most benefit and they will obviously be younger ones that could go back to work.

Some areas do very well and others don't … I think that's everyone's experience. We had an age policy but only because we were swamped by the numbers.

I would like to see … cardiac rehab staff able to take a class to a local area and to improve compliance at stage IV, because [older people] are just not going to those programmes.

I think for older patients it's too daunting for them to go alone to the leisure centre.

Transport is often an issue for [older patients] … certainly in our area, and we don't have funding for that and it's always something that's flagged up.

Both groups felt strongly that compliance is not a significant barrier to attendance in older patients, as they are highly motivated to change their risk factors. This was related to older patients being perceived as having more spare time and fewer pressures than younger people. Several patient-related barriers were however seen as impinging on attendance, including poor access to public transport and low car ownership.

You can get some 55-year-olds who couldn't manage a normal class and you get an 80-year-old with a fantastic attitude who can take on the world.

[My unit] sounds like a pub on a Monday afternoon because of the noise of them all talking before they go in, all the laughing and banter. You don't get that as much with the other classes.

Many quite articulate older people, who want to know about their medication, want good follow-up and actually ask about rehab programmes.

I think it [transport] is the biggest issue because we're going out to them … what we find is that older patients tend not to go to secondary care for their rehab.. If they can be going only a short distance, then they are more likely to do it.

Your younger, more fitter MIs are the ones that default for ulterior motives or they are in denial – a lot of them want to forget about it; [they] don't want to come back to the hospital.

Discussion and recommendations

While the validity of self-report data on practitioners' own practice should always be interpreted with caution, practitioners infrequently get the opportunity to voice the factors and constraints that inform and constrain their everyday practice. These decisions are often highly complex (Atkinson 1995; Plsek and Greenhalgh 2001), and extend beyond simplistic conceptions of evidence-based practice (Black 2001; Knottnerus and Dinant 1997). The survey and qualitative methods used in this study allowed the scope of factors that influenced older patients' access to be discerned and their interaction explored. While the survey-component of the study was confined to one country, the current provision of cardiac rehabilitation in Scotland is similar to that in the rest of the United Kingdom (Thompson and Bowman 1995; Bethell 2000).

Cardiac rehabilitation services have evolved markedly over the last 15 years and increasingly encompass individual assessments of capacity to benefit (NHS Centre for Reviews and Dissemination 1998; Department of Health 2000). While, however, cardiac rehabilitation can benefit older patients, and few programmes now use age as an explicit factor to exclude older patients (Bethell 2000), this study has shown that age influences access at several points and through various subtle processes and factors.

Scarcity of resources was seen as limiting the range of services that could be offered for CHD patients. These shortages were seen as

impinging most on those with other medical ailments, reduced initial exercise tolerance, and poor access to private or public transport – crucially all associated with older age. Through these factors, cumulatively, although not necessarily intentionally, older people's access to cardiac rehabilitation was curtailed compared with younger people's. It was most restricted at the initial assessment for programme inclusion, and through the assessment for entry to exercise components and the intensity of exercise prescribed.

Ensuring equity of access across age groups should not be addressed only after care is provided to younger groups with less complex health needs. Rather, an on-going and comprehensive commitment to equity of access and appropriate service content must be at the heart of programme design and provision (Emery 1995). Programmes should address the nature and needs of the older population. There is evidence that older people prefer different cardiac rehabilitation services compared to younger people, such as a longer programme (Filip *et al.* 1999). They may also benefit from sessions that address their specific needs, for instance on the social and psychological issues associated with late life (McGee 1999). This could include discussion of issues such as age discrimination, education, and the common misconceptions about ageing, health and exercise. The importance of this education should not be underestimated, for while older individuals can benefit from exercise (Ades *et al.* 1999; Lavie and Milani 2000), those who have been unaccustomed to it do not exercise mainly because of their own perceptions of physical frailty or poor health (Clark 1996; Rhodes *et al.* 1999). Given the benefits that older people can gain from exercise, more options that suit a wider range of exercise capabilities should be available (Oldridge 1998). Also, though symptom limited exercise tolerance tests are widely used to determine access to cardiac rehabilitation and are useful for other purposes (Ashley and Froelicher 2001), they need not be used in low- or moderate-intensity exercise programmes (Scottish Intercollegiate Guidelines Network 2001).

Providing services that are more accessible and suitable for older patients is likely to require additional resources. Relevant policy and guidelines that state the importance of ensuring equity of access and the effectiveness of cardiac rehabilitation in older people can be used to support the case for additional funding (Wenger *et al.* 1995; Department of Health 2000). Additionally, the treatment of older patients who do not attend, who drop out of cardiac rehabilitation, or who receive inappropriate components, may be more expensive in the long term (Bowling 1999). Further research is required to examine and compare these costs.

In relation to hospital-based cardiac rehabilitation programmes, wherever possible either transport to the rehabilitation centre or more local provision could be offered (Bowman *et al*. 1998). Home-based rehabilitation offers an economical and effective alternative to hospital-based care which older people may be more likely to take up (Ades *et al*. 2000; Bowman *et al*. 1998; Brubaker *et al*. 2000; Collins *et al*. 2001; Filip *et al*. 1999).

This study has shown that several health professionals are involved in determining eligibility for cardiac rehabilitation. The responsibility for ensuring equity of access should therefore be shared amongst all the rehabilitation team. As noted, a wealth of research supports the benefits of cardiac rehabilitation to individuals irrespective of age. This should be a core-value that drives the programmes and consistently informs eligibility decisions. Given older people's lower attendance levels and the limited ability they perceive themselves to have in relation to exercise (Clark 1996; Rhodes *et al*. 1999), the value of the programmes should be reinforced by health professionals in their interactions with patients, and in all the programme information media such as posters, information leaflets and videos.

Health professionals' behaviour or values may discriminate against certain groups' access to cardiac-services (Bowling 1999; Missik 2001; Struthers *et al*. 2000). As discrimination, whether intentional or not, can occur at both the individual and institutional level (Bowling 1999; Department of Health 2001), it is important to examine practice in the delivery setting. Further research is required to examine the perspectives of older patients on the suitability of rehabilitation and their ability to access services. Services should be adapted to improve their suitability and access for older patients, and the process informed by more research. Focus groups or surveys should be used to evaluate the suitability of the programme content for older patients. The provision of each component of cardiac rehabilitation should be monitored locally by compiling rates of invitation and attendance by age. Barriers to older patients' attendance should be identified through surveys or qualitative research (Patton 1987).

NOTES

1 Additional data were obtained from the notes of the assistant moderator (AMC). Initial coding was carried out by two of the researchers (CS and AC) who then compared the categories and further refined the coding framework (Ritchie and Spencer 1994), paying particular attention to contradictions and exceptions (Barbour *et al*. 2000).

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Accepted 8 March 2002

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