Welcome Singapore



Effects of home-based rehabilitation for patients with acute myocardial infarction: A randomized controlled trial

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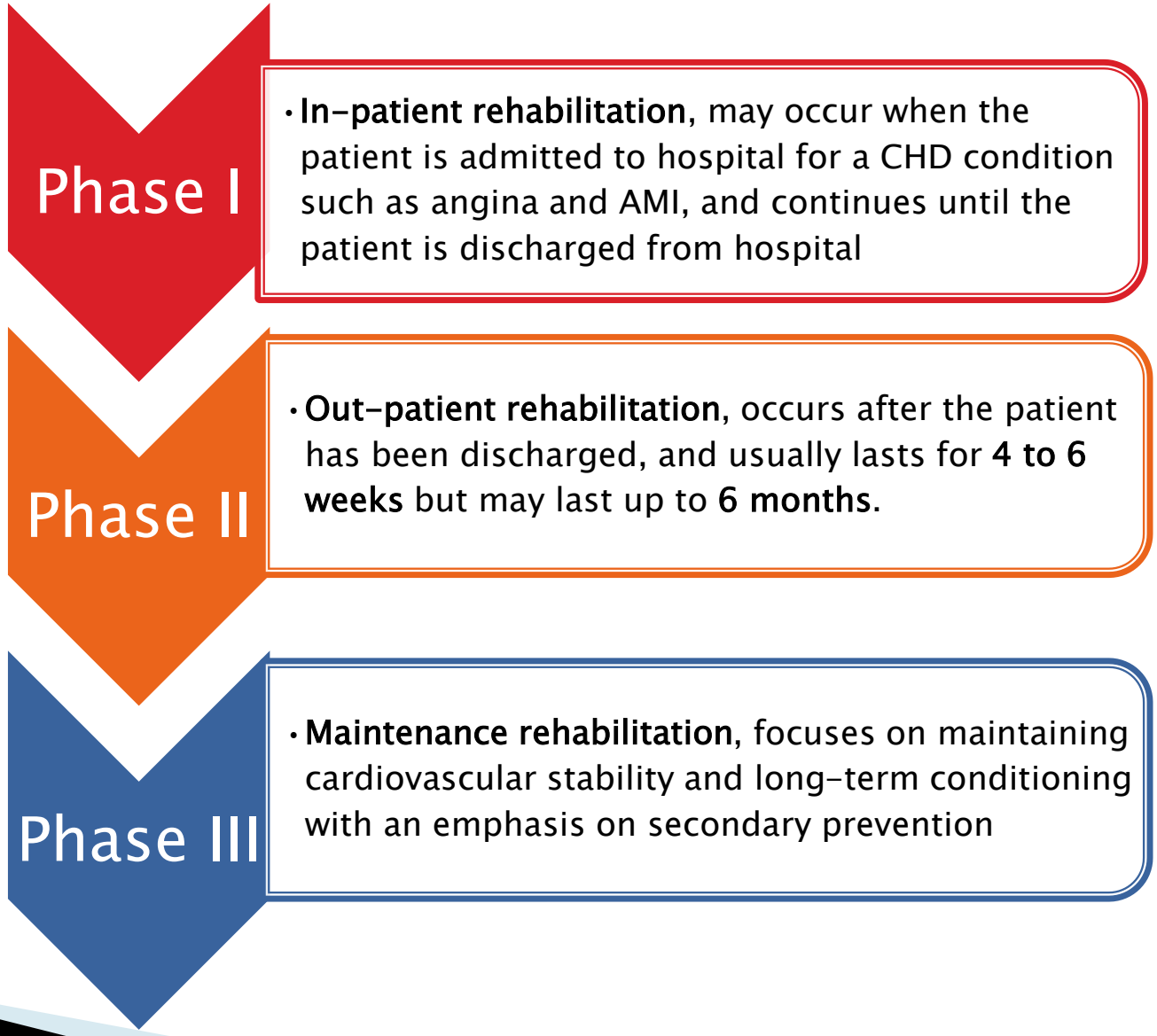


Euro Nursing – 2015,
Valencia, Spain

Study Background

- China has undergone
  - rapid economic growth,
  - urbanization and industrialization,
  - an ageing population
- has seen a dramatic increase in the incidence and prevalence of coronary heart disease, especially acute myocardial infarction (MI)
- The evidence suggests that rehabilitation plays a significant role in enhancing recovery from an acute cardiac event .

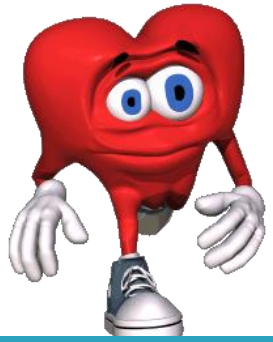
Phases of CRP (AHA)



Components of out-patients CRP (AHA)

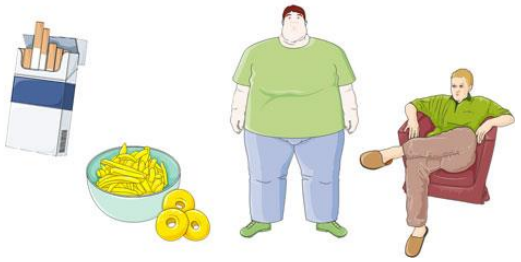
Patient education





Physical exercise training

CRP



Risk factor modification



Psycho-social management

- Over the past decade, the centre/hospital-based cardiac rehabilitation (CR) programmes have been well developed, and the benefits of attending those programmes have been widely documented .
- Unfortunately, the programme uptake rates are disappointingly low with only **10-40%** participation reported consistently in the literature.
- Home-based CR progaramme may be more practical and feasible for Chinese patients with MI
- Different approaches:
  - Home-based Exercise Training CRPs
  - Heart Manual Approach

http://www.theheartmanual.com/Programmes/Pages/default.aspx



Study Aim

We hypothesized that a home-based programme would provide an effective and viable alternative to usual care in improving HRQL and psychological status.

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Methods



- ***Study design***

A randomised controlled study

- ***Study setting***

the cardiovascular units of two university-based teaching hospitals in the city of Xi'an in Shaanxi Province in China.

- ***Sampling***

convenience sample of **160 MI patients**

Methods (Con't)

-- Inclusion criteria include patients:

(1) a documented diagnosis of acute MI;
(2) able to speak and read Chinese;
(3) living at home after hospital discharge;
(4) available for telephone follow-up;

-- Exclusion criteria were:

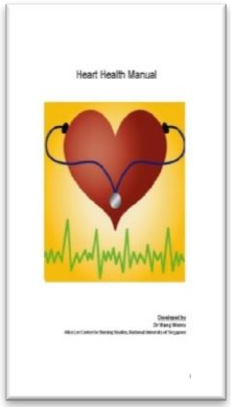
(1) a known history of major psychiatric illness;
(2) pre-existing mobility problems;
(3) unstable angina;
(4) severe complications

Methods (Con't)

6-week home-based self-management CR programme



Nurse facilitator



HM



Education session

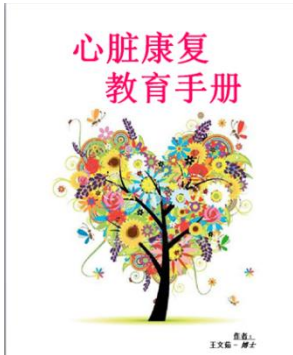


Telephone follow-up

Methods (Con't)

- *Intervention* (Heart Manual Approach) – 6-week home-based rehab. programme

- **Heart Manual**: contains three sections:
  1. six weekly topics on health education
  2. answers commonly asked questions about medication, PCI, and anxiety and depression
  3. information on the normal values of cardiac physiological risk parameters



- **Education session** for participants in Ex group
- **Telephone follows** at 3 weeks after discharge for participants in Ex group

Methods (Con't)

- ***Outcome measures***

-- Chinese Mandarin version of SF-36 (CM:SF-36):

-- Chinese Mandarin version of the Myocardial Infarction Dimensional Assessment Scale (CM-MIDAS)

-- Chinese Mandarin version of the Hospital Anxiety and Depression Scale (CM-HADS)

-- Demographic and clinical data

-- Unplanned service use : cardiac related readmission, emergency visit and unplanned medical consultation

Instruments used in the study

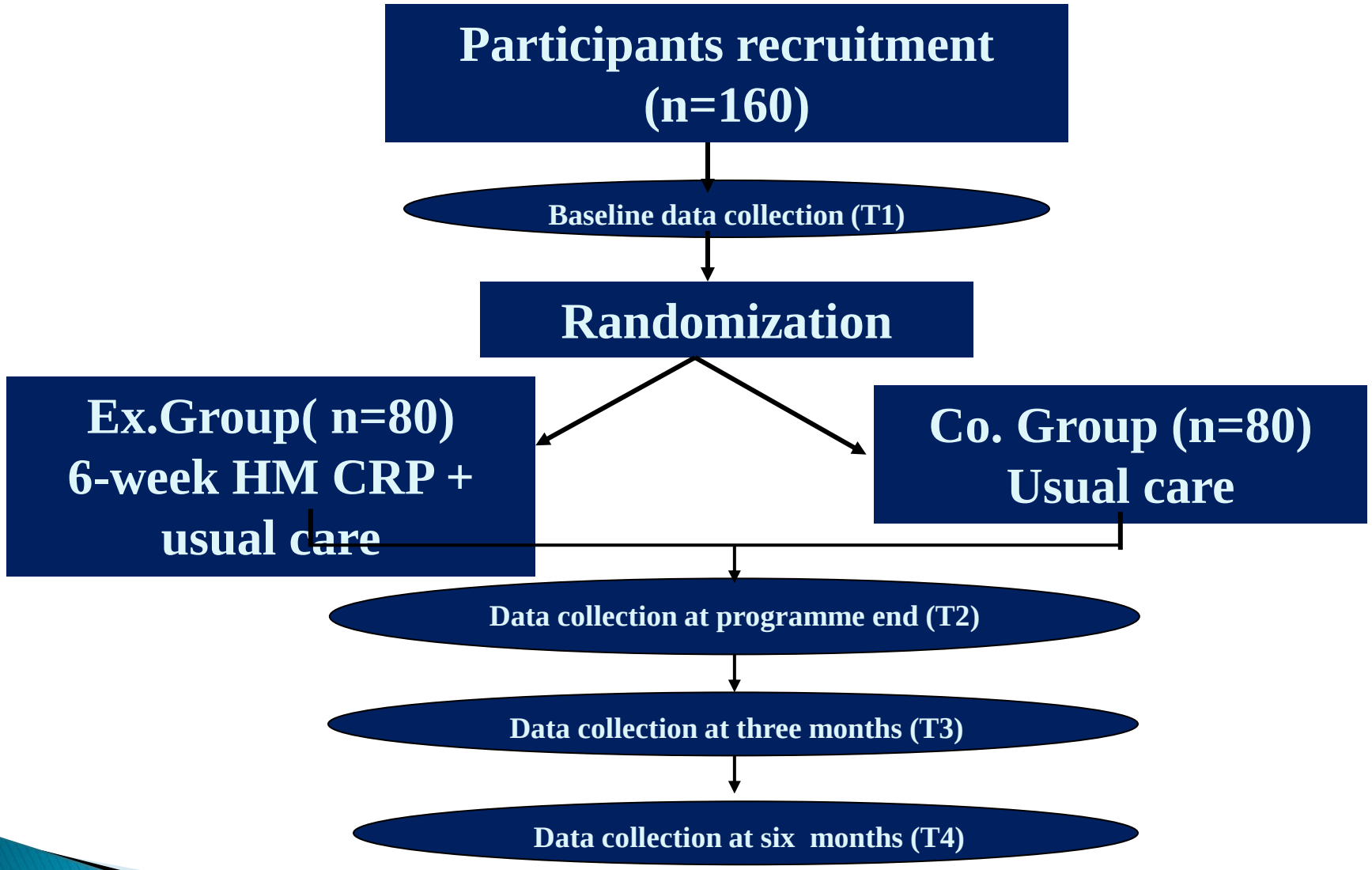
SF-36: generic instrument, 36 items, 8 subscales (Physical Function, Role Physical, Bodily Pain, General Health, Vitality, Role Emotional, Social Function, Mental Health) ↑ Score,  HQoL

MIDAS: disease-specific instrument, 35 items, 7 subscales (Physical Activity, Emotional Reaction, Insecurity, Dependency, Diet, Concerns over Medications, Side Effects) ↓ Score,  HQoL

HADS: 14 items, two subscales (Anxiety, Depression)

↑ Score, ↑ Anxiety and Depression

Data Collection Procedure



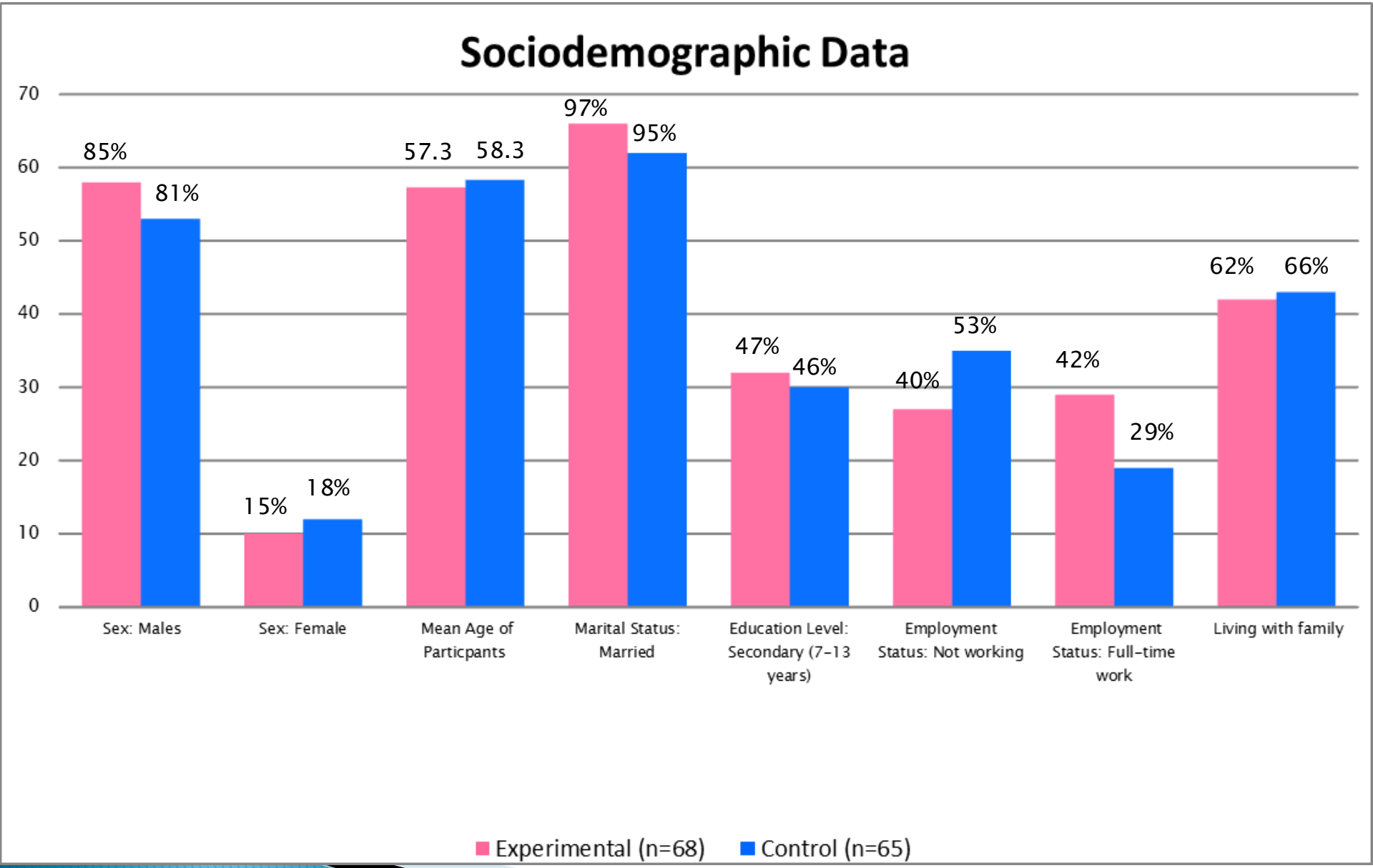
- ***Data Analysis***

-- **Descriptive statistics**: used for sample descriptio and summarization of the data from the outcome variables.

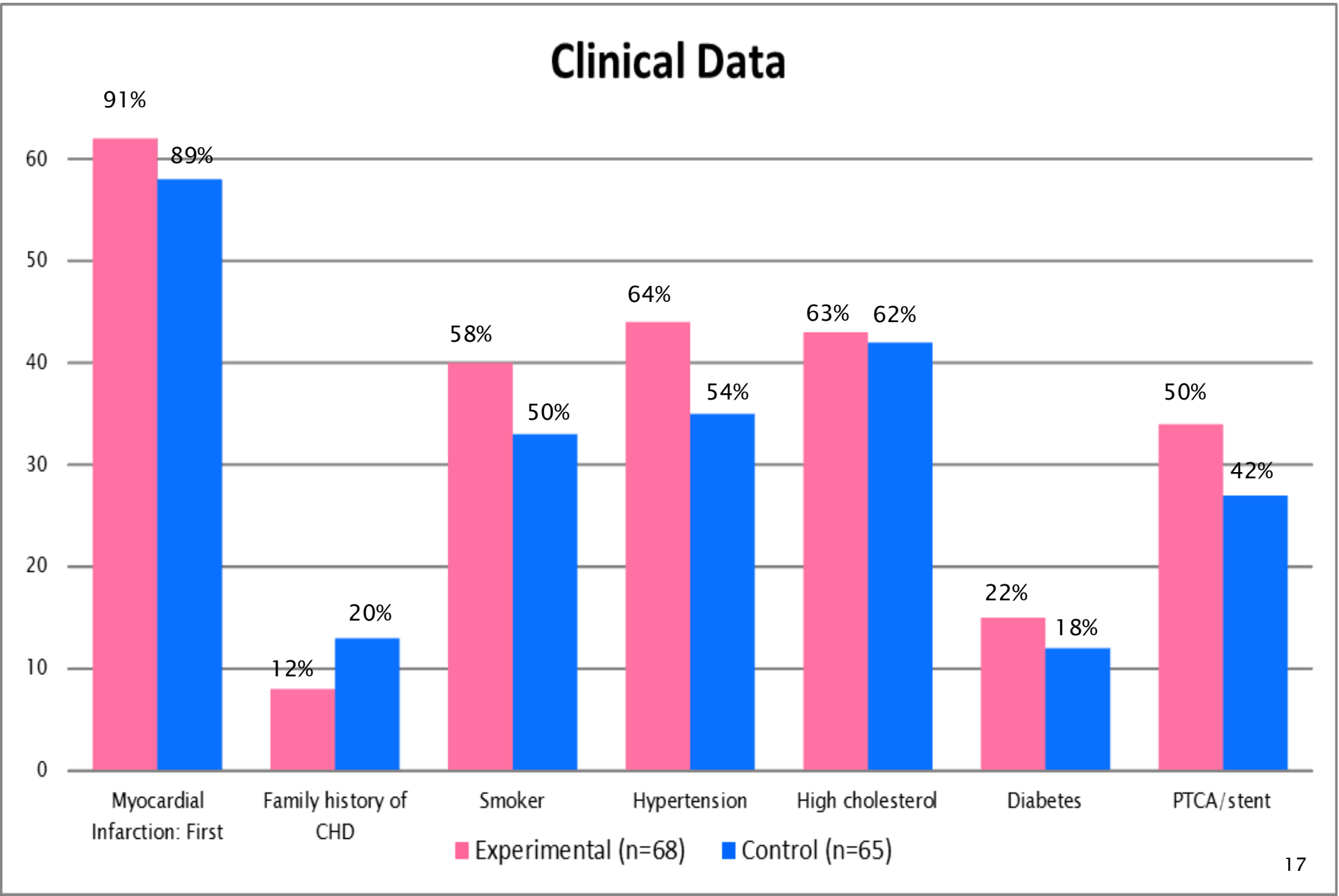
-- **independent t-t and Chi-square**: Homogeneity of the study groups

-- **Multivariate repeated measures ANOVA:** was used to compare changes in study outcomes (i.e., time, group, and time×group effects) between the two groups across the four study end points

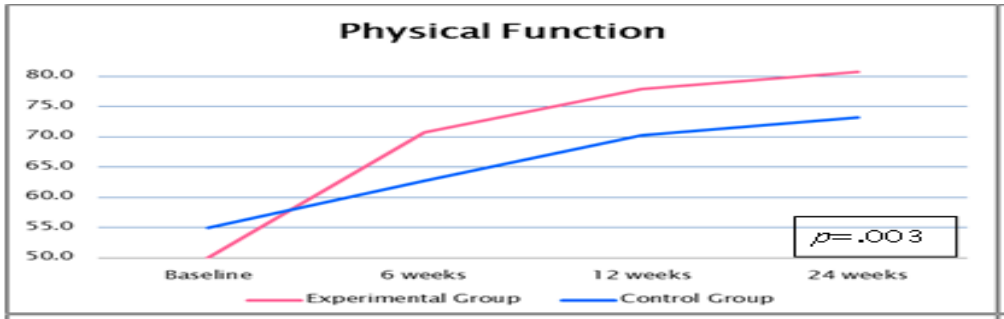
Results: Sociodemographics

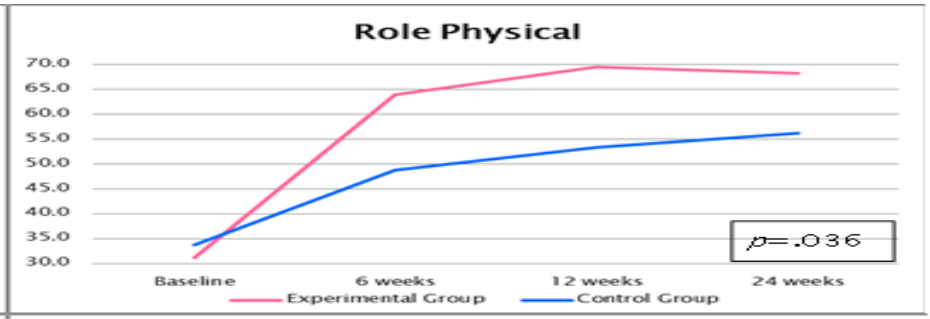


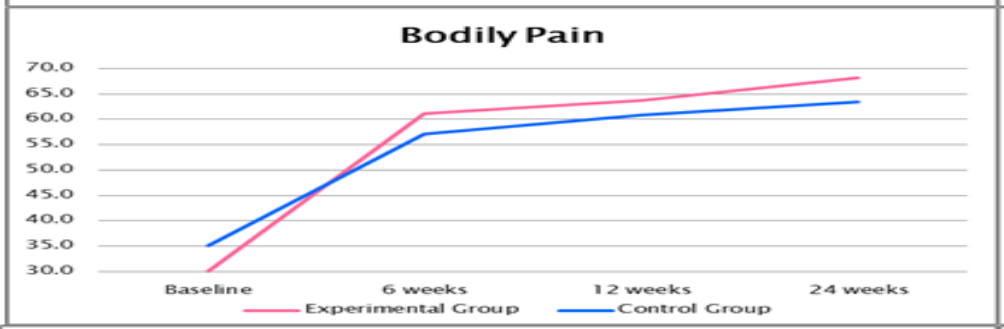
Results: Clinical Data

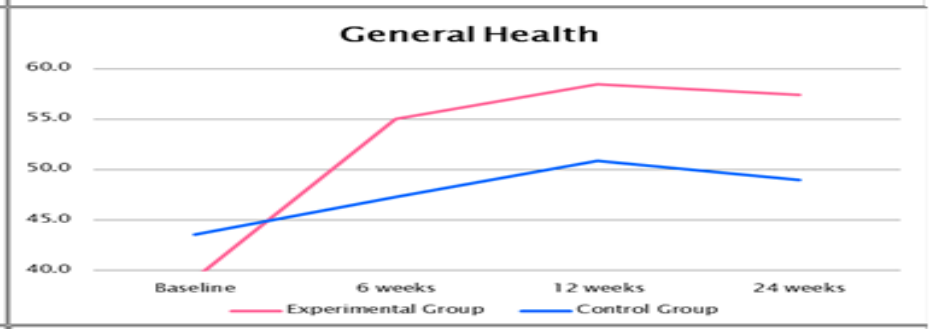


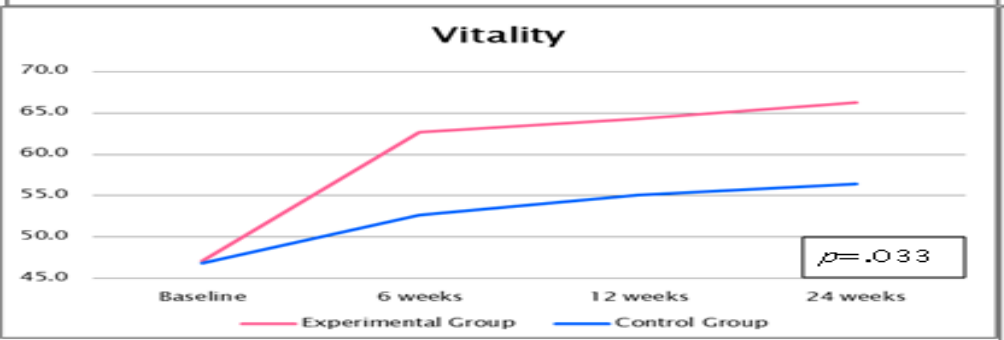
Results – SF-36 (Group Effect)

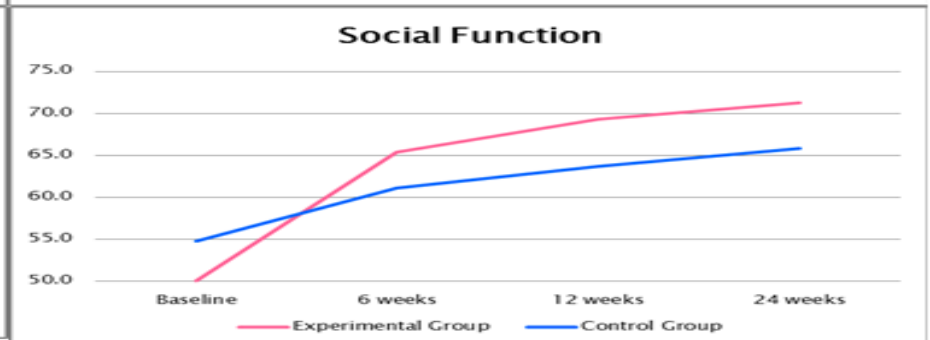


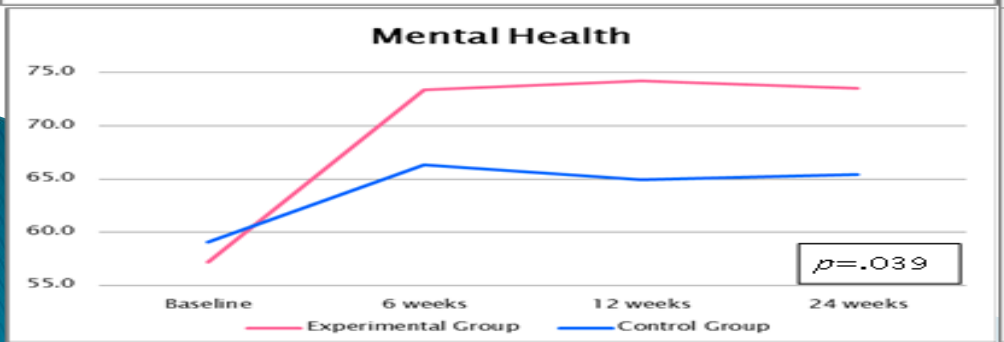


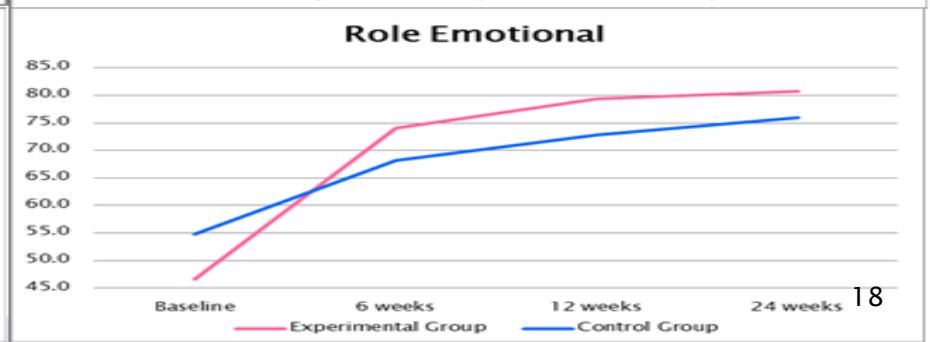




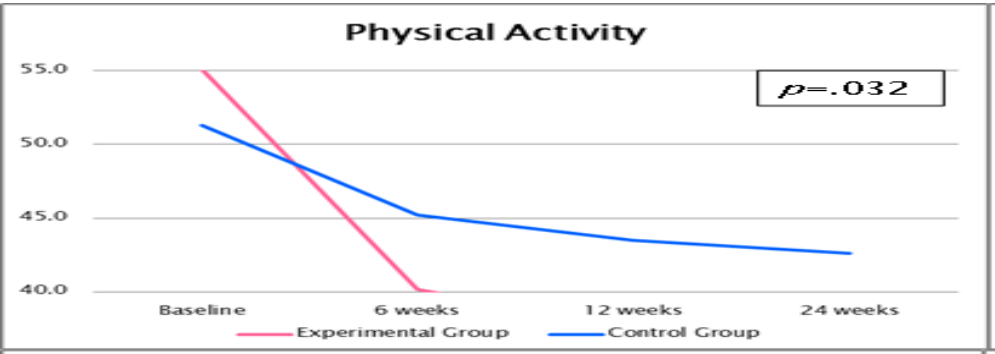


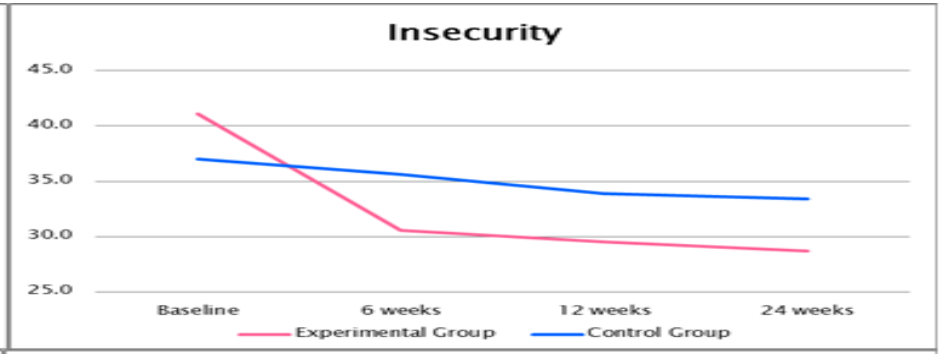


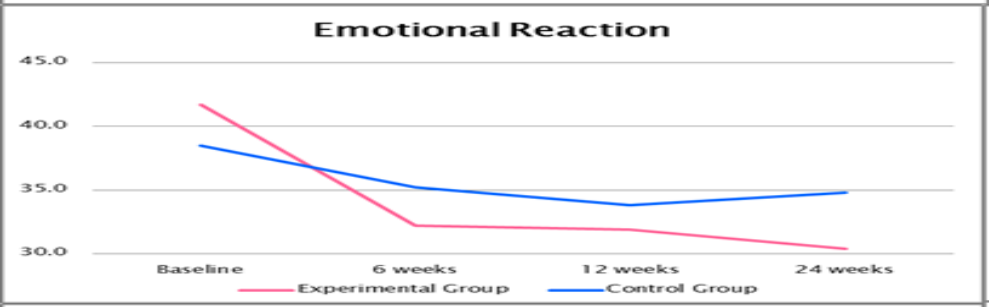


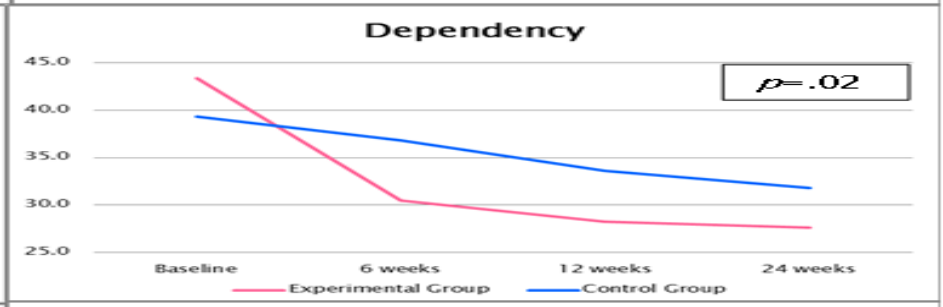


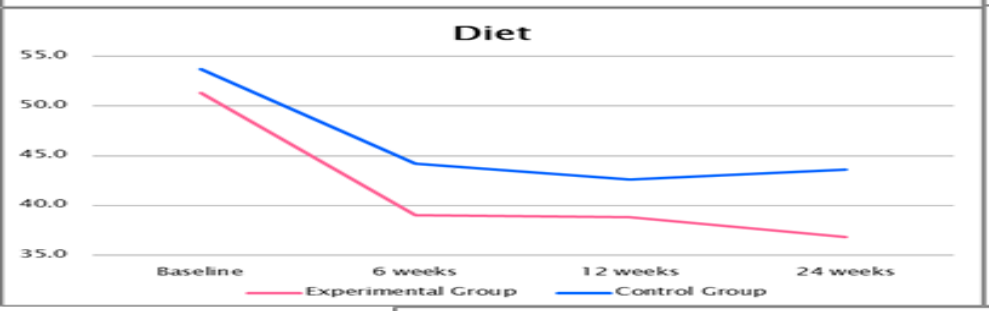
Results – MIDAS (Group Effect)

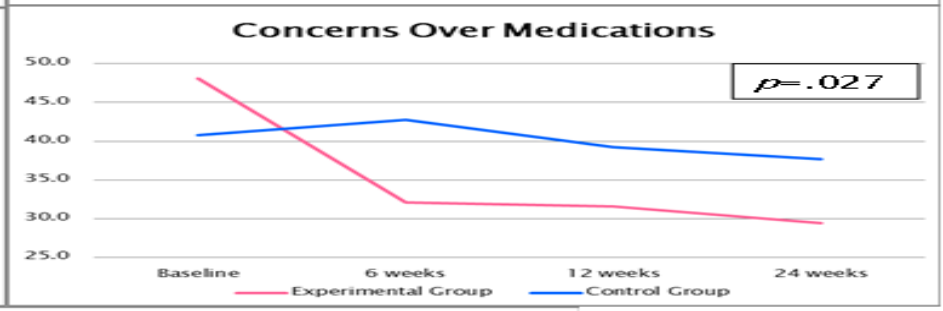


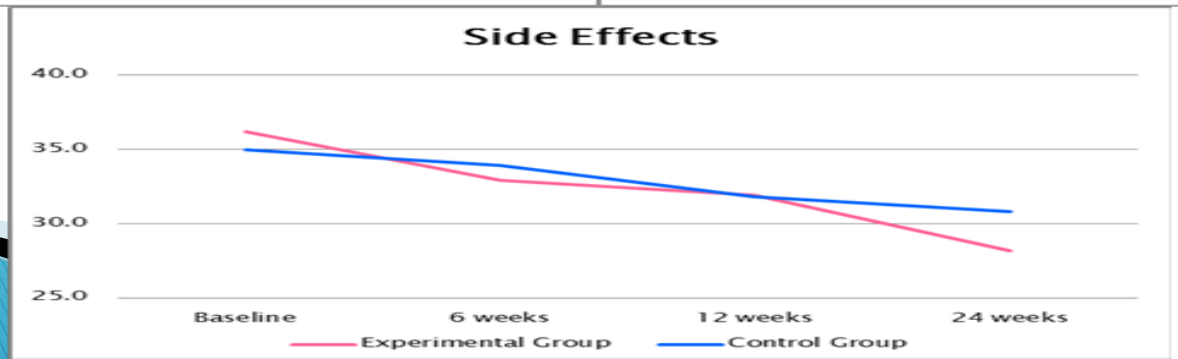




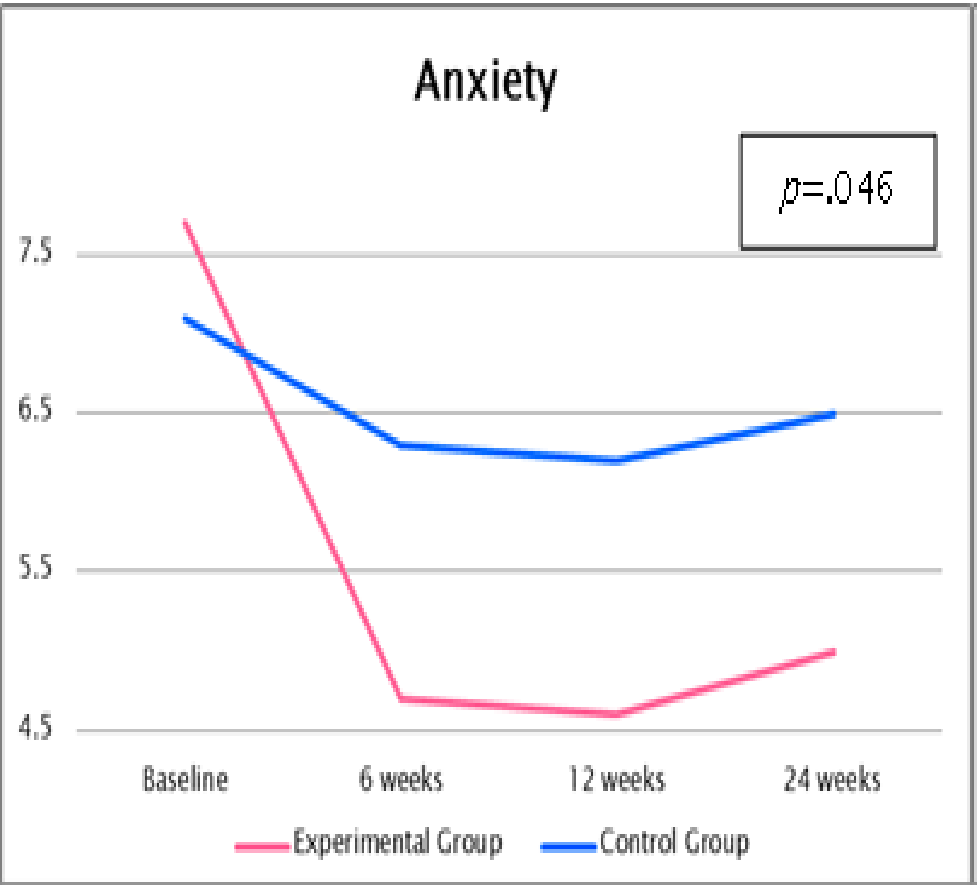


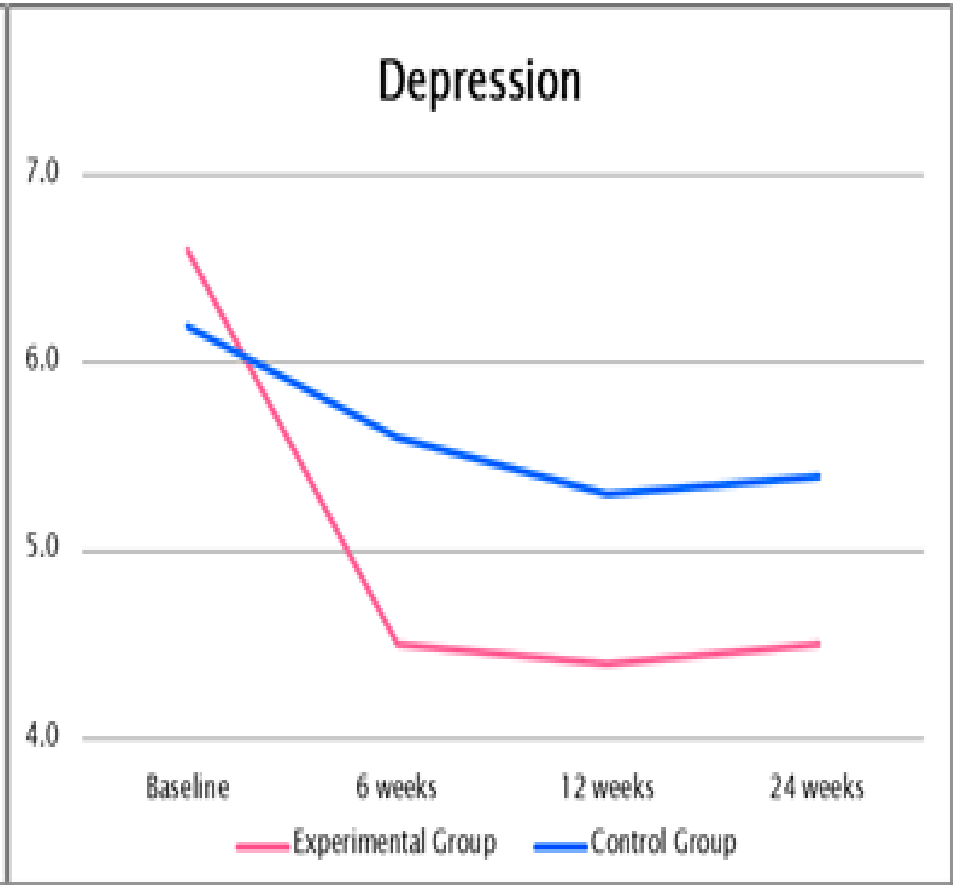






Results – HADS (Group Effect)

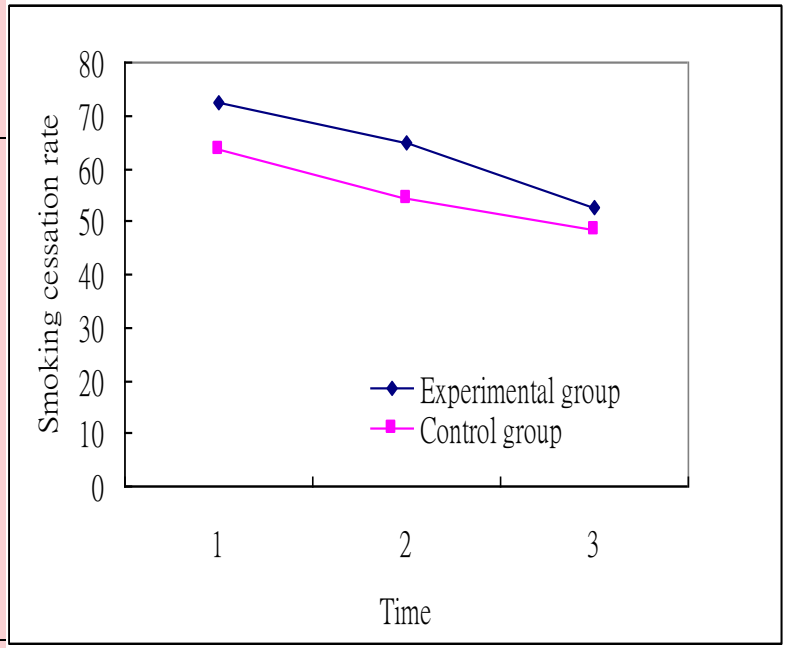




Results: Cardiac risk factors

- Quit smoking

	Experimental (n = 40) *f* (%)	Control (n = 33) *f* (%)	χ^2	*P*
Programme end				
Quitter	29 (72.5)	21 (63.6)	0.65	0.42
Non-quitter	11 (27.5)	12 (36.4)		
3-month follow-up				
Quitter	26 (65.0)	18 (54.5)	0.82	0.36
Non-quitter	14 (35.0)	15 (45.5)		
6-month follow-up				
Quitter	21 (52.5)	16 (48.5)	0.12	0.73
Non-quitter	19 (47.5)	17 (51.5)		



Results: Unplanned Health Service Use

Comparison of unplanned health service use (Mean, SD) at the 6-month post-test study endpoint between the study groups

	Experimental (n = 68) *Mean (SD)*	Control (n = 65) *Mean (SD)*	*Z*	*P*
Unplanned cardiac-related hospital readmission	0.10 (0.30)	0.17 (0.37)	-1.11	0.266
Unplanned cardiac-related emergency room visit	0.15 (0.39)	0.15 (0.44)	-0.12	0.904
Unplanned cardiac-related medical consultation	0.63 (0.88)	1.03 (0.10)	-2.11	0.035*

Discussion

- There were significant differences in the main outcomes when the home-based group was compared with the usual care group at 6 weeks, 3 and 6 months.
- The home-based group had significantly higher scores on 4 of the 8 domains of the Chinese SF-36 and 3 of the 7 dimensions of the Chinese MIDAS, and significantly lower scores on the anxiety, but not the depression, subscale of the Chinese HADS.

Discussion (Con't)

- The study may provide a useful tool to help health-care professionals to meet the cardiac rehabilitative care needs of patients with MI.
- It empowers patients to take responsibility and accountability for their own disease management and helps confronting the challenge of limited health care resources.
- Such a model appears appropriate for Chinese MI patients

Limitations

- **Convenience sampling**
- The **absence of a blind condition** may threaten the internal validity of the study
- the researcher played the role of both intervener and outcome assessor and this might have influenced participants to provide desired answers, and so **interviewer bias** cannot be excluded.
- In the **absence of an evaluation of the level of adherenc**e, the integrity of the intervention cannot be assured.


Thank
You