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Commentary

Cardiac rehabilitation and secondary prevention: wrong terms, aims, models and outcomes?

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Cardiac rehabilitation and secondary prevention are integral components of comprehensive care. Yet, there is an enduring lack of clarity and consistency pertaining to their terminology, aims, models and outcomes. Moreover, despite a rapidly changing world, models of cardiac rehabilitation and secondary prevention have changed little, despite pleas for change, over the past 15 years.[1] Indeed, the current scenario is akin to 40 years in the wilderness and one wonders how long it will be before we reach the Promised Land.[2]

Briefly, to summarise,[2] the origins of cardiac rehabilitation were in the 1940s with reports of the harms of prolonged bed rest for patients with cardiovascular disease (CVD). The 195Os saw a seminal paper on armchair treatment and the use of the term cardiac rehabilitation and the start of its development as a treatment. By the 1970s, controlled trials of early mobilisation and hospital discharge after myocardial infarction laid the foundations for contemporary cardiac rehabilitation. The following decades saw rapid advances in exercise testing, education provision, unhealthy lifestyle modification and psychosocial intervention as well as determining safety, effectiveness and cost, including for secondary prevention.[3,4,] Yet, despite the seemingly strong and consistent evidence that cardiac rehabilitation reduces morbidity and mortality and improves quality of life as well as exercise tolerance, symptoms, blood lipid profiles, blood pressure, psychosocial wellbeing and stress,[5,6] referral, uptake and completion rates remain disappointingly low.[7] Services are still often not being endorsed by cardiologists.[2]

There are many reasons for this, but the development, recognition and support of cardiac rehabilitation and secondary prevention programmes is likely hampered by the mechanistic, confusing and outmodedly narrow terms, aims, models and outcomes used by many programmes.[3,5] To be fit for purpose in contemporary health care it is necessary to revisit these fundamental terms.[8]

The terms ‘cardiac rehabilitation’ and ‘secondary prevention’ are both questionable- the distinction between cardiac rehabilitation and secondary prevention is unclear and the arbitrary dichotomization of primary and secondary prevention remains vague and unhelpful. The main difference between cardiac rehabilitation and secondary prevention appears to be one of emphasis but it is also questionable whether either accurately captures the essence of what is required in a rapidly evolving CVD prevention and rehabilitation landscape. The terms ‘cardiac rehabilitation’ and ‘secondary prevention’ – especially when qualified further with ‘exercise-based’ - convey a mechanistic, medicalized and reductionist

image which to many fails to capture either evidence or practice around multi-factorial risk factor reduction . It is timely to replace these terms with a more holistic, positive one that emphasizes cardiovascular health and wellness and embraces in a unified manner cardiovascular health promotion, risk reduction and disease prevention. An example may be 'heart health and wellness programmes'?

The aims of cardiac rehabilitation and secondary prevention traditionally have been to reduce mortality and morbidity and, to a lesser extent, improve quality of life. Yet these aims are sometimes unrealistic and often unachievable. Programmes may achieve reductions in cardiovascular (and even total) mortality and morbidity but they are much more likely to do so indirectly and secondarily. More realistic aims are to achieve measurable improvements in health – such as physical, emotional and social functioning, quality of life and well-being.

Existing models of cardiac rehabilitation, and to a lesser extent secondary prevention, vary tremendously in terms of target patient population (commonly myocardial infarction, stable angina), structure/location (predominantly hospital-based during weekdays), content (usually exercise and education dominated), delivery (mainly group-based and didactic vs interactive), duration (often 6-8 weekly sessions 6 weeks after the cardiac event) and commencement (invariably 6 weeks after the cardiac event). So-called phases of rehabilitation have little relevance to patents – being artificial, mechanistic and often vary between centres and countries. Rather, it should form a seamless part of comprehensive cardiac care and start at the moment of a cardiac event.

National guidelines recommend that cardiac rehabilitation be offered to all who present with a cardiac event based on an assessment of individual need and adopt a menu-driven approach of interventions.[3] Yet most programmes remain excessively standardized, are based in hospitals and start too late for maximal benefits to accrue.

A more creative, flexible and truly patient-centred approach is needed in which the patient and family are offered a choice of models based on individual need, preference and financial or occupational constraints and at a time which suits them rather than the health care system.[7] A brief, patient-centred, flexible, interactive modular programme based on individual need and collaborative goal setting is an attractive and viable option. It should be offered to all who are likely to benefit both in terms of health experiences and health outcomes. This could widen access to currently excluded groups, notably women, elderly

people and ethnic groups as well as those with acute coronary syndrome, exertional angina, revascularization, stable heart failure, cardiomyopathy, congenital heart disease and insertion of an implantable cardiac device, and possibly to those with atrial fibrillation and peripheral artery disease. Partners should routinely be encouraged to attend as their presence often reinforces knowledge, satisfaction and confidence. An assessment of beliefs and correction of misconceptions at the outset may help optimize uptake and outcome.

Also, new care models/settings are likely to enhance reach and impact.[9] An example of an innovative, community-based model is MyAction,[10] and efforts to augment home-based provision with information and communication technologies, often termed telehealth CR or eCR provide enhanced opportunity for counselling, education and feedback.[11] Ensuring continuity and integration with primary care providers is likely to increase adherence, reduce risk and contain costs, as are automatic referral systems and the use of new and emerging technologies such as e-health and m-health.[12] These approaches should take into consideration key factors associated with health education and behavioural change like culture, ethnicity, language and health literacy.

Such community and home-based models can raise awareness of individual need of the patient and family/carers in the setting in which they feel more comfortable and in which they have to make sustained health behavior changes over the long term. They too need to be monitored, supported and followed-up based on individual circumstances and preferences.

Many of the outcomes specified and measured in cardiac rehabilitation and secondary prevention are essentially medical or biological ones determined by cardiologists. Yet more relevant 'patient-centred' outcomes for patients and partners and health care providers are depression, anxiety, self-efficacy, health-related quality, social isolation, illness perceptions and cognition,[13] which need to be assessed using brief, valid and reliable measures.[6] In addition, patient and carer expectations, experience and satisfaction can be assessed. This may help contribute to an evaluation and comparison of models and outcomes.

In conclusion, new ways of thinking about cardiovascular rehabilitation and secondary prevention are urgently needed if intervention effectiveness is to be fully realised. This extends to revisiting terms, aims, models and outcomes. The terms should reflect a focus on heart health and wellness, the aims centred on improved functioning,

quality of life and well-being, models being flexible, shaped around and empowering of patients and families and outcomes that are appropriate, holistic patient-centred and measurable and which are taken into account alongside patient expectations, experience and satisfaction. By such means- preventive cardiology can have demonstrable impact and reach on more lives.

The authors declare that there is no conflict of interest

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