

Outcome Assessment in Cardiac Rehabilitation

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THOMPSON: Outcome Assessment in Cardiac Rehabilitation. *Cardiac rehabilitation is a comprehensive multifaceted and multidisciplinary intervention to reduce risk, promote health and prevent disease, with programmes typically comprising education, exercise, counseling and behaviour modification. Although cardiac rehabilitation programmes are effective there is comparatively little attention devoted to outcome assessment. This area is important because it provides patients, clinicians, managers and policy makers with evidence on effectiveness and permits programme development, evaluation and comparison. It demonstrates whether a programme effectively attains outcome goals for its target population, with assessment of patients at programme entry helping guide and plan treatment and repetition of the measures at defined intervals helping evaluate outcomes. A sensible approach is to assess appropriate core components of care in terms of behavioural, clinical, health and service domains using valid, reliable and appropriate outcome measures. (J HK Coll Cardiol 2006;14(Suppl 2):B111-B113)*

Cardiac rehabilitation, outcome assessment

摘要

心臟病的復康治療是一項綜合多層面多學科的干預方法，以此來降低疾病風險、提高健康狀況並預防疾病發生，復康治療計劃通常包括教育、鍛煉、諮詢和行為修正。雖然心臟病復康計劃是有效的，但是對於其結果的評判卻相對很少關注。而這一領域是相當重要的，它為病人、臨床醫生、管理者和策略的制定者提供有效的證據，並使計劃發展、評估和比較。這表明計劃是否有效在於能否對目標人群達到預期效果，在計劃實施之初對病人的評價有助於指導和計劃治療，而階段性的重複評價有助於結果的評估。一個明智的方法是採用有效、可靠和恰當的參數，對治療的核心組成進行合理的評價，包括行為能力、臨床表現、健康狀況和復康服務。

關鍵詞：心臟病復康 結果評價

Introduction

Cardiac rehabilitation is defined by the World Health Organization¹ as 'The sum of activities required to influence favourably the underlying cause of the disease, as well as to ensure the patients the best possible physical, mental and social conditions so that they may, by their own efforts, preserve, or resume when lost, as

normal a place as possible in the life of the community. Rehabilitation cannot be regarded as an isolated form of therapy, but must be integrated with the whole treatment, of which it forms only one facet' (p.5). This is, of course, an all-embracing definition but is endorsed by countries across the world. Thus, in theory, cardiac rehabilitation should be a coordinated, multifaceted intervention designed to optimize physical, psychological and social functioning.²

In essence, cardiac rehabilitation services are comprehensive programmes involving education, exercise, counselling and risk factor modification designed to limit the deleterious physiological and psychological consequences of heart disease, reduce the risk of death or recurrence of the cardiac event and enhance the psychosocial and vocational state of

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patients. There is a growing body of evidence attesting to the benefits of cardiac rehabilitation, including significant reductions in mortality and morbidity as well as improvements in health-related quality of life.²⁻⁴ However, because cardiac rehabilitation is often a multifaceted intervention, it can be difficult to ascertain whether benefits, if they accrue, are due to a single component or a combination of components. Also, little is known about the economic aspects of cardiac rehabilitation and there is an urgent need to assemble information on the cost and cost effectiveness, though a recent trial of cost-effectiveness showed a greater gain from rehabilitation up to one year,⁵ and a recent systematic review found evidence to support the cost-effectiveness of supervised cardiac rehabilitation compared with usual care in patients with myocardial infarction and heart failure.⁶

Clearly cardiac rehabilitation is not a homogeneous service and there is a range of factors that influence the costs and cost effectiveness of the process, including scale of the programme, location, components, intensity of the process, the patient population and adherence.

Outcome Assessment

Many cardiac rehabilitation programmes have evolved in an unsystematic and uncoordinated fashion and few have incorporated standardized outcome assessment systems, thus making impossible evaluations and comparisons of programmes. Yet, national guidelines and standards^{7,8} identify interventions that should be offered at each stage of the rehabilitation process – including comprehensive assessment of physical, psychological and social risk and needs, a written individual plan, lifestyle advice, psychological interventions, use of effective medications, the involvement of family/carers, access to cardiac support groups, and long term follow-up – and specify the importance of monitoring and evaluation including outcome assessment. This is necessary to inform the development of models of care and to systematically identify those who would benefit from these services, assess their needs and risks, provide, document and

review service delivery, integrate cardiac care and evaluate the quality of the service.

Core components of cardiac rehabilitation programmes have been outlined in a statement by the American Heart Association and the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR).⁹ The statement provides specific information regarding evaluation, intervention and expected outcomes in each of the core components: baseline patient assessment; nutritional counselling; risk factor management (lipids, hypertension, weight, diabetes, smoking); psychosocial management; physical activity counseling; and exercise training.⁹ More recently, the AACVPR produced a consensus statement on outcomes evaluation with the aim of providing practical examples to improve patient care and programme effectiveness.¹⁰ Thus, outcomes evaluation includes behavioural, clinical, health and service domains.¹⁰ Examples of components for each of these domains, respectively, would include: adherence to diet, exercise and medication; depression, anxiety and functional capacity; health-related quality of life and morbidity; and patient satisfaction and access and utilization of service. However, factors such as patient (and family/carers) expectations are also an important consideration that should be taken into account.¹¹

Although guidelines advocate that cardiac rehabilitation services should be available not only to those patients post-MI or post-coronary artery bypass graft surgery but also those with heart failure, valvular heart disease, angina and hypertension,⁷ the majority of programmes are still only available to a minority of patients who are likely to benefit. In some centres, as few as half of the patients complete even half of the programme.¹² A number of barriers to participation in and adherence to cardiac rehabilitation have been identified, including distance and lack of transportation and lack of referral by physicians,¹³ and it has been reported that referral and attendance rates of older people, women, socially deprived and ethnic minority patients and those with angina or heart failure tend to be low.¹⁴

The phases and the elements contained within the cardiac rehabilitation programme should be flexible and tailored to suit the individual needs of the patient and

his or her partner and family. This means that the timing and location of sessions need to be flexible and the length of participation in a programme should be variable in order to cater for the wide range of clients. In order to tailor services and to ensure that long-term health behaviour is sustained, a comprehensive assessment of the individual's psychological perspectives and needs is essential. This will include factors such as illness representation and self-efficacy.¹⁵ Considerations such as these will help to predict their response and develop therapeutic interventions that start from their perspective.

Cardiac rehabilitation aims to prolong life, relieve symptoms and improve function in patients. Therefore, it is imperative that outcome assessment utilizes only valid, reliable and appropriate measures.

Conclusion

Cardiac rehabilitation is a multifaceted, multidisciplinary activity that has developed rapidly. However, in order to improve the quality and consistency of rehabilitation services, more attention needs to be paid to outcome assessment. Such information will provide patients, clinicians, managers and policy makers with evidence on effectiveness and inform programme development, evaluation and comparison.

References

1. World Health Organization. Needs and action priorities in cardiac rehabilitation and secondary prevention in patients with CHD. WHO Regional Office for Europe, Copenhagen, 1993.
2. Jolliffe JA, Rees K, Taylor RS, et al. Exercise-based rehabilitation for coronary heart disease. (Cochrane Review) The Cochrane Library 1 (pp. 1-44). Chichester, Wiley, 2004.
3. Taylor RS, Brown A, Ebrahim S, et al. Exercise-based rehabilitation for patients with coronary heart disease: systematic review and meta-analysis of randomized controlled trials. *Am J Med* 2004;116:682-92.
4. Leon AS, Franklin BA, Costa F, et al. Cardiac rehabilitation and secondary prevention of coronary heart disease: an American Heart Association scientific statement from the Council on Clinical Cardiology (Subcommittee on Exercise, Cardiac Rehabilitation, and Prevention) and the Council on Nutrition, Physical Activity, and Metabolism (Subcommittee on Physical Activity), in collaboration with the American association of Cardiovascular and Pulmonary Rehabilitation. *Circulation* 2005;111:369-76.
5. Briffa TG, Eckermann SD, Griffiths AD, et al. Cost-effectiveness of rehabilitation after an acute coronary event: a randomised controlled trial. *Med J Aust* 2005;183:450-5.
6. Papadakis S, Oldridge NB, Coyle D, et al. Economic evaluation of cardiac rehabilitation: a systematic review. *Eur J Cardiovasc Prev Rehabil* 2005;12:513-20.
7. Thompson DR, Bowman GS, De Bono DP, Hopkins A. Cardiac rehabilitation: guidelines and audit standards. Royal College of Physicians, London, 1997.
8. American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR). Guidelines for cardiac rehabilitation and secondary prevention. 4th edn. Human Kinetics, Champaign, Illinois, 2004.
9. Balady GJ, Ades PA, Comoss P, et al. Core components of cardiac rehabilitation/secondary prevention programs: A statement for healthcare professionals from the American Heart Association and the American Association of Cardiovascular and Pulmonary Rehabilitation Writing Group. *Circulation* 2000;102:1069-73.
10. Sanderson BK, Southard D, Oldridge N, et al. AACVPR consensus statement. Outcomes evaluation in cardiac rehabilitation/secondary prevention programs: improving patient care and program effectiveness. *J Cardiopulm Rehabil* 2004;24(2):68-79.
11. Lau-Walker M. Cardiac rehabilitation: the importance of patient expectations--a practitioner survey. *J Clin Nurs* 2004;13:177-84.
12. Dalal HM, Evans PH. Achieving national service framework standards for cardiac rehabilitation and secondary prevention. *BMJ* 2003;326:481-4.
13. Daly J, Sindone AP, Thompson DR, et al. Barriers to participation in and adherence to cardiac rehabilitation programs: a critical literature review. *Prog Cardiovasc Nurs* 2002;17:8-17.
14. Beswick AD, Rees K, West RR, et al. Improving uptake and adherence in cardiac rehabilitation: literature review. *J Adv Nurs* 2005;49:538-55.
15. Lau-Walker M. A conceptual care model for individualized care approach in cardiac rehabilitation--combining both illness representation and self-efficacy. *Br J Health Psychol* 2006;11 (Pt 1):103-17.