

HEART MOVES

Heartmoves

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Executive summary

Longitudinal studies have shown that physical activity participation is associated with reductions in all cause mortality and has a specific protective effect in reducing coronary heart disease. Physical inactivity whilst being an independent risk factor for cardiovascular disease (CVD), also affects other modifiable risk factors for CVD including type II diabetes, blood pressure, HDL cholesterol and obesity. Rehabilitation programs involving exercise training and provided by health professionals (eg cardiac rehabilitation) have been shown to be cost effective interventions in reducing mortality, however the transition after rehabilitation to an independent exercise routine is often difficult for patients to maintain in the long term. In addition to this group of clients, the increasing rates of obesity, diabetes, and falls in the elderly highlights the need for low to moderate exercise options, which are safe and appropriate for a significant proportion of the adult population who may also have underlying heart health risk factors. These exercise options also need to be attractive for those who may be sedentary and for whom the perceptions of fitness centres being for 'the young, the fit and the beautiful' may present a barrier to entry.

The **Heartmoves** model was designed as an innovative intervention that provided accessible low to moderate intensity exercise programs for the general population, but which could be safely utilised by those who have risk factors for CVD or with existing stable CVD or type II diabetes. Further, the **Heartmoves** model endeavoured to link health professionals and the fitness industry by promoting integration. Health professionals, in particular general practitioners (GPs), were identified as a key stakeholder group due to their responsibility for CVD prevention and chronic disease management.

Fitness leaders were chosen as they:

- possess current cardio-pulmonary resuscitation accreditation
- are registered with a state authority (fitnessnsw)
- are covered by professional indemnity and public liability insurance
- are required to complete accredited continuing education courses to retain registration
- are available and accessible throughout regional and metropolitan NSW.

A comprehensive evaluation of **Heartmoves** was undertaken to evaluate the safety, quality, reach and acceptability of the program to clients, health professionals and the fitness industry. The evaluation also aimed to determine the program's ability to increase the proportion of low to moderate exercise classes offered by fitness centres, and the proportion of fitness centre clients with CVD risk factors. Baseline and follow-up surveys of both fitness centre managers and clients were undertaken, in addition to a survey of **Heartmoves** participants, and an audit of fitness centre records.

The **Heartmoves** intervention incorporated quality assurance and safety guidelines. The **Heartmoves** Fitness Leader Training Workshop gained accreditation from fitnessnsw (15 Continuing Education Credits) and the content was approved as accurate by the National Heart Foundation of Australia NSW Division (NHFA). **Heartmoves** workshops were well attended by fitness leaders, with 63% of those trained going on to establish **Heartmoves** classes. Additionally, the GP continuing medical education (CME) workshops attracted over 71 GPs and a further 66 Allied Health Professionals attended information workshops. The exercise classes were well received by participants, attracting 400 participants with 80% retention rate at six months

during the intervention. The **Heartmoves** programs successfully attracted the target audience with clients being significantly more likely to be over 60 years, retired, obese, and insufficiently active, than usual fitness centre clients. The program was also well received by fitness centre managers with **Heartmoves** being adopted by 72% of fitness centres in the Hunter. However, the random survey of fitness centre clients showed that despite the uptake of **Heartmoves** within the fitness industry, there was no evidence of a subsequent increase in the proportion of fitness centre clients with CVD risk factors. It was successful however, in increasing the proportion of low to moderate intensity exercise classes offered by fitness centres in the Hunter.

Heartmoves programs were found to be acceptable to health professionals, with 10% and 14% of **Heartmoves** clients having attended cardiac rehabilitation (CR) or diabetes education respectively, in the last 12 months (all requiring medical clearance). The audit of **Heartmoves** records in the fitness centres showed that 26% of **Heartmoves** clients had a GP clearance to exercise (5% proactively referred by their GP and 21% responding to the patient's request for clearance). Further engaging GPs and Allied Health Professionals in the use of **Heartmoves** as a safe physical activity referral option may also strengthen the financial viability of low to moderate intensity programs targeting older adults within the fitness industry.

A concurrent study of cardiac rehabilitation programs conducted during the intervention indicated that while 40% of patients are interested in **Heartmoves**, 29% were advised (by either GP, CR nurse or Cardiologist) to attend and few (7%) participated in the programs. Again, the role of health professionals in referral and encouraging participants to exercise was highlighted. Similarly, in a concurrent

study of walking program participants, few had received referral from their doctor, and self reported participation decreased by 66% over the 12 month period. These findings indicate the need for further investigation into barriers to attendance, and identification of strategies to increase referrals and to translate referrals into attendance.

The results of this study suggest that **Heartmoves** has the potential to become a core program within the fitness industry and that combined with the other dissemination components, can provide a capacity building model for delivering safe, appropriate and accessible physical activity resources to the local community. The acceptability of **Heartmoves** to health professionals suggests that **Heartmoves** has the potential to be utilised as an appropriate referral option for area health service rehabilitation programs as well as in GP developed Enhanced Primary Care plans. However, further work is required to identify the barriers to 'transition' from medically supervised to community based non-medically supervised exercise programs among clients. There is also a need to develop tools and resources to enable health professionals, particularly GPs, to take a more proactive role in referring clients to appropriate and safe exercise options.

Heartmoves provides a safe community based exercise program, available at low cost to the public, delivered by registered, specially trained and accredited fitness leaders, and can potentially link with health professionals. Numerous opportunities to further promote and increase participation in physical activity programs such as **Heartmoves** exist. Further investigation is required into strategies to engage health professionals in physical activity promotion, beyond existing strategies such as workshops and script pads.

From the evaluation of **Heartmoves** and the concurrent studies, the following recommendations are made:

- 1 Fitness centres are an appropriate setting for the provision of specialist physical activity programs, however, marketing strategies to engage the fitness industry should focus upon the financial viability and potential of such programs in fitness centres.
- 2 Further strategies, aside from workshops and script pads, to engage health professionals in the promotion of, and referral to, physical activity programs need to be investigated, particularly the development of eligibility guidelines and streamlined referral and clearance tools.
- 3 The linkages between **Heartmoves** and other health professional programs (such as Enhanced Primary Care planning, Chronic Disease Management Programs, diabetes education and falls prevention initiatives) need to be explored.
- 4 Social marketing strategies to promote safe low to moderate intensity exercise programs should be multi-component to ensure wide coverage and include a centralised listing of locations of such programs.
- 5 Collecting data about participants' reasons for 'dropping-out' of programs would provide valuable information to inform future programs.
- 6 Collecting data about fitness centres, or other provider organisations and the successful launches of the program as well as the reasons for discontinuing such programs would provide valuable information to inform future programs.

Introduction

1.1 Background

Cardiovascular disease (CVD) accounted for 42% of all deaths in Australia in 1996 and 12.5% of the problems managed by General Practitioners (GPs).¹ Eighty percent of Australians have at least one modifiable risk factor for CVD, such as diabetes mellitus, hypertension, hyperlipidaemia, overweight or obesity, and tobacco dependence. At highest risk of further cardiovascular events (stroke and heart attack) are those with existing heart disease. The most prevalent population risk factor for CVD however, is insufficient physical activity, with almost 50% of the population failing to meet recommended levels.²

During the past five years, new epidemiological data have stimulated a strong interest in the promotion of physical activity as an achievable public health strategy for improving health and well-being. There are clear recommendations for moderate physical activity from the NSW Chief Health Officer and key professional bodies such as the Centres for Disease Control, American College of Sports Medicine³ and the American Heart Association.⁴

For coronary heart disease and stroke, there is strong evidence of the benefits of regular exercise.⁵ There is also a strong relationship between increased physical activity and decreases in other risk factors for CVD (ie hypertension, hyperlipidaemia and obesity or overweight).⁶ There is also overwhelming evidence that regular exercise is beneficial in the post rehabilitation phase of CVD and there is mounting evidence for health benefits in relation to type II diabetes, osteoporosis, and arthritis.⁷ Physical activity can be a successful adjunctive, non pharmacological treatment for these conditions.

Physical activity interventions in 'at-risk' individuals, including those discharged from hospital with a cardiovascular diagnosis, and those

with risk factors for CVD but not yet manifest disease, have the potential to reduce mortality and morbidity from cardiovascular disease. In the Hunter region of NSW, there is an estimated 2,500 CVD discharges per year from public hospitals.

Currently in the Hunter region of NSW, patients who have been hospitalised with a cardiac event have the opportunity to participate in a Phase II rehabilitation program, which is usually conducted in the outpatient setting over a five to six week period. However, despite the evidence that regular exercise is beneficial in the post rehabilitation phase of cardiovascular disease, there are limited safe community based, non-medically supervised exercise programs to assist patients in maintaining their participation in regular physical activity.

People in these at-risk groups are often cautious about exercise; believing that it might put them at further risk. Indeed, almost half the respondents in a small Australian survey of retired adults stated that they had been told by a medical practitioner to restrict their physical activity.⁸ Most of these respondents cited hypertension, arthritis, and angina as reasons for not exercising, when in fact all of these conditions could be improved with regular exercise.⁹

Seventy percent of patients discharged after a cardiac event are classified as low risk of future events and therefore do not need ongoing medical supervision to exercise. Many of these patients are not compliant with recommendations to continue with an exercise program without the ongoing support from a group leader. An opportunity therefore exists for low to moderate physical activity programs to be offered in the community which would be available to everyone, but which would be specifically safe for clients with stable CVD or with risk factors for CVD, including diabetes (especially those who had participated in Phase II cardiac rehabilitation).

1.2 Project Development

Fitness industry involvement

After considering issues of access, equity and sustainability, fitness centres were identified as an appropriate community setting to provide a low to moderate intensity exercise program, such as **Heartmoves**. Fitness centres have an acknowledged role in the provision of physical activity programs, with the advantages of central location and being serviced by public transport. Fitness leaders were considered appropriate **Heartmoves** leaders, due to their distribution in the community, established expertise in delivering exercise programs, and their current cardio-pulmonary resuscitation accreditation. Additionally, fitness leaders are registered with a state authority (fitnessnsw) that provides professional indemnity insurance and requires accredited continuing education courses to retain registration.

Barriers to exercise participation in fitness centres

Older adults targeted by programs like **Heartmoves** may perceive a number of barriers to physical activity participation in fitness centres. For example, community perceptions and certain marketing formats within the fitness industry concerning the type of programs being offered (eg ‘go hard or go home’) and the type of participants utilising fitness centres (ie ‘the young, the fit and the beautiful’) are potential barriers. Further, programs could be perceived as high intensity and requiring high levels of fitness with potentially lethal consequences for those with CVD or diabetes. These perceptions are likely to act as barriers to participation among the at-risk target group and to health professionals seeking to refer clients to safe and appropriate physical activity.

The fitness industry has shown interest in altering this image so that ‘ordinary’ people would feel comfortable exercising in their facilities. Although some centres have broadened their focus to include programs for groups such as pregnant women or young mothers, the industry has not yet fully explored the potential of niche marketing for special populations.

Barriers to exercise participation are not limited to fitness centres. Surveys have repeatedly shown that large groups of the population do not exercise because they have ‘nowhere to exercise’ and ‘no-one to exercise with’.¹⁰ Additionally, safety is a particular concern for women, who seem to prefer ‘aerobics’ type activities rather than walking or jogging, because these activities are offered in a safe environment.¹¹ Among the insufficiently active population, poor health, fear of injury, being too fat and having no equipment have also been identified as barriers to engaging in physical activity.¹⁰

In the promotion of physical activity, research suggests that marketing of specific exercise programs is more successful than offering general encouragement to participate in activity.² Programs that involve low travel time, low expenditure and little disruption of other activities are more likely to facilitate maintained participation in physical activity.²

General practitioner involvement

General practitioners (GPs) were identified as one of the key stakeholder groups for **Heartmoves** due to their responsibility for managing secondary prevention of CVD and increasing involvement in chronic disease management (including appropriate advice and prescription of physical activity). Currently, there is under utilisation of fitness centres as a referral option for physical activity by GPs. This may be due to a history of poor perceptions in both sectors, which have impeded the useful flow of expertise, referrals and communication.

The **Heartmoves** GP Working Group of the Advisory Team identified a number of issues associated with GP referral to fitness centres. In particular, concerns were raised about the lack of:

- GP awareness of low intensity options in the fitness industry
- information resources (eg a pamphlet) to distribute to patients about local programs
- feedback from fitness leaders about any adverse reactions or symptoms experienced by the client during exercise
- GP knowledge about which categories of cardiovascular conditions were unsuitable for exercise prescription, even at a low to moderate intensity.

Further issues identified with GP referral of clients to fitness centres included:

- concerns about fitness leader accreditation and training to provide specific programs for participants with or at risk of heart disease or diabetes
- concerns about pre-activity screening
- the increasing requests for GPs to remember and deliver an increasing number of health messages.

Since 80% of the population visit their GP at least once a year, well-informed GPs have the potential to opportunistically screen for physical inactivity among patients and prescribe physical activity. Recent research has shown that patients who receive a written prescription for physical activity and some patient information material from their GP, are 1.6 times more likely than controls to increase their total physical activity by 60 minutes per week at six to ten weeks.¹²

Research exploring how best to engage GPs in the prescription of physical activity is now being explored. General practitioners appear to be effective in initiating physical activity participation, but other strategies such as the development of appropriate programs is needed to capitalise on this initial change and enable sustained behaviour in the longer term.

1.3 Project management

The **Heartmoves** project was managed by a multidisciplinary team, which reflected a collaborative partnership between the health and fitness industries (see Appendix A). Funded by a NSW Health Physical Activity Demonstration Research Grant, the initiative built on the strong partnership already established between the Hunter Area Health Service and the National Heart Foundation of Australia (NHFA) (NSW Division, Hunter Branch).

The project manager was based at the Heart Foundation along with one of the project staff, whilst another project officer was based at John Hunter Hospital. The project management team (see Appendix A) met fortnightly, while the larger advisory team (see Appendix A) met three times during the project.

Ethics approval for the project was granted by the Hunter Area Health Service's Ethics Committee.

1.4 Project aim and objectives

Aim

The aim of the **Heartmoves** project was to develop and implement an innovative and sustainable exercise program that met the needs of older clients, particularly those with, or at risk of CVD, which was acceptable to both the fitness industry and referring health professionals.

Objectives

The objectives of the **Heartmoves** project were to:

- 1 Evaluate the **Heartmoves** intervention in terms of its:
 - quality and safety
 - acceptability
 - reach
 - retention.
- 2 Determine the intervention's effectiveness in increasing the proportion of fitness centre clients with CVD risk factors by 5% from baseline to follow-up.
- 3 Determine the intervention's effectiveness in increasing the proportion of low to moderate intensity exercise classes offered by fitness centres in the Hunter region from baseline to follow-up.

Concurrent studies

In addition to the **Heartmoves** intervention, two concurrent studies were undertaken in parallel. The first followed a cohort of clients participating in cardiac rehabilitation for nine months to determine participation in physical activity, and the second study examined the extent and nature of participation in structured walking programs in the Hunter during the intervention period. The results of these concurrent studies are reported in Sections 5.3 and 6.3.

2.1 The intervention

The intervention was designed at a workshop of the project Advisory Team, and included a number of components.

Heartmoves training

The **Heartmoves** training and accreditation program for fitness leaders was developed by a working group that included representatives from:

- fitness centres
- fitness leader training providers (Department of Sport and Recreation, TAFE and fitnessnsw)
- providers of assessment and referral services for at-risk individuals (diabetes education, cardiac rehabilitation and Divisions of General Practice)
- the target group (at-risk individuals).

Heartmoves Leader Training Manual

A team of experts drawn from the Advisory Team developed the training manual for **Heartmoves** leaders, which was based on NHFA's Exercise for people with Heart Disease (guidelines for the prescription and conduct of non-medically supervised, community-based exercise programs). The draft document was then circulated to experts in endocrinology, cardiology and exercise physiology for comment. The NHFA's NSW Cardiac Rehabilitation Advisory Committee also reviewed the accuracy of the training manual's content.

Heartmoves leader training workshops

Two workshops that followed the training manual exactly, with 10-12 participants each, were developed and delivered over 2.5 days in Area Health Service facilities. The cost to participating fitness leaders was \$350, which was in accordance with current market prices. The course was designed to provide participants with a basic understanding of the nature of, and current treatments for, CVD and diabetes, with emphasis being placed on the ongoing self-management of chronic illnesses.

The health professionals and solicitor who delivered the training discussed the increases in risk and benefit of exercise among clients with CVD or diabetes, and the need for concomitant risk assessment and management. The session delivered by the solicitor was a crucial component of the training program and highlighted the need for adherence to training guidelines and professional standards in confidential record keeping, retaining documentation from health professionals, and adherence to the pre-exercise screening protocol within **Heartmoves**.

A fundamental element of the training was to affect attitudinal change among fitness leaders. This attitudinal change involved redefining the perceptions of what constituted a 'good' leader within the **Heartmoves** program (eg keeping the intensity low, encouraging people to perform at their own level of perceived exercise intensity). Further, concepts of what was a 'good' **Heartmoves** participant were explained (eg one who only exercises at their own (moderate) rate of perceived exertion, takes frequent rest stops as self indicated and alerts the leader to any signs of exercise intolerance). Fitness leaders utilised the practical components in the training program to work up and demonstrate their own **Heartmoves** classes, which adhered to the following training guidelines:

- participants are guided to work only at a Rate of Perceived Exertion of 3-5 (moderate) on the modified 10 point Borg Scale (see Appendix B), about 50-70% of Maximum Heart Rate
- classes are open to everyone to exercise in a social, fun and safe environment at a low to moderate intensity
- classes are specifically designed to be safe for those with or at risk of cardiovascular disease and diabetes
- class size is recommended to be limited to 25-30 (even smaller in the early phases of establishing a group)
- class format consists of 4 components:
 - warm-up (10mins)
 - conditioning/strength (10-15mins)
 - endurance (10-15mins)
 - cool down (10mins).

- participants are encouraged to work at their own pace and use chairs for rests within a session
- leaders should develop different levels or versions of specific exercises for use with individuals with limitations (eg seated versions of an exercise)
- leaders should overtly and regularly encourage exercising only at the moderate level
- music appropriate for the age group used as background (approximately 120-130 beats per minute)
- all participants must complete a pre-exercise assessment form (PEAF) prior to participating in a **Heartmoves** class (see Appendix C)
- leaders should advise appropriate participants (as indicated on their PEAF) to visit their GP for medical clearance to exercise
- referring health professionals should be informed of progress (using the health professional fax back form) at regular intervals if requested
- leaders should display the safety protocols (posters provided), for the management of hypoglycaemia and chest pain and have a rehearsed safety routine in the event of an incident (eg handy cards indicating specific actions for members of the class, such as front desk contact of ambulance, notification of GP, waiting at the front to direct the ambulance)
- leaders should have glucose tablets readily available (or jellybeans) for diabetics
- classes must have a mandatory ten minute warm up period at the beginning of a class (if late then a participant may not participate until completing this component) and a mandatory ten minute cool down period at the end. Additionally there should be a social 10-15 minutes at the end to enable feedback on the intensity and work rate and potential signs of intolerance
- within these guidelines, leaders may create multiple varieties of exercise programs including aqua, circuit, floor aerobics, games etc.

Fitness leaders were also invited to attend a local cardiac rehabilitation program for one session as an observer to witness the types of exercise being delivered in that setting. They were also invited to attend one session of a local diabetes education program for similar experience.

Heartmoves leader resources

A number of supportive resources were developed specifically for the **Heartmoves** leaders and included a pre-exercise assessment form, a health professional fax back form, and a class attendance log.

Pre-exercise assessment form

The pre-exercise assessment form (PEAF) (see Appendix C) was modified from an industry screening tool. The modifications ensured that the screening tool adhered to the current US and Australian guidelines^{13,14} for identifying individuals requiring medical clearance before participating safely in exercise at a low to moderate level. The aim of the screening tool was to systematically identify those individuals with a chronic illness and advise them to check with their GP prior to exercising and seek medical clearance to exercise. The PEAF was kept in the records of the **Heartmoves** leaders along with any referral or clearance from GPs.

Health professional fax back form

The fax back form was designed to enable **Heartmoves** leaders to send information to GPs and allied health professionals in a standard way. It provided information to GPs and Allied Health professionals about attendance and any reported symptoms of exercise intolerance among participants they had referred to the program. Permission was gained from the participant to transfer information to health professionals.

Class attendance log

The log enabled standardised record keeping across leaders and was considered appropriate professional behaviour for improving risk management and thereby minimising risk to the leader.

Workshops

General practitioner workshop

A continuing medical education (CME) workshop accredited with nine CME points was developed and delivered in collaboration with the Hunter Post Graduate Medical Institute. Two workshops were delivered, one each to the Rural and Urban Divisions of General Practice. The workshops attracted sponsorship from pharmaceutical companies and were free for participating GPs. Presenters included a National Heart Foundation (Hunter)

representative, and a cardiologist and endocrinologist, both of whom were members of the Advisory Team. The workshops were titled Physical Activity and the Management of Cardiovascular Disease and Diabetes and presented information about the:

- physiological and clinical evidence basis for the role of physical activity in managing specific chronic illnesses
- population evidence for physical activity and health
- behavioural evidence for the GP's role in the promotion of physical activity
- Active Australia messages
- **Heartmoves** program (which included a demonstration)
- local walking programs.

GPs were also provided with an 'Active Script' pad¹² and **Heartmoves** information pamphlets, which included a locality guide of accredited leaders and their contact details.

Allied health professionals' workshop

As many of the target group patients would be seen by allied health professionals through outpatient clinics, community health centres and home visits, it was considered important to provide these health professionals with a **Heartmoves** training opportunity. Therefore, a half-day workshop was presented with invitations and fliers sent to the Heads of all Allied Health Departments within the Hunter Area Health Service (HAHS). The workshop was again presented as Physical Activity and the Management of Cardiovascular Disease and Diabetes, and again experts from the specialties of endocrinology and cardiology were among the presenters.

Each attending health professional received a modified Active Script pad (including an option to refer to a GP for clearance to exercise), and a recommendation to exercise pad. The program for the workshop also included presentations on two community-based walking programs, *Walking for Pleasure* (Department of Sport and Recreation) and *Just Walk It* (NHFA). A demonstration of a **Heartmoves** class was also included in the workshop.

Fitness centre managers' workshop

Fitness centre managers were invited to attend a half-day workshop where **Heartmoves** and Active Australia information and resources were provided. The appropriateness of the **Heartmoves** program to at-risk clients was discussed, with further information presented at the workshop including:

- statistics on the current levels of inactivity and cardiovascular disease to illustrate the size of the potential target market
- the NSW Chief Health Officer's current message of the benefits of moderate intensity exercise
- the proposed involvement of health professionals in a referral and feedback mechanism with accredited fitness leaders
- the specific exercise needs of individuals with cardiovascular disease and diabetes
- the importance of risk management when exercising with at-risk clients.

Marketing

As **Heartmoves** was open to all population groups, not just at-risk groups, a social marketing component was included as part of the intervention.

Public launch

The public launch of **Heartmoves** during Heart Week in 1999 involved three shopping centre demonstrations and media releases about the importance of physical activity and heart health.

Demonstrations and presentations

Heartmoves demonstrations and presentations occurred at individual fitness centres and at the Seniors Expo, with individual fitness leaders providing free first session passes for potential customers. Information about **Heartmoves** was also incorporated into the general health promotion of the NHFA in the Hunter region during community talks and presentations.

Direct promotion to general practitioners

A pharmaceutical company offered to distribute **Heartmoves** pamphlets and the Active Script pad to GPs during their visits, as a value added program.

Newspaper articles

Briefing documents were supplied with photographs of **Heartmoves** classes to journalists at relevant times such as Seniors Week and Heart Week (see examples of media coverage in Appendix F).

Posters and pamphlets

The **Heartmoves** public information pamphlet (see Appendix D) and locality guide, supplied free of charge to GPs and allied health professionals, were also available for purchase by the fitness leaders (for their own marketing initiatives). **Heartmoves** program posters with space available for writing in specific contact and class details were also distributed.

Fridge magnets and t-shirts

A plain white t-shirt with the **Heartmoves** logo on the front was printed and supplied, at a cost of \$10 to fitness leaders for sale to their participants. Additionally, a small magnet with the **Heartmoves** logo was designed for use by fitness centres on their class schedule display boards (see Appendix D). This enabled consistency of the brand recognition by the public.

2.2 Evaluation

Baseline and follow-up cross sectional surveys of fitness centre managers and fitness centre clients were used to determine the intervention's effectiveness in:

- increasing the proportion of fitness centres offering low to moderate intensity exercise classes
- increasing by 5%, the proportion of clients with CVD risk factors exercising in fitness centres.

In addition to these surveys and a survey of **Heartmoves** participants, a number of process level indicators were used to assess the quality, safety, acceptability, reach, and retention rates of the **Heartmoves** program.

Surveys

Fitness centre managers' survey

To determine **Heartmoves** effectiveness in increasing the proportion of low to moderate intensity exercise classes offered by fitness centres in the Hunter, a baseline survey of fitness centre managers was conducted between September and November 1998 with a follow-up survey conducted one year later.

The follow-up survey occurred four to six months after the launch of the **Heartmoves** program in the Hunter region. The baseline survey provided information about the initial nature of fitness centres in the Hunter and the follow-up measured any changes after the launch of the **Heartmoves** program.

The surveys were conducted by telephone and included questions about characteristics of the fitness centre, staff profile, types of programs offered, and procedures for health risk screening. All fitness centres and personal trainers with businesses listed in the *Yellow Pages* in the Hunter region were eligible for inclusion in the study.

Fitness centre clients' survey

A baseline and follow-up survey of fitness centre clients was conducted to determine **Heartmoves'** effectiveness in increasing the proportion of fitness centre clients with CVD risk factors by 5%. The baseline, self-complete survey of fitness centre clients was conducted between September and November 1998 (before the introduction of **Heartmoves**) and the follow-up survey exactly one year later. The baseline and follow-up surveys were identical except for an additional question about **Heartmoves** participation in the follow-up survey. Cross sectional sampling on a randomly selected weekday ensured that each fitness centre was surveyed for one day randomly selected at both baseline and follow-up.

The questionnaire collected information about sociodemographic characteristics (including age, gender, marital status, education, employment, and country of origin). It also collected information about cardiovascular risk profile including:

- participation in physical activity (see Appendix E)
- smoking status
- body mass index (BMI) (see Appendix E)
- family history of CVD and previous history of CVD risk factors (diabetes, high blood pressure, previous stroke or heart problem and high cholesterol).

Knowledge questions regarding physical activity messages were also contained in the survey.

On the data collection days, research staff from the NHFA set up an 'information booth' and distributed surveys, information, and consent letters to each eligible person upon entering the facility between 8.00am to 12.00pm and 2.00pm to 6.00pm. Managers had been previously informed about the data collection protocol and were given 24 hours notice of the data collection day for their centre. An automatic counter was used to record the total number of people entering the exercise area of the fitness centre. People who were obviously not there to exercise were excluded from the count (ie sales representatives in suits, parents watching school sports, students in school uniform and staff). Fitness centre managers provided a 'prize' of a partial membership for one client of their centre who completed the survey. Participants were able complete the survey on the day, or nominate for a telephone interview at a convenient time.

Process level indicators

Quality and safety

Heartmoves leader training

The quality indicators for the Heartmoves leader training were the ability of the manual and course content to gain endorsement by the NHFA, and the ability of the training program to gain accreditation from fitnessnsw.

Adherence to Heartmoves training guidelines

Two quality assurance (QA) audits of each fitness leader were conducted during the program, and involved two members of the training team observing a Heartmoves class and rating the leader's adherence to the training guidelines. The first QA audit occurred approximately two to four months after the leader had completed their training at a mutually agreed time. Personalised feedback about the leader's adherence to Heartmoves guidelines was provided as a form of positive feedback in this first audit. Leaders were also provided with a collated summary of the average scores on each QA item for all leaders in the Hunter, enabling them to see their own score in relation to the average. Six weeks after the initial feedback was provided, the second QA audit was conducted by the same team with the timing of this visit unannounced.

Adherence to pre-exercise screening procedure

During a records audit at fitness centres, the following indicators were counted:

- number of participants on the Heartmoves attendance records who had a completed PEAf
- number of participants whose PEAf indicated a cardiovascular risk profile, for which medical clearance was advised
- number of PEAfs that had a written GP or allied health professional referral/clearance form attached.

In addition, the date on the PEAf and the date on the GP referral were recorded. This enabled a calculation of whether the GP had initially referred the participant or whether the participant had approached the GP for a medical clearance to exercise.

Acceptability

Heartmoves training

The indicators of the acceptability of the Heartmoves training program to fitness leaders were:

- number of registered fitness leaders completing the Heartmoves Training Program
- proportion of accredited Heartmoves fitness leaders who established a Heartmoves program in the Hunter after completing their training (the yield of the training program).

Heartmoves participants

A survey of Heartmoves participants conducted nine months after the launch of the program collected data about sociodemographic and attendance characteristics, and program acceptability. Heartmoves leaders were requested to either give or mail out the survey, with a reply paid envelope and information letter, to all participants who had ever enrolled in their Heartmoves classes. This included former participants who had dropped out and those who were still involved but just absent that week.

The **Heartmoves** participants' questionnaire used the same core questions as the fitness centre participants' survey. Additional questions included in the **Heartmoves** participants' questionnaire collected information about:

- how they became aware of **Heartmoves**
- how often they participated
- whether they had completed a cardiac rehabilitation program or a diabetes education program in the last 12 months
- their satisfaction with the program.

Fitness centre managers

Baseline and follow-up surveys of fitness centre managers (described previously) included questions about:

- barriers to the development of programs for special populations
- barriers to the implementation of **Heartmoves***
- the potential of **Heartmoves***

Reach

Heartmoves participants

The survey of **Heartmoves** participants included questions about radio, TV, and newspaper promotions, and how the participant found out about **Heartmoves**.

Fitness centres

Nine months after the public launch of **Heartmoves** a research staff member visited each fitness centre and determined the:

- number of fitness centres delivering at least one **Heartmoves** program
- total number of individual **Heartmoves** programs offered.

Telephone line referral

In a combined print media advertising initiative (jointly funded by fitness centres) and a **Heartmoves** editorial that ran in the Newcastle Herald, the NHFA telephone number at the Hunter office was given as the number to call for information. The names and phone numbers of those who responded were

logged and a **Heartmoves** pamphlet containing the locality guide was mailed to each caller. After three months these callers were telephoned and asked whether they had received the pamphlet, attended a fitness centre, or were currently participating in a **Heartmoves** program. This provided a response rate to the media coverage and an overall yield into the **Heartmoves** program from telephone inquiries.

GPs and Allied Health professionals

GPs' and allied health professionals' interest in the **Heartmoves** program was assessed by the number of GPs and allied health professionals attending the relevant workshop. Further, pro-active referral of clients from GPs and allied health professionals to the program was calculated.

Media coverage

Local monitoring of daily and weekly newspapers was conducted.

Retention

Heartmoves participants

An audit of participant records kept by **Heartmoves** leaders was conducted to determine the:

- number of participants who had ever enrolled in **Heartmoves**
- proportion of these 'ever enrolled' participants, who were still exercising in **Heartmoves** in the two weeks preceding the audit (ie had attended at least one **Heartmoves** session during the preceding two weeks).

Data analysis

Frequencies and proportions were calculated for descriptive data using Stata statistical package – Version 5. Differences between baseline and follow-up in the proportion of at-risk participants exercising in the fitness centres were analysed using Chi Square tests. Continuous data were analysed using ANOVA. For non independent samples the McNemar's Chi Squared test was applied to matched data points from Baseline to Follow-up. Refer to Appendix E for calculations of BMI and 'adequate physical activity'.

* Follow up survey only

Results

3.1 Surveys

Fitness centre managers' survey

Response rate

Of the 28 fitness centres in the Hunter, 27 of the managers participated in the baseline survey. At follow-up, of the 25 still operational centres, 23 managers participated. The response rates for baseline and follow-up were 96% and 92% respectively.

Fitness centre characteristics

The survey of fitness centre managers in the Hunter showed that the mean:

- length of time in operation for the centres was 13 years
- length of time the manager had been managing the centre was three years
- number of individuals estimated to be participating in exercise each week at the centre was 300 at baseline and 350 at follow-up.

At baseline, fitness centre managers in the Hunter reported employing 452 fitness leaders, with the majority (69.9%) being employed on a casual basis (11.5% part time and 18.5% full time). The main barrier to developing programs for special populations such as people with heart conditions, identified by the managers at baseline, was lack of trained staff (84% of managers, which dropped to 48% of managers at follow-up).

Programs offered by fitness centres

The proportion of fitness centres offering the high intensity program 'New Body' decreased significantly during the **Heartmoves** intervention. Additionally, the proportion of centres offering the lower intensity programs of Active Over 50's and **Heartmoves** increased significantly (Table 3.1) from baseline to follow-up (from 48% to 82% and from nil to 64% respectively).

Table 3.1 Programs offered by fitness centres

Programs offered	Baseline (n=25)	Follow-up (n=22)	X ^{2**}	p
Higher intensity:				
• beginners circuit	72%	68%	0.14	0.700
• advanced aerobics	80%	68%	3.00	0.080
• beginners step	76%	67%	0.33	0.560
• advanced step	80%	73%	0.33	0.560
• high impact aerobics	60%	64%	0.00	1.000
• fat burners/weight loss	88%	86%	0.20	0.650
• pump	68%	77%	0.11	0.740
• new body	84%	50%	6.40	0.010*
Lower intensity				
• yoga/stretch/relaxation	32%	45%	1.29	0.260
• active over 50s	48%	82%	8.00	0.005*
• Heartmoves	0%	64%	14.00	0.001*
• Aqua	28%	22%	0.33	0.560

* Significant difference between baseline and follow-up surveys at p<.05.

** McNemar's Chi Squared analysis performed on matched pairs (with data at both times).

Health risk screening and management

Significant increases were found in the proportion of fitness centre managers reporting risk assessment and risk management strategies between baseline and follow-up; in the areas of emergency protocols for managing fainting and chest pain (Table 3.2).

Table 3.2 Risk assessment and risk management strategies reported by fitness centres

Programs offered	Baseline (n=25)	Follow-up (n=22)	X ^{2**}	p
All clients asked at first visit about health/medical history.	56%	68%	0.00	1.00
All clients required to complete a written health/medical history at first visit.	40%	50%	1.00	0.32
Displayed emergency protocols for managing:				
• CPR	80%	91%	0.20	0.65
• fainting/collapse	24%	55%	4.45	0.03*
• chest pains	24%	64%	6.23	0.01*
• acute shortness of breath.	28%	45%	0.82	0.37

* Significant difference between baseline and follow-up surveys at p<.05.

** McNemar's Chi Squared analysis performed on matched pairs (with data at both times).

Fitness centre clients' survey

Response rate

At baseline, the 25 fitness centres had a total of 3,066 clients. At follow-up 23 fitness centres had a total of 2,310 clients. The response rate for the baseline and follow-up surveys of fitness centre clients was 60% and 72% respectively.

Characteristics of fitness centre clients

The sociodemographic characteristics of the fitness centre clients in the baseline and follow-up surveys are presented in Table 3.3.

Table 3.3 Sociodemographic characteristics of fitness centre clients

Characteristic	Baseline (n=25)	Follow-up (n=22)
Mean age	35 years	34 years
Female	56%	62%
Married	57%	55%
Education – Completed secondary school or above	66%	54%
Employment – Full time, part time or self employed	67%	62%
Born in Australia	88%	87%

The median length of attendance at the fitness centre was 0.9 years at baseline and 0.4 years at follow-up. Of those surveyed, 5% at baseline and 3% at follow-up reported being referred by a health professional.

Self reported cardiovascular risk profile of fitness centre clients

Table 3.4 displays the comparison between baseline and follow-up for CVD risk factors reported by fitness centre clients. In addition, a calculation was made of the total number of risk factors reported for each participant. As shown in Table 3.4, the levels of risk for BMI and smoking are similar to those found in a 1995 population survey.¹⁵ The level of adequate physical activity participation in the fitness centre population

is very close to 100%, which could be expected in this sample and much higher than in the general population. The proportion of fitness centre clients with high blood pressure, high cholesterol levels, and existing heart disease are less than those found in the general population, however approximately the same for those with diabetes.

An objective of the project was to determine the intervention's effectiveness in increasing the proportion of fitness centre clients with CVD risk factors by 5% from baseline to follow-up. However, none of the CVD risk profile characteristics were found to be significantly different from baseline to follow-up (Table 3.4).

Table 3.4 Self-report CVD risk profile of fitness centre clients

CVD risk factor	AIHW 1995 data¹⁵	Baseline (n=1831)	Follow-up (n=1666)
BMI (25 ≥ obese/overweight)	56%	54.6%	54.1%
Smoking	24%	21.8%	19.9%
Insufficient physical activity*	43%	3.0%	2.5%
Blood pressure	17%	10.6%	10.7%
Angina	16% (with a cardiovascular condition)	1.2%	0.9%
Heart attack		1.2%	1.6%
Stroke	0.6%	0.6%	0.7%
High cholesterol	35%	8.1%	10.0%
High triglycerides	No data available	1.7%	2.4%
Diabetes	2% (diagnosed)	2.3%	1.9%
Peripheral vascular disease	No data available	0.5%	0.6%
Family history of heart disease	No data available	26.5%	29.1%
No. of CVD risk factors:			
• none	20%	23.6%	23.8%
• one	68%	42.7%	41.7%
• two	(with 1 or 2 risk factors)	23.4%	23.6%
• three or more.	12%	10.0%	11.2%

* (< 800 Kcals/week)

Heartmoves participant survey

Response rate

The response rate for the Heartmoves participant survey was 65% (147/225) for Heartmoves leader distributed surveys, and 36% (74/204) for surveys mailed by the Heartmoves leaders. The overall response rate was 51% (221/429).

Characteristics of Heartmoves participants

A summary of the characteristics of Heartmoves participants compared to the general fitness centre clients measured at follow-up is provided in Table 3.5. Heartmoves participants were significantly more likely to be older, retired, not to be employed, not to have completed high school and have been referred by a GP than the general fitness centre client population. In relation to CVD risk factors, data on the two comparable risk factors – overweight or obesity, and insufficient activity showed that compared to the general fitness centre clients Heartmoves clients were significantly more likely to be overweight or obese (90% vs 54% $p < 0.001$) and insufficiently active (7% vs 3%, $p < 0.001$). Additionally 10% of participants reported having attended cardiac rehabilitation and 14% reported attending diabetes education in the preceding 12 months.

In the follow-up survey of general fitness centre clients only 49 (2.9%) participants reported being part of a Heartmoves program. However, there were 44 programs operating in the Hunter centres at follow-up with at least 400 participants (fitness centre audit data). It appears likely that the random selection of one weekday per centre on which to implement the survey may have omitted the days on which the Heartmoves programs were delivered. This possible omission of Heartmoves clients from the follow-up general fitness centre client survey, may subsequently have influenced the finding of no significant differences in the follow-up fitness centre population on CVD risk factors.

The sample of general fitness centre clients contained 49 people who reported being Heartmoves participants. It is possible these 49 people were also captured in the Heartmoves sample and there is no way of identifying and therefore removing them from the analysis. Given the large numbers in the fitness centre sample, even if these 49 were all removed there would be minimal effect on the Chi Squared calculations.

Table 3.5 Comparison of Heartmoves participants to fitness centre clients

Characteristics and risk factors	Heartmoves participants (n=225)	Fitness centre participants (follow-up) (n=1666)	χ^2	p-value
Aged > 60 years	70%	6%	359.09	0.000***
Female	79%	62%	484.04	0.028***
Retired	62%	7%	275.99	0.000***
Employment – Full-time, part-time or self employed	11%	62%	75.95	0.000***
Education – Completed secondary school	33%	63%	21.12	0.000***
Married	68%	55%	3.21	0.730
Born in Australia	87%	88%	0.00	0.988
Referred by GP	24%	3%	111.66	0.000***
BMI $\geq 25^*$	90%	54%	22.77	0.000***
Insufficient physical activity**	7%	3%	11.77	0.001***

* (Obese/overweight).

** (< 800 Kcals/week).

*** Significant difference at $p < .05$.

3.2 Process level indicators

Quality and safety

Heartmoves leader training

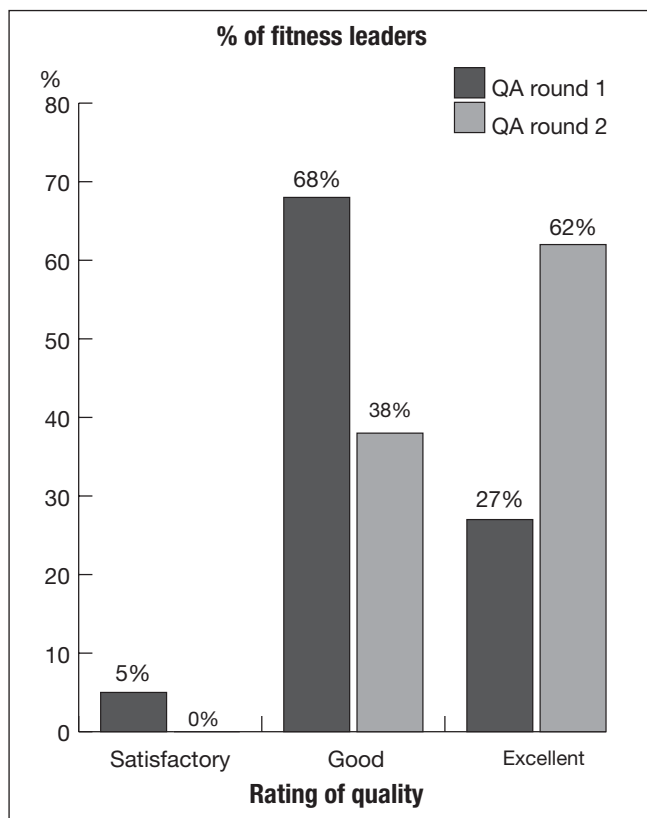
The Heartmoves training manual received endorsement from the NHFA (NSW) Cardiac Rehabilitation Advisory Committee. Further, the training program was successfully accredited with fitnessnsw and awarded the maximum 15 Continuing Education Credits (CEC) for participating fitness leaders.

Heartmoves leaders must have current registration as a fitness leader and current CPR training.

Adherence to Heartmoves training guidelines

The first QA audit of the 22 active Heartmoves leaders showed that 68% of leaders were ranked on average as ‘good’ and 27% ranked as ‘excellent’. The remaining 5% received an average ranking of ‘satisfactory’. As Figure 3.1 shows, there was additional improvement in adherence to the guidelines from the first QA audit to the second, with 62% of leaders ranked as ‘excellent’ on the second QA audit.

Figure 3.1 Comparison of overall scores for fitness leaders on quality assurance audit



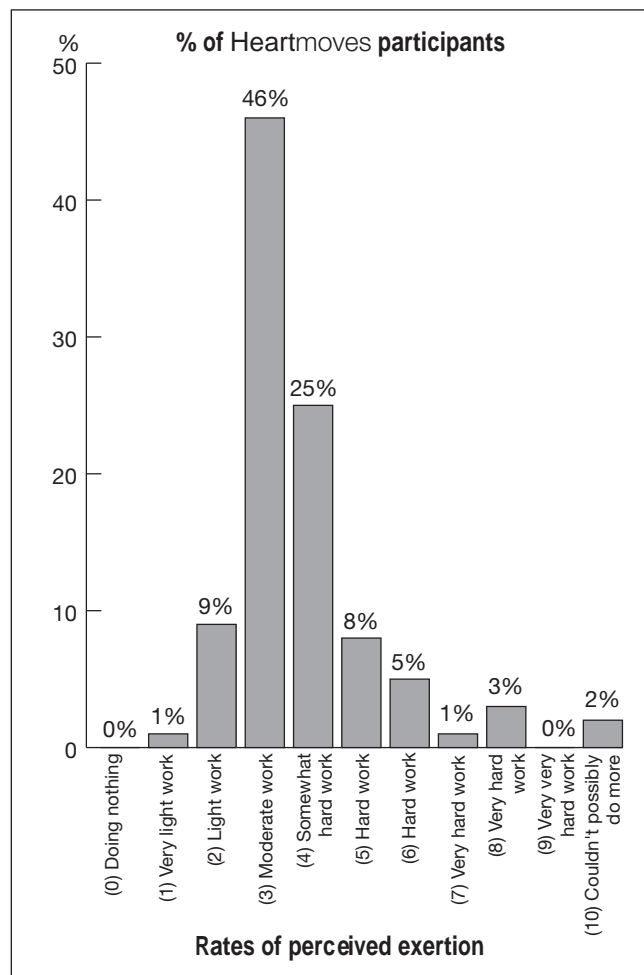
Adherence to pre-exercise screening procedure

Of the 400 enrolments in the Heartmoves program, 93% of participants had a completed PEAf. Of the completed PEAfs, 80% indicated that they had a chronic condition for which they were advised to seek medical clearance before exercising. Of those who indicated a chronic condition 65% signed the ‘waiver’ on the PEAf indicating that they already had medical clearance to exercise and the remaining 35% had a written medical referral/clearance form attached to their PEAf.

Adherence to low-moderate intensity

Figure 3.2 shows that among the Heartmoves participants surveyed, 89% reported their Rate of Perceived Exertion (RPE) as ≤ 5 on the modified Borg 10 point scale (see Appendix B). A total of 79% of the participants reported working between 3-5 on the RPE Scale, a further 10% reported working below 3 whilst 11% reported that they were working above 5.

Figure 3.2 Rates of Perceived Exertion (RPE) reported by Heartmoves participants



Acceptability

Heartmoves training

Twenty-four fitness leaders attended the two initial **Heartmoves** training workshops. Due to demand, an additional workshop was delivered two months later to a further 11 fitness leaders. Therefore in total, 35 fitness leaders completed the training workshop. Of these, 63% had established a **Heartmoves** class within six months of the launch (ie the training program yielded 63% 'active' **Heartmoves** leaders) and a further 34% reported that they intended to establish a **Heartmoves** class within the next 12 months.

Heartmoves participants

Satisfaction with **Heartmoves**

Heartmoves participants were asked to rate on a four point Likert scale how satisfied they felt with various aspects of the program. Response options for 'satisfied' and 'completely satisfied' were then aggregated and are presented in Table 3.6.

Table 3.6 Participant satisfaction with **Heartmoves**

Item	% reporting satisfaction (n=221)
Leader's respect for safety	99.5
Leader's ability to let them work at their own speed	99.0
Leader's understanding of their needs	98.0
Leader's helpfulness	98.0
Leader's music speed	96.0
Thought the name Heartmoves described the program well	96.0
Thought that the price structure was appropriate	95.0
Leader's music choice	93.0
Leader's music volume	93.0

Attendance and cost

Heartmoves participants reported that they averaged about two classes or 1.4 hours of **Heartmoves** each week, and walked an average of five times per week, in addition to their **Heartmoves** programs. The average cost of a **Heartmoves** session was \$3.60, with the majority (75%) of classes less than or equal to \$5. Almost all (95%) **Heartmoves** participants reported that they thought the price was appropriate.

Fitness centre managers

The survey of Fitness Centre Managers included questions about Managers' perceived barriers towards programs for special populations, and, specifically, their awareness of, and attitudes towards, **Heartmoves**. A summary of the results is contained in Table 3.7. There were a total of 35 fitness leaders trained in **Heartmoves**, some worked in centres which had not yet adopted a **Heartmoves** program, but their managers would have nevertheless been aware of the Fitness Leader Training program and have attended the Managers Workshop. This could explain the finding that 100% of fitness managers thought **Heartmoves** leaders were appropriately trained yet 100% did not have a **Heartmoves** program operating.

The proportion of fitness managers who thought that the lack of trained staff was a barrier to developing programs for special populations decreased significantly from baseline to follow-up ($p \leq 0.05$), after the **Heartmoves** intervention.

Table 3.7 Fitness centre managers' perception of Heartmoves programs

Main barrier identified to developing programs for specialised populations	Baseline (n=25)	Follow-up (n=21)
Lack of trained staff	84%	48%*
Awareness/attitudes of Heartmoves		
Aware of Heartmoves (n=22)	NA	95%
Delivering at least one Heartmoves program (n=22)	NA	64%
Agree with the following statements:		
• Heartmoves has the potential to become a core program in the fitness industry (n=21)	NA	67%
• Heartmoves is a good investment for the fitness industry (n=17)	NA	35%
• Heartmoves has the potential to grow (n=17)	NA	94%
• liability risks are too great (n=18)	NA	16%
• record keeping requirements of Heartmoves are too great (n=17)	NA	35%
• biggest barrier is attracting new participants when starting up new program (n=20)	NA	60%
• participants might be lost when requested to get a medical clearance (n=17)	NA	53%
• Heartmoves leaders adequately trained (n=17)	NA	100%
• sufficient support is provided to establish Heartmoves in centre (n=17)	NA	83%

* McNemar's Chi Squared analysis for matched data points at both times. $X^2=4.45$; $p \leq 0.05$.

Reach

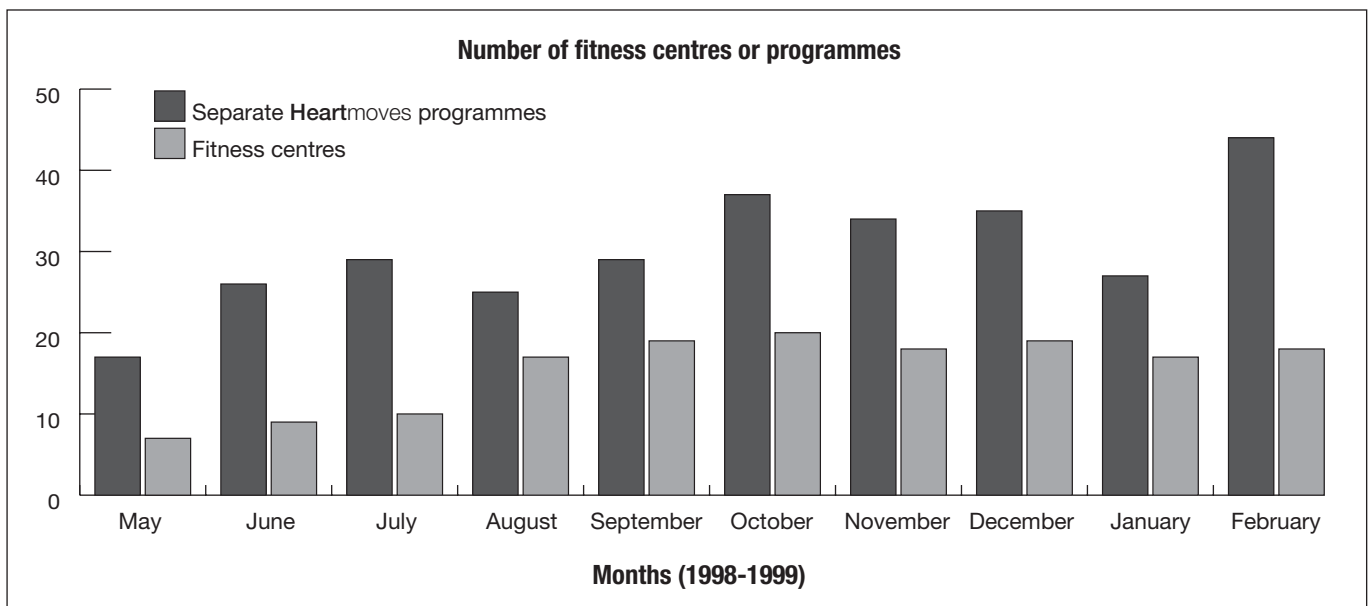
Heartmoves participants

Of the 225 Heartmoves participants who responded to the survey:

- 37% reported first finding out about Heartmoves through family and friends
- 28% reported seeing a TV commercial for "Active Over 50's"
- 14% found out through allied health professionals;
- 13% found out through newspapers
- 13% reporting seeing a TV commercial for Heartmoves (it featured in the NBN Today Extra)
- 11% found out through fitness centres
- 8% found out through mailed pamphlets
- 9% reported seeing the NSW Health 'Tin Man' commercial
- 6% found out through GPs.

Fitness centres

In 1999 (baseline) there were 25 fitness centres operating in the Hunter. Seven months after the launch of Heartmoves at the follow-up survey, there were 23 centres still operating and the survey of 22 consenting managers found that 14 (64%) were offering at least one Heartmoves program. Nine months after the launch of the Heartmoves program, the fitness centre record audit found 18/23 (84%) were offering at least one Heartmoves class. These centres offered a total of 44 individual Heartmoves sessions (an average of 2.4 programs per centre). The Heartmoves programs were offered between 9.00am and 4.00pm on weekdays (which is known to be the quiet period within the fitness industry). Figure 3.3 illustrates that the number of individual Heartmoves sessions increased over the intervention period from May 1998 to February 1999.

Figure 3.3 Fitness centres offering Heartmoves programmes**Telephone line referral**

A total of 87 calls were recorded at the Hunter office of the Heart Foundation as a result of the specific article on the Heartmoves program in the Newcastle Herald (see Appendix F for a sample of a media article). Three months later, 57% of these callers were re-contactable and 6% had participated in Heartmoves.

GPs and Allied Health professionals workshop attendance

A total of 55 GPs attended the Hunter Urban Division of General Practice workshop (there are approximately 350 GPs in this Division) and a further 16 GPs attended the Hunter Rural Division of General Practice workshop (there are approximately 160 GPs in this Division). A total of 66 dietitians, nurses and physiotherapists (from the Hunter Area Health Service) attended the Allied Health Professionals' Workshop.

General practitioner referrals/medical clearance to Heartmoves

As Heartmoves programs are openly marketed, clients can enter 'off the street' as well as through a referral from a GP. The audit of Heartmoves records in the fitness centres showed that 26% (104/400) of the Heartmoves participants had a signed referral or a medical clearance. An examination of the dates on both the PEAfs and the medical referral/clearance

forms (for these 104 clients) indicated that the GP had been proactive (instigated the referral to Heartmoves) for 21% (22/104) of these participants and reactive (signed the medical clearance brought to them by a patient) for 79% (82/104) of these participants. Additionally 41% of these 104 clients had had a requested progress report faxed back to the referring GP from the fitness centre.

In the survey of Heartmoves participants (n=400):

- Twenty-four percent reported that they were referred to the classes by a health professional, and of these:
 - 42% by a GP
 - 13% by a specialist
 - 18% by a physiotherapist
 - 11% by a nurse
 - 11% by a dietitian.
- Fourteen percent reported having participated in diabetes education in the preceding 12 months.
- Ten percent reported having participated in cardiac rehabilitation education in the preceding 12 months.

Participants were also asked questions about their perceptions of their GP's attitude towards physical activity and to Heartmoves specifically. Fifty-one percent of participants reported that their GP had raised the topic of physical activity in the last

12 months. Seventy-four percent reported that they informed their GP about **Heartmoves** and of these, 78% reported their GP was supportive and encouraging of **Heartmoves**.

Media coverage

In summary, local media monitoring over the nine months of the evaluation period recorded:

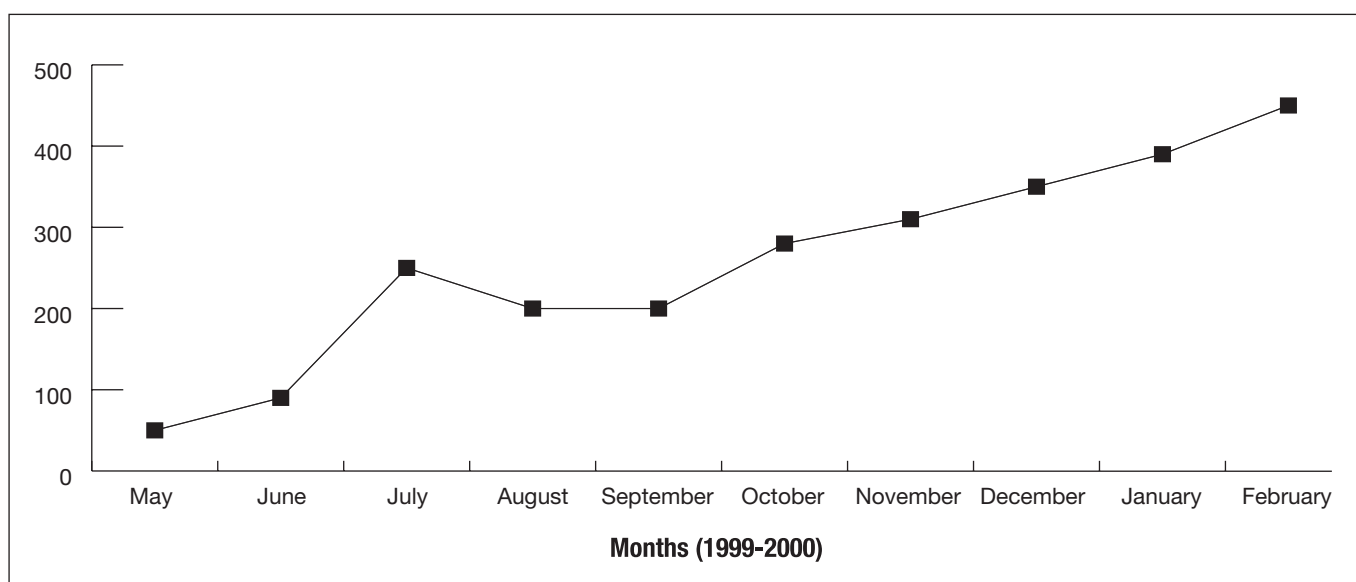
- three television media coverage items/interviews
- twelve newspaper articles in the general press
- three targeted print articles in specific newsletters (Hunter Health, Urban Division of GP, and fitnessnw)
- ten live **Heartmoves** demonstration/open days.

Retention

Heartmoves participants

A total of 400 people enrolled in the **Heartmoves** program during the nine months after the public launch. Of these, (320/400) 80% had attended their **Heartmoves** program during the two weeks preceding the audit (conducted six months after the launch) and were therefore deemed to have been 'retained'. Figure 3.4 shows the steady increase in enrolments in the **Heartmoves** programs over the nine months, and the dip in enrolments over the winter months of July and August.

Figure 3.4 Number of enrolments in **Heartmoves** classes



Insufficient physical activity is the most prevalent population risk factor for CVD. There is also strong evidence for the benefits of regular exercise for those with existing chronic illnesses such as diabetes, heart disease, asthma, arthritis, depression, and as a preventive strategy for falls. However, there are few available community-based exercise programs that are tailored to the needs of these special populations, many of whom are older and deconditioned. Fitness centres are an appropriate setting to provide exercise programs for special populations including those who are older and those with stable chronic illness (provided there is appropriate staff training and adherence to risk assessment, risk management, medical clearance, lower intensity and safety protocols). However, there is still considerable opportunity to bridge the gap between fitness centres and the health sector.

Heartmoves was an innovative intervention that incorporated a number of strategies designed to promote integration and overcome barriers between the health sector and the fitness industry. Due to the already extensive literature concerning the benefits of physical activity participation for the individual, the current study did not aim to measure the individual impact of the **Heartmoves** program. Rather, the project was designed to evaluate the ability of **Heartmoves** to provide a sustainable and safe exercise program that met the needs of clients and the fitness industry, and was an attractive referral option for health professionals.

Heartmoves attracted the target group it was designed for, older Australians, those with risk factors for CVD, and/or those who have stable heart disease or diabetes. Ten percent of **Heartmoves** participants reported attending a cardiac rehabilitation program in the preceding year, and an additional 14% reported attending a diabetes education program (indicating that 24% of the participants had existing and recent cardiovascular disease or diabetes).

The **Heartmoves** intervention targeted participants who were significantly different from the rest of the population of fitness centre clients. Compared to fitness centre clients, **Heartmoves** participants were significantly more likely to be over 60 years, retired, not employed, and be obese or overweight. **Heartmoves** appears to be successful in attracting a new market to fitness centres and the intervention was shown to have changed the nature and type of programs offered in local fitness centres. There was a significant overall increase in the proportion of centres offering the lower intensity programs. There was also a significant increase in the level of risk management of clients in relation to emergency protocols for managing fainting spells and chest pains. This suggests that the introduction of **Heartmoves** contributed to a refocusing in local centres towards safety, health and older populations.

4.1 Quality, safety, acceptability, reach and retention

Quality assurance and safety were fundamental components of the **Heartmoves** program. The **Heartmoves** leader training manual received accreditation from fitnessnsw and content approval from the NHFA, which would suggest it is a credible resource acceptable to both the fitness industry and relevant health professionals. Further, the quality of the classes conducted by **Heartmoves** leaders were assessed to be of a high standard. The assessed quality of **Heartmoves** leaders improved during the intervention, which may have been due to the increasing experience of the leader and/or the feedback provided after the first quality assessment. Further, the majority of **Heartmoves** participants (93%) had completed a PEAR, which indicates adherence to a key safety requirement of **Heartmoves**.

Initial demand from fitness leaders for **Heartmoves** training was very encouraging, with one-third of workshops being held due to demand. Sixty-three percent of fitness leaders participating in the **Heartmoves** training program subsequently provided **Heartmoves** classes, with a further 34% intending to do so within 12 months. Reasons for trained **Heartmoves** leaders delaying or not conducting **Heartmoves** classes were not measured, however anecdotal reports from leaders suggest that this may be related to management decisions outside the control of individual leaders. To ensure that appropriate supportive structures are in place for trained **Heartmoves** leaders, future evaluations of the program could consider collecting information about 'non-active' **Heartmoves** leaders and management. Opportunities for further targeted and limited health sector support could be explored to ensure establishment of the programs.

Participants in the **Heartmoves** program appeared to be very satisfied with the **Heartmoves** leaders, with the proportion reporting satisfaction greater than 93% in regards to leader's understanding, helpfulness, safety and music. Further, the majority of participants (95%) also reported being satisfied with the price. These results suggest that the **Heartmoves** program is very acceptable to the target group. However, alternate questions in the survey may have elicited varied results, and non-participants were not surveyed.

Enrolments in the **Heartmoves** program generally increased steadily over the intervention, with a total of 400 people enrolling during the nine months. Of these, 80% were retained at the time of the audit (six months after the launch). This high retention rate is valuable in an industry where, according to verbal reports from fitnessnsw, the industry generally expects a 20-30% retention rate at one year, and the survey of general fitness centre clients at follow-up indicating a median time at the centre of less than six months.

Heartmoves also appeared to be acceptable to fitness centre managers. It was very encouraging that the proportion of managers perceiving a lack of trained staff as a barrier to developing programs for special populations, decreased from 84% to 48% during the intervention. This result is supported by the fact that 17/17 (100%) of the surveyed managers agreed that **Heartmoves** leaders were adequately trained.

The majority of managers perceived **Heartmoves** as having the potential to become a core program in the fitness industry (67%). Further, the majority (83%) perceived there was sufficient support to establish **Heartmoves** and few (16%) thought the liability risks were too great. Despite this apparent support, only 35% of managers perceived **Heartmoves** as a good investment for the fitness industry, yet 94% perceived that **Heartmoves** had the potential to grow. Future promotion of programs such as **Heartmoves** to the fitness industry may need to emphasise the financial viability and potential of programs for special populations, where increased volume and higher retention rates, combined with use of centres at non peak times may offset the lower per person margins. **Heartmoves** programs can be offered during 'down-times' in fitness centres (ie 10.00am-4.00pm), which enables an attractive pricing structure.

The **Heartmoves** program attracted a total of 137 health professionals to the workshops. The majority of GPs did provide a reactive referral when prompted by their patient's request, however, only a small proportion of **Heartmoves** participants were proactively referred to the program by a health professional. Difficulty in engaging GPs in physical activity promotion has been encountered in numerous other programs. Further strategies, aside from CME workshops and script pads, need to be evaluated in their ability to link GPs to the fitness industry, and physical activity promotion in general. Targeted resource development for GPs particularly in relation to risk management, eligibility criteria and incorporation into Enhanced Primary Care Planning could be considered to increase physical activity referrals to **Heartmoves**.

While there is still considerable opportunity to increase the proactive referral of participants to **Heartmoves**, the program was able to strengthen the communication between the health sector and fitness industry. Of the 80% who indicated any cardiovascular risk factors on the PEAf, and who were advised to seek a medical clearance to exercise, 35% visited their GP and received a written referral/medical clearance to **Heartmoves**.

The **Heartmoves** program was able to attract local media attention, with 15 newspaper and three television items. The most common source of finding out about the **Heartmoves** program reported by participants was through family and friends (37%), however a wide array of sources was reported. Six percent of those responding to one specific newspaper article by contacting a telephone line went on to attend a **Heartmoves** programs. It is therefore difficult to establish the most effective means of promotion for **Heartmoves** in the community. However, a multi-component strategy ensuring wide coverage is probably the most appropriate.

4.2 CVD risk factors among fitness centre clients

The second objective of the **Heartmoves** project was to determine the intervention's effectiveness in increasing the proportion of fitness centre clients with CVD risk factors by 5%. The results of the fitness centre clients' survey indicate that the characteristics and cardiovascular profile of fitness centre participants at follow-up were not significantly different from baseline.

These results, however, need to be considered in light of potential methodological limitations. Firstly, the time period of data collection from the launch of the **Heartmoves** intervention to the follow-up measures (six months) may have been insufficient to enable sufficient growth of **Heartmoves** throughout the industry. Secondly, the design strategy of randomly selecting one day of the week for surveying participants in each fitness centre may have been too insensitive. As only 3% (n=49) of the fitness centre clients in the follow-up sample reported that they had participated in a **Heartmoves** class, the 'random one day/week' nature of the data collection protocol may not have corresponded with the days on which **Heartmoves** programs were being conducted in the fitness centres.

However, the results could also be interpreted to suggest that few **Heartmoves** participants attended the fitness centre unless it was for the specific purpose of attending a **Heartmoves** class, and that **Heartmoves**

classes were not available on every day of the week. Varied strategies (including increased low intensity program choices) may be required to encourage special populations, such as those with CVD risk factors, to participate in wider fitness centre activities.

4.3 Low to moderate intensity exercise classes offered by fitness centres

The third objective of **Heartmoves** was to determine the intervention's effectiveness in increasing the proportion of low to moderate intensity exercise classes offered by fitness centres in the Hunter region from baseline to follow-up. After the **Heartmoves** intervention, a significantly higher proportion of fitness centres offered lower intensity programs. It should be noted that 64% of centres offering **Heartmoves** classes is a considerable achievement considering the competition from the Active Over 50's program. The Active Over 50's program may have been perceived from an industry perspective as easier to implement due to less extensive training requirements and free training courses for leaders, fewer requirements for record-keeping, and quality-assurance.

The number of individual **Heartmoves** classes offered increased during the intervention period, whereas the number of participating Centres peaked during the middle of the intervention and then dropped slightly. This drop (two centres) however, resulted from the Quality Assurance Audit that revealed that the **Heartmoves** brand had been applied to existing 'gentle' exercise classes, without appropriate change to the structure and intensity levels of the programs. The number of enrolments in the **Heartmoves** program also increased during the intervention. This would suggest that strategies to promote the **Heartmoves** program should aim to increase not only the number of participating centres, but also the number of individual classes offered by each centre.

Concurrent study 1 – Cardiac rehabilitation cohort

5

During the **Heartmoves** intervention, a concurrent study of the physical activity behaviour of patients in Hunter cardiac rehabilitation programs was conducted. Phase II outpatient cardiac rehabilitation (OCR) usually occurs within four weeks of discharge from hospital after a cardiac event. It is a five to six week program usually two sessions per week, which includes: supervised exercise program, additional education about lifestyle change and counselling components. The study of these phase II patients provided data about the physical activity participation before and after hospitalisation, and specifically, participation in the **Heartmoves** program.

5.1 Objectives

The objectives of the concurrent study of phase II cardiac rehabilitation patients were to determine:

- 1 The retrospectively self-reported level of physical activity participation prior to hospitalisation.
- 2 Changes in the level, and type of, physical activity participation (including **Heartmoves**) at three and nine months post-discharge.

5.2 Methods

Study design

The study involved a retrospective self-report survey, and two telephone interviews of cardiac rehabilitation patients to determine changes in physical activity participation.

Data collection

Patients from all cardiac rehabilitation programs in the Hunter (John Hunter Hospital and Lake Macquarie Private Hospital) were recruited to the study over a nine month period from March 1998 to January 1999. Recruitment occurred during the second week of the patient's program.

Lists of class participants were provided by cardiac rehabilitation staff. Packs containing an information letter, a de-identified consent form with a survey and an envelope were then forwarded

to cardiac rehabilitation staff for distribution. Cardiac rehabilitation staff were responsible for giving a brief description of the research and ensuring that each patient in the class received their envelope containing the study pack. This strategy ensured that all patients in the rehabilitation program had an opportunity to participate in the study.

Consenting patients returned their completed surveys to a labelled box in the room where the rehabilitation program was conducted with patients indicating a difficulty with survey completion being offered a telephone interview. Patients were informed in the letter that in addition to the survey, participation involved two telephone interviews in three and nine months time.

Survey

The questionnaire in the survey of cardiac rehabilitation patients asked the same core questions as the fitness centre clients' survey, except that self reported participation in physical activity was asked retrospectively for an average week prior to hospitalisation. Due to all the patients being in a rehabilitation program where they were engaged in supervised exercise twice a week, it was considered inappropriate to ask about the last week's participation in physical activity. Patients were also asked about their perceived interest and barriers to participating in ongoing post-rehabilitation community based exercise programs.

During the telephone interview conducted three months after the initial survey (prior to the launch of **Heartmoves**) the participants were asked about:

- participation in physical activity in the last week
- knowledge of the new moderate physical activity message
- current smoking status
- whether they had visited their GP since discharge
- health professional advice relating to secondary prevention of CVD
- perceived barriers to ongoing participation in physical activity.

During the telephone interview conducted nine months after the initial survey (and after the launch of **Heartmoves**) participants were asked the same questions as in the previous interview with additional questions about knowledge, attitudes and participation in **Heartmoves**. Participants were also asked about any re-admissions to hospital for further heart problems.

Analysis

Frequencies were calculated for descriptive data using Stata statistical package – Version 5. Refer to Appendix E for calculation of BMI and ‘adequate physical activity’.

5.3 Results

Response rate and loss to follow-up

Of the 446 patients attending OCR during the period, 69% were deemed eligible (ie mentally, physically and emotionally capable of providing informed consent) for the study by usual care cardiac rehabilitation staff. Of these eligible patients participating in the second week of a cardiac rehabilitation program, 77% consented to participate in the study. At the three month telephone follow-up 199 were contacted and at nine months follow-up 191 were contacted. Overall loss to follow-up at nine months was 19%.

Sociodemographic characteristics

The characteristics of the cardiac rehabilitation patients surveyed are described in Table 5.1.

Self reported cardiovascular risk profile of cardiac rehabilitation patients

The results of the initial retrospective survey show high rates of cardiovascular disease risk factors prior to the patient’s hospitalisation. In the subsequent telephone interviews, only modifiable risk factors were surveyed. Although cholesterol and blood pressure are modifiable, the question was ‘had they ever been told by a health professional that they had high cholesterol or blood pressure’; not what the actual level was.

Table 5.2 shows a reduction in the proportion of participants reporting the cardiovascular risk factors of obesity/overweight and smoking from pre-hospitalisation to three months follow-up. The proportion reporting the risk factor of obesity/overweight was further reduced at nine months follow-up. However, there was no further reduction in the proportion reporting smoking at the nine month follow-up. The proportion of patients reporting insufficient physical activity increased from pre-hospitalisation to follow-up.

Table 5.1 Sociodemographic characteristics of cardiac rehabilitation patients (n=237)

(n=237)	number	%
Average age	63.6 years (mean)	
Female	52	(22%)
Married	190	(80%)
Education – Secondary school, HSC, TAFE, CAE	70	(32%)
Employment – Full time, part time or self employed	59	(26%)
Nationality – Australian	172	(85%)

Table 5.2 Self reported cardiovascular risk profile of cardiac rehabilitation patients

CVD risk factor	Pre hospitalisation baseline % (n=237)	Three months follow-up % (n=199)	Nine months follow-up % (n=191)
BMI \geq 25 (obese/overweight)	79	71	69
Smoking	20	10	10
Insufficient physical activity (< 800 Kcals/week)	11	20	17
Blood pressure	54	Not asked	Not asked
– medication for BP	50		
Angina	36	Not asked	Not asked
Heart attack	19	Not asked	Not asked
Stroke	12	Not asked	Not asked
High cholesterol	52	Not asked	Not asked
– medication for cholesterol	36		
High triglycerides	24	Not asked	Not asked
Diabetes	20	Not asked	Not asked
– medication for diabetes	15		
Peripheral vascular disease	8	Not asked	Not asked
Family history	54	Not asked	Not asked

Continuation of exercise after rehabilitation

The majority of cardiac rehabilitation patients (78%) indicated being interested or very interested in joining a program such as **Heartmoves** in the initial survey, while 63% reported being interested in joining a walking group.

Heartmoves attendance and awareness

The **Heartmoves** program was launched to the public after the three months follow-up telephone interview of the cardiac rehabilitation patients. During the nine month interview, 40% of participants reported awareness of **Heartmoves**. Of these, 29% were advised by a health professional and 15% found out from a newspaper.

In terms of attendance at a **Heartmoves** class, at nine months post cardiac rehabilitation 7% of patients reported having attended a class. Of those who had not attended, 39% reported that they intended to go to **Heartmoves** in the next six months. In terms of strategies that might encourage attendance at a fitness centre based exercise program:

- Sixty-four percent thought that a prescription from a cardiologist, GP or Rehabilitation Coordinator outlining the type and amount of exercise would be useful.
- Sixty-four percent thought that a Hunter telephone number providing details of where they could go would be useful.
- Fifty-four percent thought that being able to continue with the same group of people as in the cardiac rehabilitation class would be useful.

Barriers to exercise participation post-rehabilitation

Table 5.3 shows that the barriers described as reasons for not continuing to participate in exercise after cardiac rehabilitation, changed from baseline to three and nine months. At baseline, patients were asked whether each of the reasons listed might be a problem for them to continue physical activity after their cardiac rehabilitation program. At three and nine months they were asked which reasons might be a problem for continuing with physical activity.

Table 5.3 Cardiac rehabilitation patients’ reasons for not exercising

Reasons for not exercising	Baseline %	three months %	nine months %
Cost of attending fitness centre classes	41	20	15
Physically limiting condition (eg back injury)	37	36	38
Don’t know where to find an exercise program	31	13	4
Did not think exercise is important for recovery	13	3	0
Unable to take time off work	12	5	7
Transport difficulties	10	6	3
Not being well enough to exercise	11	16	11
Thought exercise might be harmful	4	1	3
Advised by medical person not to exercise	3	0	0

Patients’ report of receiving secondary prevention

The proportions of patients reporting secondary prevention care delivered by GPs (95% reported visiting their GP by the three month interview), cardiac rehabilitation nurses and cardiologists at three and nine months after cardiac rehabilitation are shown in Figures 5.1, 5.2 and 5.3 respectively. The figures also describe the advice reported being given by the GP, cardiac rehabilitation nurse or cardiologist.

Figure 5.1 Patient reported advice from general practitioner for secondary prevention

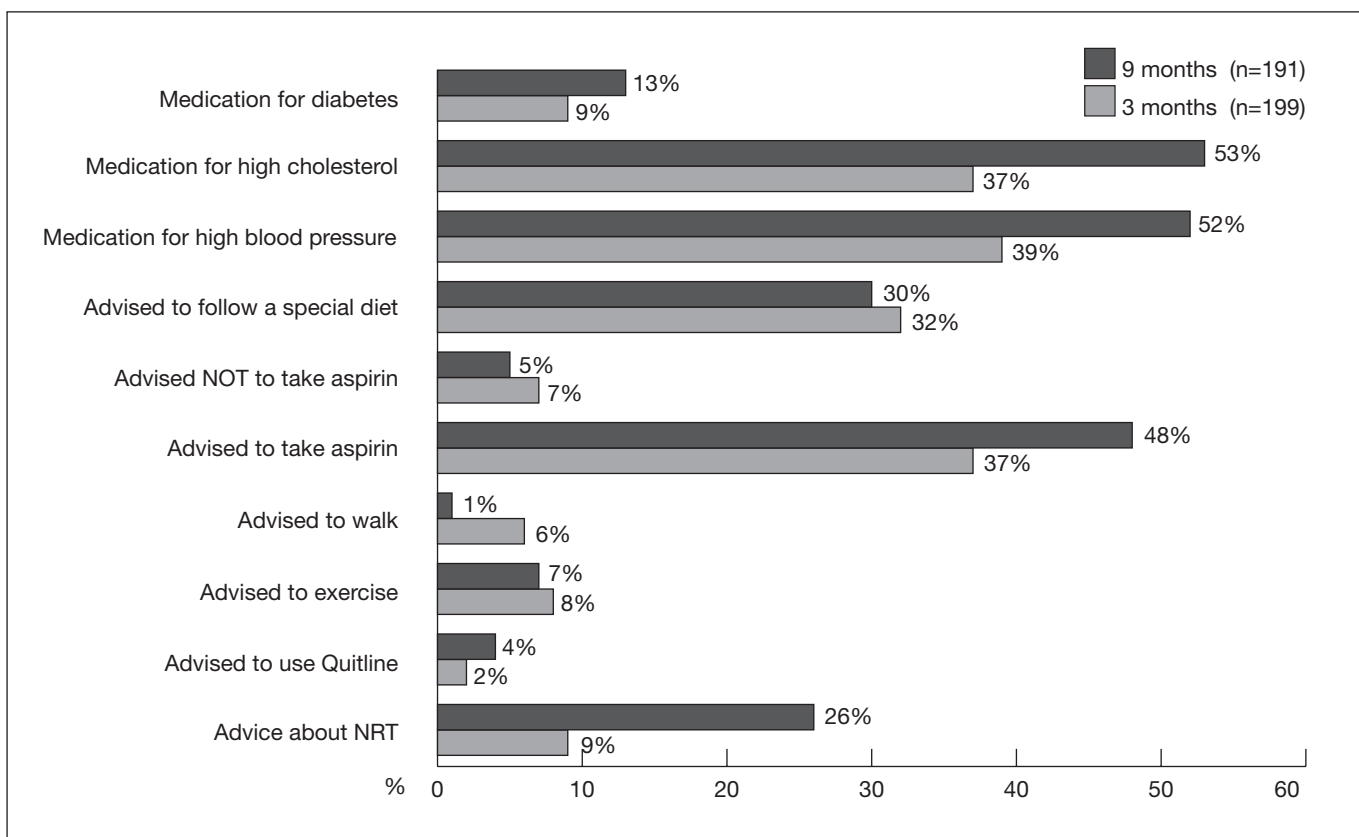


Figure 5.2 Patient reported advice from cardiac rehabilitation nurse for secondary prevention

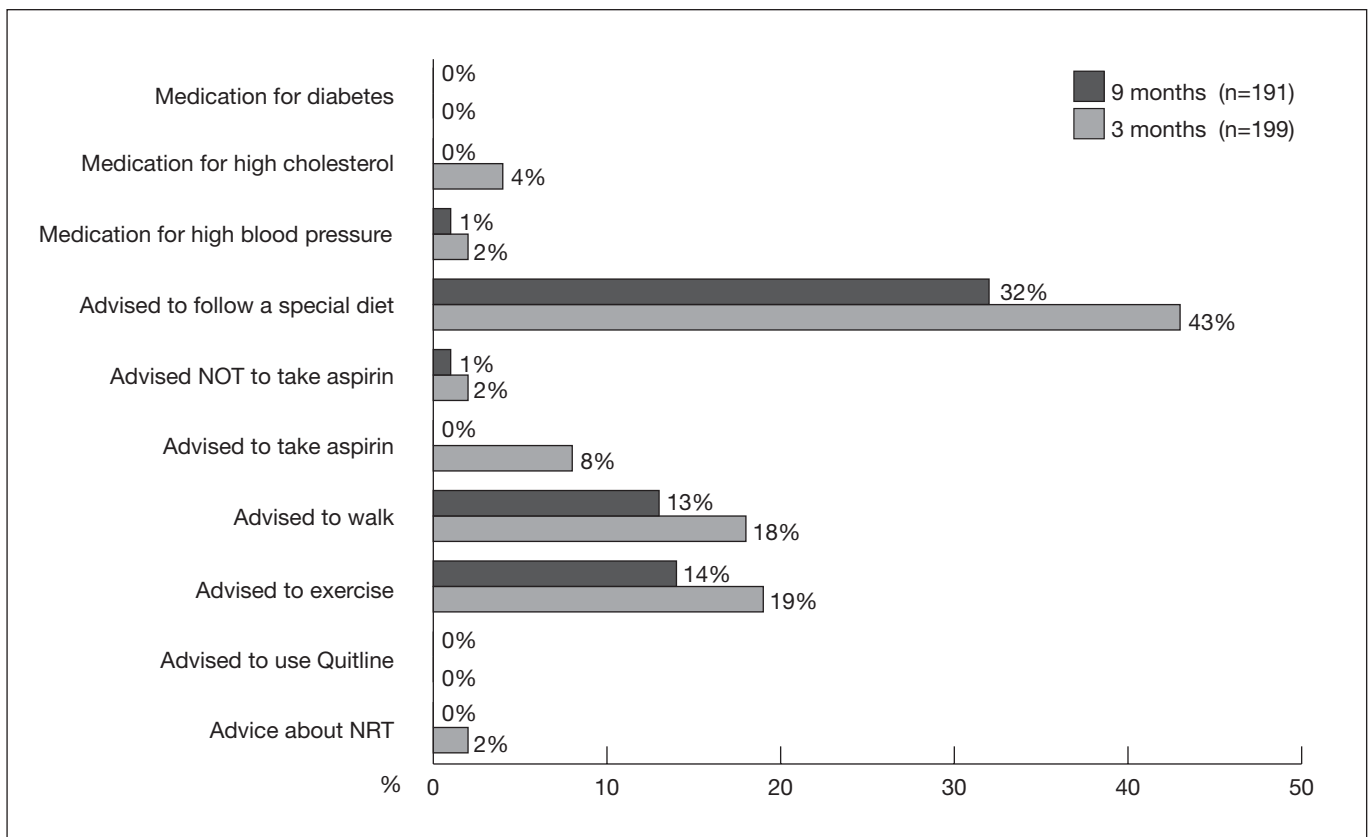
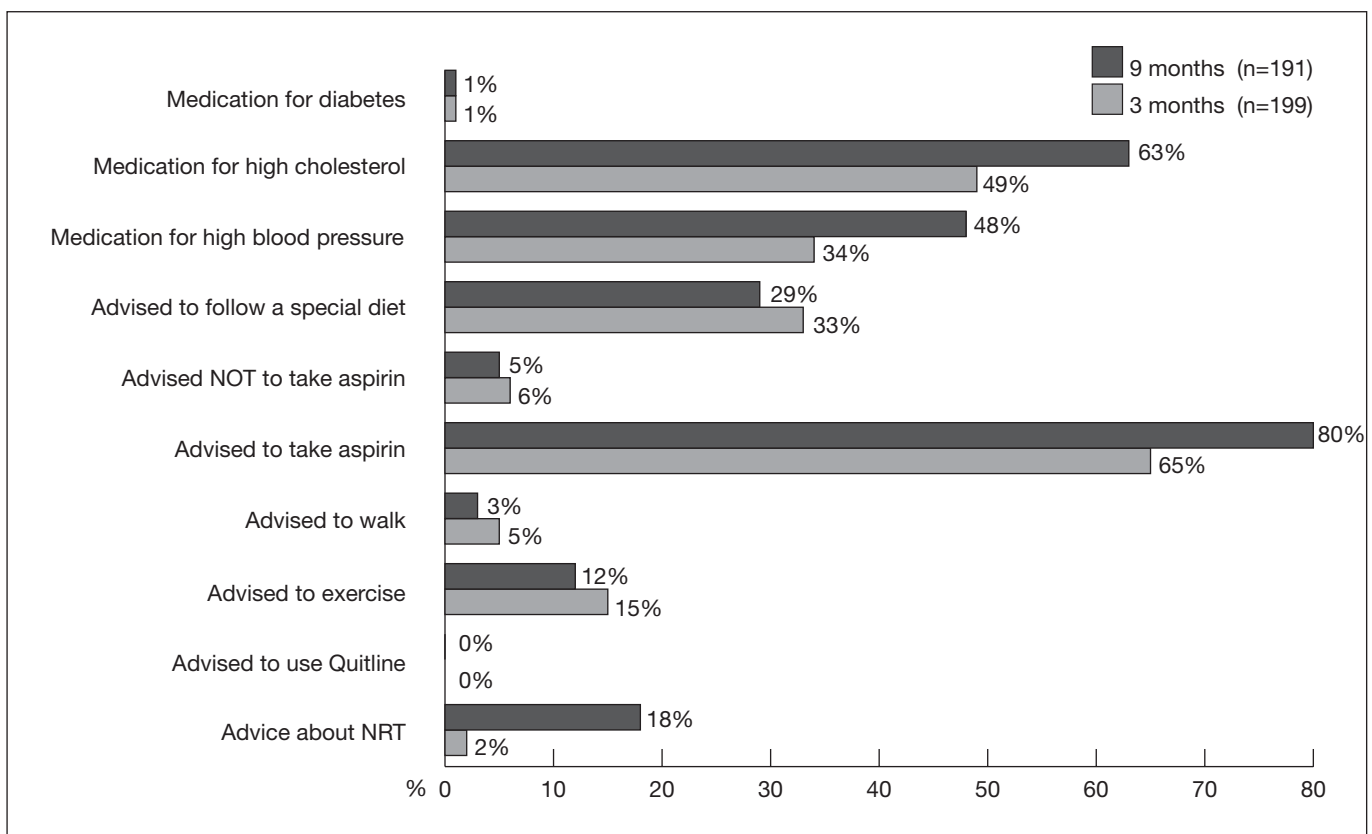


Figure 5.3 Patient reported advice from cardiologist for secondary prevention



Cardiologists and GPs gave more medication advice than lifestyle advice to the cardiac rehabilitation patients with less than 20% of patients receiving advice from their GP or cardiologist about exercise or walking. This is of concern given that 80% of these patients were overweight/obese, half had elevated BP and cholesterol and 20% were diabetic, all conditions for which exercise therapy is strongly recommended. Patients reported more advice from GPs in relation to nicotine replacement therapy, blood pressure and diabetes; more advice from cardiologists in relation to cholesterol and aspirin; and more advice from cardiac rehabilitation nurses on lifestyle factors such as diet and exercise.

5.4 Discussion

As was expected, many of the surveyed patients reported cardiovascular risk factors. However, only 11% reported being inadequately active prior to hospitalisation. Unlike the other CVD risk factors of smoking and obesity/overweight, which decreased at the three and nine month follow-ups, inadequate physical activity as a risk factor, increased at three months and at nine months. These rates are considerably lower than the state average for inadequate levels of physical activity (approximately 50%).

This lower reported rate of physical inactivity among cardiac patients may be due to misreporting, or due to problems with the measurement instrument among this population. For example, it is possible that the high rates of reported physical activity participation may be an artefact of the measurement instrument and the way the questions are interpreted by this specific population. The description of 'vigorous' activity on the standard physical activity questionnaire – 'any activity which makes you breathe harder or puff and pant' may not be appropriate for individuals with recent heart disease, as the symptoms of CVD namely, shortness of breath, sweating, puffing on any exertion

may be confounding the measurement of physical activity among this population (where any activity may cause such a response, and therefore have been classified as vigorous or indeed moderate). Further research is needed to clarify the reliability of physical activity measures for this population.

However, it is evident that there is a need for physical activity programs in this population to encourage continued involvement post-rehabilitation. The majority of patients (78%) were interested in **Heartmoves** or joining a walking group (63%). Despite this initial interest however, few (7%) actually participated in **Heartmoves**. The importance of the involvement of a health professional was emphasised with 64% reporting that a prescription would encourage them to attend a fitness centre based exercise program, yet only 8%, 15% and 19% were advised to exercise by cardiologist, GP and Cardiac Rehabilitation Coordinator respectively.

It is encouraging that the perceived barriers to exercise participation decreased over the time of the study. The most consistent barrier was a physically limiting condition (eg back injury). The overcoming of such a barrier would require even greater involvement from health professionals in the referral of patients to appropriate exercise programs.

The results of this study demonstrate and reinforce the important role of health professionals in encouraging patients to exercise. While there appears to be substantial interest in exercise participation by the patients, only small proportions of patients report being encouraged by health professionals to exercise. Patients themselves have identified that referrals from health professionals would encourage them to participate, and such referrals may assist in overcoming the perceived barriers to participation held by this special population group. It will be important to identify and address the barriers to exercise prescription among the cardio vascular disease health professionals.

Walking is an excellent moderate physical activity, can be undertaken by most people and is inexpensive. It therefore seems appropriate for organisations to support walking programs that aim to promote increased physical activity through supported structured walking programs (usually providing a leader, a regular route, and public liability cover for the leader).

During the **Heartmoves** intervention, a number of walking groups were operating in the Hunter. These included: the Department of Sport and Recreation (DSR) *Walking for Pleasure* program, the NHF *Just Walk It* program, and the *AMP Mall Walking* program. A study of these walking groups by the NHF was concurrently conducted during the evaluation of the **Heartmoves** program.

6.1 Objectives

The objectives of the study were to describe:

- the sociodemographic characteristics, self reported health status, physical activity profile, CVD risk status, and participation frequency of walking program participants in the Hunter
- the number and type of community based walking programs being offered in the Hunter
- changes in the proportion of individuals with a CVD profile participating in walking programs from baseline to follow-up.

6.2 Methods

Study design

At baseline, a self-complete survey of walking group participants was conducted and the follow-up survey one year later. Walking group leaders were also interviewed about the number of members in their program.

Data collection

Only participants from the *Walking for Pleasure* program and the *Mall Walking* program were recruited in the baseline survey, as there were no *Just Walk It* groups operating in the Hunter at that time.

At baseline, *Walking for Pleasure* groups were identified from a Department of Sport and Recreation database and telephone contact made with leaders to verify the group was still operational. The information, consent letter and questionnaire were mailed to all registered participants by the Department of Sport and Recreation on behalf of the NHF for privacy reasons. To recruit survey participants from the *Mall Walking* group, a project officer visited the group on four consecutive days.

Walking group leaders were asked to complete an information sheet regarding the number of regular walkers in the program. To calculate the total number of walkers in the group, the denominator was calculated as the total number of walkers registered with the program (each walker completed a membership card).

To encourage participation in the survey, walkers were offered entry into a prize draw for a NHFA pack containing a cookbook, t-shirt, cap, and health booklets.

In the follow-up survey, questionnaires were sent to all walkers registered with the *Just Walk It* program in addition to *Walking For Pleasure* program participants, and four visits were again made to the *Mall Walking* group.

Measurement

Questionnaire

The self-complete questionnaire was essentially the same as the fitness centre participants' survey except questions were included about the length of time as a walking program member and the mechanism for hearing about the program. The follow-up survey conducted 12 months later was identical.

Analysis

Frequencies were calculated for descriptive data using Stata statistical package – Version 5. Differences between baseline and follow-up proportions of participants with a CVD risk profile in the walking groups were reported. Refer to Appendix E for calculations of BMI and ‘adequate physical activity’.

6.3 Results

Response rate

Eleven *Walking for Pleasure* groups were identified by DSR and one *Mall Walking* group was identified by AMP. Leaders were contacted to verify operational status and to provide membership numbers, yielding only eight *Walking for Pleasure* groups with an estimated 301 participants, and one *Mall Walking* group with an estimated 100 members at baseline.

A total of 401 questionnaires were distributed and yielded a response rate of 36%. At follow-up, 12 months later, the *Just Walk It* program had commenced, with a membership of 80; the *Mall Walking* still operated with a reported membership of 60; three *Walking for Pleasure* groups had ceased operating and one new one had started, with a total membership of 126 walkers. A total of 266 questionnaires were sent to leaders at follow-up, and 38% were returned. The breakdown of walking groups’ response rates is reported in Table 6.1.

Table 6.1 Walking group survey response rates

	Baseline (n=144) response rate	Follow up (n=102) response rate
Walking for Pleasure Coalfields Club	17.0%	23%
Walking for Pleasure East Lakes Club	28.0%	50%
Walking for Pleasure Hamilton Happy Walkers	16.0%	20%
Walking for Pleasure Lake Munmorah	41.0%	Ceased
Walking for Pleasure San Remo	18.0%	Ceased
Walking for Pleasure Newcastle Happy Wanderers	50.0%	72%
Walking for Pleasure Port Stephens Club	77.5%	63%
Walking for Pleasure Berkeley Vale	36%	Ceased
Mall Walking	37%	38%
Walking for Pleasure Warner’s Bay	N/A	58%
Just Walk It	N/A	21%
Total	36%	38%

Sociodemographic characteristics of walking group sample

Among the sample of walkers who responded to the survey, 25% of the sample were aged over 60 years; 69% were retired at baseline and 63% retired at follow up.

Table 6.2 Sociodemographic characteristics of the walking sample

	Baseline (n=144)		Follow up (n=102)	
	Number	%	Number	%
Average age	62.8 years (mean)		64 years (mean)	
Female	107	75%	101	69%
Married	89	62%	72	71%
Education – Secondary school, HSC, TAFE, CAE	38	27%	30	33%
Employment – Full time, part time or self employed	14	10%	12	12%
Nationality – Australian	90	86%	65	85%

Self reported cardiovascular risk profile of walking sample

Walkers were asked to report on their cardiovascular risks, which are reported in Table 6.3.

Table 6.3 Self reported cardiovascular risk profile of walking sample

CVD Risk factor	Baseline (n=144)	Follow up (n=102)
BMI ≥ 25 (obese/overweight)	54	56
Smoking	1	5
Insufficient physical activity (< 800 Kcals/week)	1	4
Blood pressure	31	30
– medication for BP	27	30
Angina	11	12
Heart attack	8	9
Stroke	5	1
High cholesterol	40	22
– medication for cholesterol	39	22
High triglycerides	15	7
Diabetes	6	4
– medication for diabetes	4	3
Peripheral vascular disease	8	3

Overall numbers participating in walking groups reduced in the year of the study, and overall proportions reporting each of the risk factors did not vary greatly over the 12 months.

Walking group characteristics

At baseline, 87% reported being members of their group for more than one year, whereas at follow-up only 61% reported being members for more than one year. At baseline, 63% reported hearing about their group from a friend, and 2% reported being referred by their doctor.

6.4 Discussion

This survey of walking group participants from the *Walking for Pleasure*, *Just Walk It*, and *AMP Mall Walking* programs indicated a decrease in participation over the study period. The initial number participating in these programs (401) decreased by 35% to 266 at follow-up.

Based on their sociodemographic characteristics, walkers were similar to the **Heartmoves** participants. There were two cardiovascular risk factors for which there was comparable data (BMI and physical inactivity), however, walkers were less likely to be overweight or obese (56% compared to 90%) and less likely to be inadequately active (4% compared to 7%) than **Heartmoves** participants.

Few (2%) walking program participants reported being referred by their doctor. It is evident that there is ample opportunity to increase the involvement of health professionals in the provision of exercise advice and referral.

While walking programs are inexpensive, and suitable to many older adults, there is substantial organisational support required in recruiting participants and sustaining the walking programs. Further, walking programs require the continued involvement of community volunteers (as program leaders). Health professional referral and support of walking programs may facilitate increased participation in such programs, and thereby sustain organisational commitment to the coordination and promotion of walking programs. However, it is recommended that managing organisations monitor the sustainability and retention rates of their walking programs.

7.1 Summary

The benefits of physical activity for health and well-being are well recognised, and there are clear recommendations for moderate activity from numerous health organisations. Reducing hypertension, hyperlipidaemia and obesity/overweight and preventing falls are just some of the health benefits of physical activity, which are particularly relevant to special population groups, such as those with CVD or its associated risk factors.

These special population groups may be apprehensive about exercise participation, and especially within the fitness industry. However, the fitness industry is an appropriate setting for the provision of programs for special population groups, due to fitness centres' accessibility, utilities, and fitness leader training and accreditation and the professional indemnity and public liability coverage afforded through registration. There is a recognised gap however, between the health sector and fitness industry as well as poor rates of exercise referral by health professionals and a dearth of safe low intensity programs within the fitness industry suitable for older people and safe for those with stable chronic illness.

This project developed and evaluated a community intervention incorporating a new exercise program, **Heartmoves**, which was designed to be open to all and safe for those with stable CVD or diabetes. The intervention also incorporated a number of supporting strategies designed to promote integration and overcome barriers between the health sector and the exercise industry. The project evaluated the **Heartmoves** intervention in relation to:

- sustainability within the fitness industry
- safety of delivery
- acceptability to clients (retention), the fitness industry (reach) and the health sector (referrals)
- its ability to increase the proportion of clients with risk factors for CVD exercising within the fitness industry.

In summary the outcomes were positive, with the training of **Heartmoves** fitness leaders being endorsed and accredited, and attracting significant interest among fitness leaders. **Heartmoves** programs attracted the target group they were designed for, older Australians and those who have or are at risk of developing heart disease or diabetes. The programs showed excellent reach across the fitness industry, steady growth in numbers, high retention rates, acceptable cost structure, public acceptability and use of centres in the down-time suggesting a sustainable product with a strong potential for the future. This is reflected in the attitudes of the fitness managers. The introduction of **Heartmoves** into the fitness industry produced positive change in the industry increasing routine health screening prior to exercising, record keeping, progress reporting back to referring GPs and use of safety protocols. The Quality Assurance Audit demonstrated that fitness leaders were able to deliver safe programs which adhered to their training guidelines, provided a professional environment for individuals to exercise at a low to moderate intensity in relatively small classes in over 24 locations (18 within fitness centres and six in community locations) within one Area Health Service. The adherence by leaders to the low to moderate intensity of the **Heartmoves** programs was the most crucial aspect for ensuring a safe, non-medically supervised community based program. This component delivers confidence to referring medical practitioners and allied health professionals particularly in relation to patients with CVD and diabetes. A potential limitation of the study could be that the Quality Assurance Audits were conducted by the cardiac rehabilitation coordinator from the training team. As such, there is a potential for either over or under reporting on adherence to the guidelines. Future Quality Assurance Audits on the programs should be conducted by an independent assessor.

The evaluation of the **Heartmoves** intervention did not find any significant increase in the proportion of clients with CVD exercising in the fitness industry in the Hunter. This may however have been affected by a study limitation, namely the random selection of the data collection day for the follow-up client survey in each fitness centre. As **Heartmoves** classes are not offered on all days of the week in each centre, the methodology used resulted in only 3% of the **Heartmoves** population being recruited within the general fitness centre survey population. Secondly, the method of recruitment for the **Heartmoves** participant survey (using leaders to distribute the surveys) was less than optimum for consent rates.

The results of this study suggest that **Heartmoves** has the potential to become a core program within the fitness industry and provide a valuable community exercise resource for the health sector (with the benefits of industry backing, professional indemnity and public liability coverage). The high retention rates are also valued by health professional organisations campaigning to encourage people to maintain their physical activity in the long term. **Heartmoves** and the supporting strategies, were able to strengthen the communication between the health sector and fitness industry.

The study has highlighted a number of issues in the promotion and provision of physical activity opportunities for older adults, and particularly those that attempt to integrate clients with stable chronic illnesses such as CVD or diabetes into community-based group exercise programs.

Firstly, there is still ample opportunity to increase the involvement of health professionals in referring and encouraging participation in physical activity by special population groups. While **Heartmoves** did

facilitate communication between participants and their health professional about the exercise program, and GPs were engaged in medical clearance/referral for 26% of **Heartmoves** participants surveyed, the vast majority of these were reactive medical clearance requests, rather than pro-active referrals. Similar to the walking programs, **Heartmoves** was unable to stimulate pro-active referral. The cardiac cohort study demonstrated that even general advice to exercise from health professionals is not common.

Secondly, there is significant interest in physical activity programs such as **Heartmoves** amongst patients attending cardiac rehabilitation. However, few cardiac rehabilitation patients actually participated in either **Heartmoves** or one of the concurrent walking programs. Clearly, there is need to build on the transition to **Heartmoves** and capitalise upon the intention to exercise in **Heartmoves** expressed by this special population group and overcome the barriers to actually beginning **Heartmoves**.

There are numerous opportunities to further promote and increase participation in physical activity programs such as **Heartmoves**. Strategies, other than workshops and script pads, to engage health professionals in physical activity promotion are required (including specific **Heartmoves** resources for determining eligibility of clients and for referring patients proactively). There is opportunity now for significant support from health groups involved in the delivery of cardiac rehabilitation, diabetes education, chronic disease management, from Divisions of GP as well as from general practitioners and practice nurses to utilise the existing resource of **Heartmoves**. Further, the value of social marketing should not be overlooked, as friends or family and the media inform many participants about physical activity programs.

7.2 Recommendations

From the **Heartmoves** project and concurrent studies, a number of recommendations to inform future physical activity projects targeting older adults, particularly those with CVD or its associated risk factors, can be made:

- 1 Fitness centres are an appropriate setting for the provision of specialist physical activity programs, however, marketing strategies should engage the fitness centre managers and focus on financial viability and potential of such programs (retention rates, size of the target market).
- 2 Registered fitness leaders provided with additional specialised **Heartmoves** training can deliver safe, appropriate, community based exercise programs of high quality and adhere to the risk assessment and risk management guidelines appropriate for older clients, particularly those with CVD and diabetes.
- 3 Further investigation is required into strategies to engage health professionals in physical activity promotion, including referral to physical activity programs, beyond existing strategies such as workshops and script pads.
- 4 Social marketing strategies to promote specialist physical activity programs should be multi-component to ensure wide coverage.
- 5 Continued monitoring of programs, particularly monitoring referral sources and collecting data about participants' reasons for 'dropping-out' would provide valuable information to inform future programs.
- 6 **Heartmoves** has been shown to be a safe, viable, attractive, affordable, community based exercise option and a program to which health professionals can confidently refer older clients, particularly those with or at risk of CVD and diabetes.



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Appendix A

Management and Advisory Committees



Principal investigators

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Manager
Bob Carroll's Fitness Studio

Ms Donna Scates

Heartmoves Fitness Leader

Appendix B

Borg's Rate of Perceived Exertion (RPE) Scale



(10 point scale)		(15 point scale)	
0	Nothing at all	7	Very light
0.5	Very, very weak	8	Very light
1	Very weak	9	Light
2	Weak	10	Somewhat hard
3	Moderate	11	Moderate
4	Somewhat strong	12	Moderate
5	Strong	13	Hard
6	Strong	14	Hard
7	Very strong	15	Hard
8	Very strong	16	Hard
9	Very strong	17	Very hard
10	Very, very strong	18	Very hard
*	maximal	19	Maximal*
		20	“ “



Appendix C

Pre-exercise assessment form



PRE EXERCISE ASSESSMENT FORM

Exercise is beneficial for health. **Before** you start exercising please answer the questions this form. This information will help your instructor guide your activity to maximise benefit and minimise any risk.

General Personal Information

Name _____ Tel _____
 Address _____ Emergency Name _____
 _____ contact: Tel _____
 Postcode Sex: M / F Age yrs
 Employed? Yes / No _____ GP Name _____
 If yes, occupation? _____ contact: Tel _____

Membership details:	Yes	No	Insurance/Other cover:	Yes	No
Member	<input type="checkbox"/>	<input type="checkbox"/>	Private Health Insurance	<input type="checkbox"/>	<input type="checkbox"/>
Casual	<input type="checkbox"/>	<input type="checkbox"/>	DVA White Card	<input type="checkbox"/>	<input type="checkbox"/>
Pensioner	<input type="checkbox"/>	<input type="checkbox"/>	DVA Gold Card	<input type="checkbox"/>	<input type="checkbox"/>
Student	<input type="checkbox"/>	<input type="checkbox"/>	Other Cover (describe below)	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>			

Some current exercise habits that will help us tailor your program

Have you been exercising regularly in the last 6 months? **Yes** If yes, what type of exercise? _____
 No

How many times/week? _____ Times/week How long each time? _____ hrs _____ mins

How intensive is your current level of exercise for you (circle the number to reflect how hard you exercise)

0	1	2	3	4	5	6	7	8	9	10
As if sitting doing nothing	Very light work	Light work	Moderate work	Somewhat hard work	Hard work	Hard work	Very hard work	Very hard work	Very, very hard work	Could not possibly do any more

Please answer these questions as best you can – **tick yes or no to each one**
EVERYONE SHOULD COMPLETE PART A

Part A Have you ever had, do you have, or are you on medication for:	Yes	No
a) Any form of heart problems (eg heart attack, angina, palpitations or bypass, pacemaker heart valves, angioplasty)	<input type="checkbox"/>	<input type="checkbox"/>
b) Asthma, emphysema, bronchitis/other lung problems	<input type="checkbox"/>	<input type="checkbox"/>
c) Rheumatic Fever or Glandular Fever	<input type="checkbox"/>	<input type="checkbox"/>
d) Arthritis or major injuries in the: neck, back, ankles, knees	<input type="checkbox"/>	<input type="checkbox"/>
e) Severe vein disorders in the legs or feet (eg large varicose veins, ulcer)	<input type="checkbox"/>	<input type="checkbox"/>
f) Pains in the chest when (resting or on exertion)	<input type="checkbox"/>	<input type="checkbox"/>
g) Currently pregnant or up to 6 weeks after birthing	<input type="checkbox"/>	<input type="checkbox"/>
h) Stroke	<input type="checkbox"/>	<input type="checkbox"/>
i) Diabetes: with "hypos" more than twice a year	<input type="checkbox"/>	<input type="checkbox"/>
j) Epilepsy	<input type="checkbox"/>	<input type="checkbox"/>
k) Hernia	<input type="checkbox"/>	<input type="checkbox"/>
l) Liver/Kidney condition	<input type="checkbox"/>	<input type="checkbox"/>
m) Swollen feet/ ankles	<input type="checkbox"/>	<input type="checkbox"/>
n) Dizziness or fainting	<input type="checkbox"/>	<input type="checkbox"/>
o) Eating disorder	<input type="checkbox"/>	<input type="checkbox"/>

If you answered YES to any questions and want to exercise here you will need to take this form to your doctor for clearance to exercise. Your doctor may write an exercise prescription for you advising either no exercise, low intensity (light) exercise or moderate intensity exercise.

OR If you already have medical clearance to exercise:

Details of medical condition/s & medication/s:

 Sign here

 Today's Date

ONLY if you intend to do VIGOROUS activity like pump, high intensity circuits, newbody, step, hi lo, etc you should also answer part B

Part B Are any of the following true for you:

	Yes	No
a) you are male over 40 years of age or female over 50 years of age	<input type="checkbox"/>	<input type="checkbox"/>
b) you are a smoker	<input type="checkbox"/>	<input type="checkbox"/>
c) you are considerably overweight	<input type="checkbox"/>	<input type="checkbox"/>
d) you are <u>not</u> accustomed to moderate exercise, such as brisk walking, riding a bike, slow swimming, social tennis etc	<input type="checkbox"/>	<input type="checkbox"/>
e) you have been told by a health professional that you have high cholesterol	<input type="checkbox"/>	<input type="checkbox"/>
f) you have been told by a health professional that you have high blood pressure	<input type="checkbox"/>	<input type="checkbox"/>

If you answered YES to any questions in PART B and you want to do VIGOROUS exercise classes you will need to take this form to your doctor for clearance to exercise

OR If you already have medical clearance to exercise:

Details of medical condition/s & medication/s:

..... / /
Sign here Today's Date

EVERYONE should read the following STATEMENT carefully and sign below:

- *I have answered the questions to the best of my ability*
- *I understand that the leader cannot give me medical advice with regard to my medical fitness to exercise*
- *I will tell the leader immediately if my health status should change from above*
- *I will tell the leader & consult with my GP if I want to try and exercise at a different intensity from what I aim to do now*
- *I agree to follow the directions of the leader with respect to my prescribed exercise program*
- *I will work at my own pace, learn the proper technique for the exercises & tell the leader if I feel any symptoms*

Signed by client: Date:

Witnessed by qualified exercise provider: Date:

Where applicable, I authorise for feedback to be sent to my GP about my exercise program

Signed by client: Date:

Heartmoves locality guide brochure (front)



LOCALITY GUIDE

Accredited **Heartmoves** fitness leaders now offering classes and personal programs at the following locations

Look for a **Heartmoves** certificate of accreditation.
It is your guarantee of quality.

Heartmoves locality guide brochure (back)

<p>Newcastle Area</p> <p>Broadmeadow: • Laraine Dunn (Fitness Consultant) 4946 8578 or 017 980 130</p> <p>Lambton/New Lambton: • Wests Leagues Gym & Fitness Centre 4935 1281</p> <p>Merewether: • Isis Fitness 4963 6933 • Eleanor Smith (Health Consultant) 4943 1420 or 0412 560 428</p> <p>Newcastle: • Howzat Sports & Fitness Club 4926 4488</p>	<p>Lake Macquarie Area</p> <p>Cardiff: • GEM Fitness 4956 5345</p> <p>Carey Bay • (Toronto YMCA) Kathryn Gilbert 4959 4444 • Eleanor Smith (Health Consultant) 4947 2781 or 0412 560 428</p> <p>Elernmore Vale: • Viking Aquatic & Fitness Centre 4951 3280</p> <p>Holmesville: • GEM Fitness 4956 5345</p> <p>Rathmines: • GEM Fitness 4956 5345</p> <p>South Lakes: (Swansea, Belmont, Caves Beach, Marks Point & Gwandalan) • Donna Scates 0418 266 358</p>
<p>Mid-Upper Hunter Area</p> <p>Cessnock: • Total Fitness 4990 4066</p> <p>Maitland: • Greenhills Sport & Leisure 4933 4733 • Body & Soul Healthworks 4932 5655</p> <p>Nelson Bay • Greenhills Sport & Leisure 4933 4733</p> <p>Raymond Terrace: • GEM Fitness 4956 5345</p> <p>Singleton: • Singleton Gym & Swim 6572 1359</p>	<p>Toronto: • GEM Fitness 4956 5345</p> <p>Warners Bay: • Genetics Fitness Club 4956 6557</p> <p>Windale: • Laraine Dunn (Fitness Consultant) 4946 8578 or 017 980 130</p>

Heartmoves brochure (front)

If you want to start exercising gently at your own pace and would like:

- ☛ To meet people
- ☛ Be more physically active
- ☛ Become healthier

Or if you are concerned about exercising or:

- ☛ Have high blood pressure
- ☛ Have high cholesterol
- ☛ Have diabetes
- ☛ Have a heart condition
- ☛ Have had heart surgery
- ☛ Are overweight
- ☛ Want to continue exercising after your rehabilitation


HEARTMOVES

is part of a Hunter Physical activity demonstration project funded by NSW Health Department




Fitness leaders are trained by staff from the National Heart Foundation the Department of Cardiovascular Medicine (John Hunter Hospital) and Diabetes Education Centre (Royal Newcastle Hospital).

Then HEARTMOVES is for you?



HEARTMOVES




A move in the right direction

Heartmoves brochure (back)

What is HEARTMOVES?


HEARTMOVES is a low moderate exercise program suitable for anyone who hasn't done any exercise for a while and would like to start gently in a friendly and professional atmosphere.



HEARTMOVES programs are only run by accredited fitness leaders specially trained in managing low to moderate exercise programs suitable for people with cardiac or diabetic conditions.



All programs include screening and if needed referral to your doctor for a medical clearance to exercise.

How can I benefit from HEARTMOVES?



Regular exercise can:

- ☛ Lower blood pressure
- ☛ Improve cholesterol control
- ☛ Help manage weight
- ☛ Help manage diabetes
- ☛ Improve well being and flexibility


The NSW Chief Health Officer recommends 30 minutes or more of moderate intensity physical activity on most days of the week. Heartmoves can be combined with other physical activities such as:

- ☛ Walking
- ☛ Dancing
- ☛ Lawn bowls
- ☛ Golf
- ☛ Swimming


To help you achieve this.

Where can I find HEARTMOVES?

A number of fitness centres have leaders trained in Heartmoves and are providing Heartmoves classes and programs. Heartmoves is only available in Newcastle and the Hunter (look for the logo).



See insert for current contact details of trained Heartmoves fitness leaders.



Heartmoves poster

HEART MOVES



How can I benefit from HEARTMOVES?

Regular exercise can:

- ♥ Lower blood pressure
- ♥ Improve cholesterol control
- ♥ Help manage weight
- ♥ Help manage diabetes
- ♥ Improve well being and flexibility

What is HEARTMOVES?

HEARTMOVES is a low moderate exercise program suitable for anyone who hasn't done any exercise for a while and would like to start gently in a friendly and professional atmosphere.



A move in the right direction



If you want to start exercising gently at your own pace and would like:

- ♥ To meet people
- ♥ Be more physically active
- ♥ Become healthier

Then HEARTMOVES is for you?



HEARTMOVES

Programs are only run by accredited fitness leaders specially trained in managing low to moderate exercise by staff from the National Heart foundation, the Department of Cardiovascular Medicine (John Hunter Hospital) and Diabetes Education Centre (Royal Newcastle Hospital).

The programs are for everyone and specifically designed to be safe for people with cardiac or diabetic conditions.

Where can I find HEARTMOVES?

At selected fitness centres in Newcastle and the Hunter (ring your local centre)

HEARTMOVES
HEARTMOVES
HEARTMOVES

Heartmoves fridge magnet



Appendix E

Body Mass Index (BMI) and energy expenditure calculations



Calculation of overweight/obesity

Body mass index (BMI) was based on self reported height and weight [BMI = weight (kg)/height²(m)]. Overweight or obese was classified as BMI \geq 25 (NHMRC, 1997).

Calculation of energy expenditure

Time reported for each category of physical activity (vigorous, moderate and walking) was multiplied by weight (kgs) and by the relevant rate of energy expenditure:

Vigorous activity	x 7.5 METs
Moderate activity	x 3.5 METs
Walking	x 3.5 METs

An estimate of the total energy expenditure was calculated by adding the results of these three categories together.

Energy expenditure classification

Category of energy expenditure	Health benefit threshold	Corresponding energy expenditure (Kcal/week)
High	Adequate	\geq 1600 AND participating in \geq 1 hour of vigorous activity
Moderate hour of vigorous activity	Adequate	\geq 800 but did not engaged in at least 1 hour of vigorous activity
Low	Inadequate	
Sedentary	Inadequate	50 > 800 0 < 50

NSW Health Promotion Survey, Epidemiology and Surveillance Branch, NSW Health Department and NSW Physical Activity Survey, 1996)

F

Appendix F Media articles

The Star, 14 April 1999

Heart healthy exercise

The Hunter Region Heart Foundation is leading the State with the development of a new exercise program for people at risk of heart disease.

The two-year pilot project called Heartmoves was developed in conjunction with Royal Newcastle and John Hunter hospitals. Several Hunter fitness leaders have already been trained as accredited Heartmoves providers.

According to the Heart Foundation's Dr Amanda Nagle, the program involves low to moderate intensity exercises specifically designed for individuals taking part.

The classes are suitable for people who have or are at risk of heart disease including diabetics, those with high blood pressure and/or high cholesterol, those who've had heart



▲ *The Heartmoves exercise program - gentle exercise and great fun.*

surgery and those who are physically inactive.

Although older people were more likely to fall into these categories, the program was designed for anyone, Dr Nagle said.

"Each person can go at

their own speed," she said.

"The exercises are designed to raise a light sweat and are around the equivalent of a brisk walk."

The classes, set to music,

also provided social interaction which appealed to many older people, she said.

Anyone interested in joining a Heartmoves class should contact their local fitness centre.

The Post, 18 August 1999

Seniors

A Post Advertising Feature

Healthy heart moves

HUNTER people are on the move towards healthier hearts.

Heartmoves, a new safe and fun exercise program designed to fight Australia's leading killer – heart disease – is attracting hundreds of people each week.

Developed in the Hunter, Heartmoves is a low-to-moderate exercise program that

is suitable for everybody but specifically designed to be safe for people with cardiac or diabetic conditions.

The program is delivered by accredited fitness leaders in Newcastle and the Hunter.

The Heart Foundation Hunter coordinator Dr Amanda Nagle said: 'More Australians, especially those who have risk factors

for heart disease need to be taking more regular exercise.'

Risk factors for heart disease include smoking, high cholesterol, high blood pressure, diabetes or inactivity.

A report released this month in Canberra shows heart disease and stroke accounted for 42% of all deaths in Australia in 1996.

The Heart Foundation worked with health professionals from the John Hunter Hospital cardiac unit, diabetes education unit at the Royal Newcastle Hospital and fitness professionals to develop the exercise program.

For more information on the program contact The Heart Foundation ☎4952 4699.



Good for you: Instructor Gayle McDonald (left) leads Margaret White and Anna Fratingelo in a Heartmoves class.

HEART MOVES

A low-to-moderate intensity exercise program suitable for everyone but specially designed to be safe for people who have or are at risk of heart disease and diabetes.

The following are accredited Heartmoves Fitness Leaders recommended by the Heart Foundation.

Bob Carroll's Fitness Studio
Unit 7, 122 Garden Grove Pde
ADAMSTOWN
Phone: 4957 6255

**Laraine Dunn -
Fitness Consultant**
All Areas
WINDALE, BROADMEADOW
BOULAROO, TOMAREE
NELSON BAY
**Phone: 017 980 130
4946 1544**

**Lea Lennox -
Fitness Consultant**
The Forum - Newcastle University
Mon, Wed & Thursday
**Phone: 0407 006 610
4921 7001**

**International Squash Health &
Fitness**
Next to Marathon Stadium
Turton Rd, LAMBTON
Phone: 4957 1758

Total Fitness
21 Cessnock St
CESSNOCK
Phone: 4990 4066

**Green Hills Sports & Leisure
Centre**
15 Mitchell Drive
GREEN HILLS
Phone: 4933 4733

Viking Aquatic & Fitness Centre
156 Cardiff Rd
ELERMORE VALE
Phone: 4951 3280

Planet Fitness
30 Verulam Rd
LAMBTON
Phone: 4956 2144

Body & Soul Healthworks
359 - 363 High St
MAITLAND
Phone: 4932 5655

Isis Fitness
18 Mitchell St
MEREWETHER
Phone: 4963 6933

Howzat Sport & Fitness Club
Cnr Tooke & Darby St
NEWCASTLE
Phone: 4926 4488

Wests Gym & Fitness Centre
88 Hobart Rd
LAMBTON
Phone: 4935 1281

Donna Scates
Belmont Bay Squash & Gym
Dynamics Squash & Health Club
Phone: 0418 266 356

Genetics Fitness Club
Hillsborough Rd
WARNERS BAY
Phone: 4956 6557

Gem Fitness - All Areas
TORONTO - Wed & Fri
CARDIFF - Mon
MARKETOWN - Mon - Thurs
CHARLESTOWN - Mon
Private or Group Class
**Phone: 4956 5345
0407 915 802**

0103473462Aug18

Notes
