

## Secondary prevention among cardiac patients not referred to cardiac rehabilitation

Natalie A Johnson, Kerry J Inder,  
Amanda L Nagle and John H Wiggers

**TO THE EDITOR:** Cardiac rehabilitation (CR) is an underutilised evidence-based treatment.<sup>1</sup>

Between 1 March 1998 and 28 February 1999, we surveyed 1933 patients aged 20 to 85 years discharged from public hospitals in the Hunter region with principal discharge diagnoses of acute myocardial infarction, unstable angina pectoris, congestive heart failure, and ischaemic heart disease. Patients undergoing coronary artery bypass graft surgery and percutaneous coronary intervention were also included. Among the 1202 respondents (62%), 493 (41%) reported being referred to CR, 309 (26%) reported attending at least one session, and 233 (19%) reported completing all or all but one session.<sup>2</sup> The factors associated with referral were younger age, previous participation in CR, admission to a hospital providing CR, a discharge diagnosis of acute myocardial infarction, and coronary artery bypass surgery.<sup>3</sup> We provide the following data, pertaining to non-referred patients, within the context of recent government initiatives to improve access to evidence-based treatments.

Fifty-seven per cent of respondents (688) had not been referred to CR (2% did not answer this question), 645 of whom had not attended previously. The median age of these 645 people was 70 years. Most were male (64%), married (62%), had not completed high school (54%), were not in full-time employment (81%), had not been admitted to a hospital that offers CR (55%), did not have a discharge diagnosis of acute myocardial infarction (78%), and had not undergone revascularisation (92%). These 645 patients were asked if they thought they would have benefited from attendance at an outpatient CR program. Of the 380 patients who did not think they would have benefited, 41% (157) reported having at least three coronary risk factors, 39% (150) were interested in further services, and 26% (100) reported participating in at least one risk-factor-specific secondary-prevention program (Box).

In conclusion, many patients who are not referred for CR reported having multiple coronary risk factors, yet few felt they would have benefited from attending CR or had participated in any alternative risk-factor-specific programs.

### Coronary risk factors, and opinions on the need for and participation in risk-factor-specific secondary-prevention programs

	Total	Felt cardiac rehabilitation would have been beneficial*	
		Yes	No
Number of patients	645	143 (22%)	380 (59%)
Number of self-reported coronary risk factors			
None	60 (9%)	8 (6%)	37 (10%)
One	137 (21%)	32 (22%)	73 (19%)
Two	180 (28%)	45 (31%)	108 (28%)
Three or more	254 (39%)	55 (38%)	157 (41%)
Felt the need for further services	321 (50%)	119 (83%)	150 (39%)
Chose one or more of the following options:			
Information on how to prevent or manage further heart trouble	280 (43%)	112 (78%)	124 (33%)
Help with how to cope with emotional issues arising from heart problems	169 (26%)	82 (57%)	61 (16%)
Exercise classes	130 (20%)	76 (53%)	34 (9%)
Nutrition classes	124 (19%)	71 (50%)	34 (9%)
Quit-smoking programs	51 (8%)	21 (15%)	21 (6%)
Help with stress management	142 (22%)	69 (48%)	51 (13%)
Help with getting back to work	35 (5%)	25 (17%)	10 (3%)
Undertook risk-factor-specific secondary prevention	187 (29%)	50 (35%)	100 (26%)
Participated in the following programs:			
Home exercise plan provided by hospital	62 (10%)	15 (10%)	34 (9%)
Other home-based exercise program	55 (9%)	10 (7%)	31 (8%)
Fitness-centre program	7 (1%)	2 (1%)	2 (0.5%)
Diet/nutrition program provided by hospital	85 (13%)	27 (19%)	46 (12%)
Other diet/nutrition program	57 (9%)	14 (10%)	27 (7%)
Quit-smoking program	25 (4%)	7 (5%)	15 (4%)

\* 19% of non-referred respondents (122/645) did not answer this question. ◆

We agree that system factors resulting in failure to refer should be investigated and rectified,<sup>1</sup> but our data suggest that many non-referred patients would not attend if invited. This highlights the importance of research testing the efficacy of alternative models of CR in the Australian setting,<sup>4,5</sup> and the need for research assessing the effectiveness of these programs in routine health services delivery.

**Acknowledgements:** Natalie Johnson's contribution to this project during 1998–2001 was supported by a National Health and Medical Research Council (NHMRC) Public Health Postdoctoral Fellowship (Regkey 964208). We acknowledge the significant contribution of the late Mrs Janet Fisher to data collection and management, and thank the Heart and Stroke Outcomes Council for permission to use the data.

Natalie A Johnson, Lecturer<sup>1</sup>  
Kerry J Inder, Lecturer (Clinical Epidemiology)<sup>1</sup>  
Amanda L Nagle, Special Program Manager<sup>2</sup>  
John H Wiggers, Director,<sup>3</sup> and Associate Professor<sup>1</sup>

1 School of Medicine and Public Health, University of Newcastle, Newcastle, NSW.  
2 National Heart Foundation of Australia, NSW Division, Sydney, NSW.  
3 Hunter New England Population Health, Hunter New England Health Service, Newcastle, NSW.  
natalie.johnson@newcastle.edu.au

- 1 Bunker SJ, Goble AJ. Cardiac rehabilitation: under-referral and underutilisation. *Med J Aust* 2003; 179: 332-333.
- 2 Nagle A, Fisher J, Wiggers J, et al. Prevalence of being invited, attending and completing phase II outpatient cardiac rehabilitation [abstract]. Third Scientific Forum on Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke. *Am Heart J* 2002; 144: 881.
- 3 Johnson N, Fisher J, Nagle A, et al. Factors associated with referral to outpatient cardiac rehabilitation services. *J Cardiopulm Rehabil* 2004; 24: 165-170.
- 4 Vale MJ, Jelinek MV, Best JD, et al, for the COACH Study Group. Coaching patients on achieving cardiovascular health (COACH). *Arch Intern Med* 2003; 163: 2775-2783.
- 5 Redfern J, Briffa T, Ellis E, Freedman SB. Patient-centred modular secondary prevention following acute coronary syndrome: a randomized controlled trial. *J Cardiopulm Rehabil Prev* 2008; 28: 107-115. □