Self-efficacy for exercise among cardiac patients, how much do we know?

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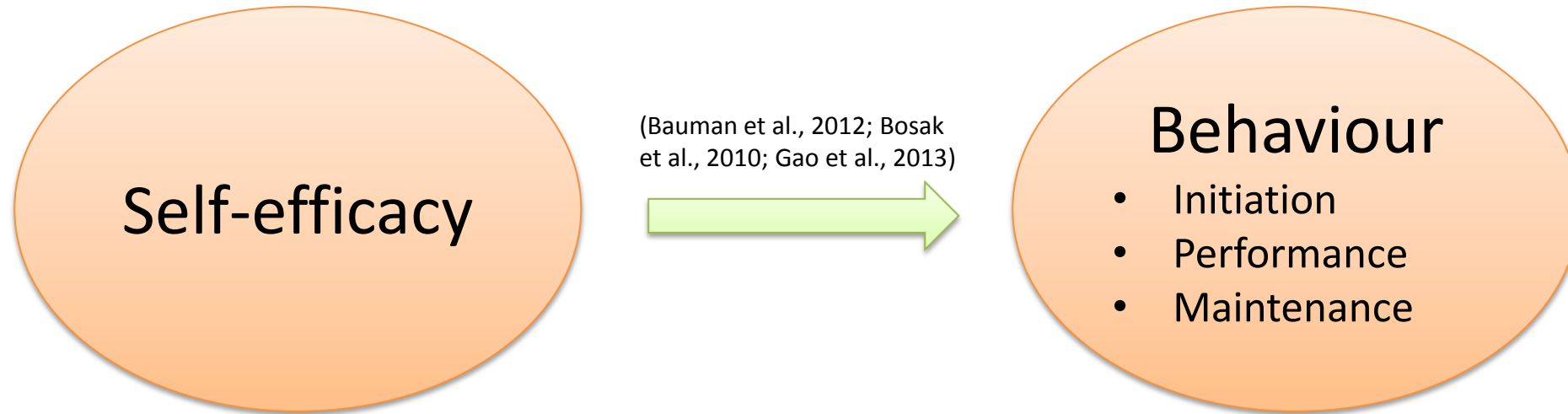
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Disclosure

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- The funder has no rule in the study design, data collection, analysis and design of this presentation.

- The authors declare no conflict of interest.

Background

- Cardiovascular disease (CVD)
  - leading cause of death (31% of all death worldwide) (WHO, 2018)
  - In Hong Kong, CVD has been the 3rd leading cause of death over the past four decades
    - Coronary heart disease (CHD): 70% of cardiac mortality (Wong et al., 2011)

- Cardiac rehabilitation (CR):
  - Class-I intervention for secondary prevention of CHD
  - Focus on supporting patient to maintain ≥ 150 minutes/week moderate-intensity physical activity (Mezzani et al., 2013)
  - 50 – 70 % of CR participants return to sedentary lifestyle in 2 – 12 months after CR (Chair et al., 2013; Chase, 2011)

Exercise self-efficacy

Social Learning Theory

Self-efficacy

(Bauman et al., 2012; Bosak et al., 2010; Gao et al., 2013)

Behaviour
- Initiation
- Performance
- Maintenance

Study aim: Examine association between exercise self-efficacy and objectively assessed physical activity level and exercise capacity in patients joining CR program

Study methodology

- This is a substudy of an ongoing RCT of a music-paced physical activity intervention for CHD patients receiving cardiac rehabilitation

- Participants:
  - CHD patients aged 18 or more, able to understand Cantonese and read Chinese
  - Exclusion criteria: physical impairment that prohibits exercise; cognitive impairment (score <6 in the Abbreviated Mental Test, HK version); history of head trauma or seizure or unable to wear ear/headphone

- Study setting: the largest CR center in the eastern part of Hong Kong Island

- Sample size for the RCT: n =130

Date collection

- Exercise self-efficacy
  - Chinese version of the Cardiac Exercise Self-Efficacy Instrument
  - 16-items related to the confidence in performing exercise (5-point Likert scale: 1 = very little confidence; 5 = quite a lot of confidence)
  - Higher mean score = higher level of exercise self-efficacy
  - Cronbach's alpha = 0.91
  - Concurrent validity r = 0.3 p <0.01 (exercise capacity measured by the maximal exercise stress test)

- Physical activity level
 - 7 consecutive day record of an activity tracker

- Clinical parameters
  - Body mass index
  - Waist circumference
  - Blood pressure
  - 8-hour fasting blood samples
    - Lipid profile
    - Fasting glucose
    - HbA1C

# Participant characteristics (n = 110)

| Socio-demographic characteristics |
|---|
| • Male: 83 (75.5%) |
| • Age: 63.7 ± 10.4 years (range: 36 - 86) |
| • >6 years of formal education: 65 (59%) |
| • Being married: 75 (68.2%) |
| • Being retired: 38 (34.5%) |

Factors associated with PA level
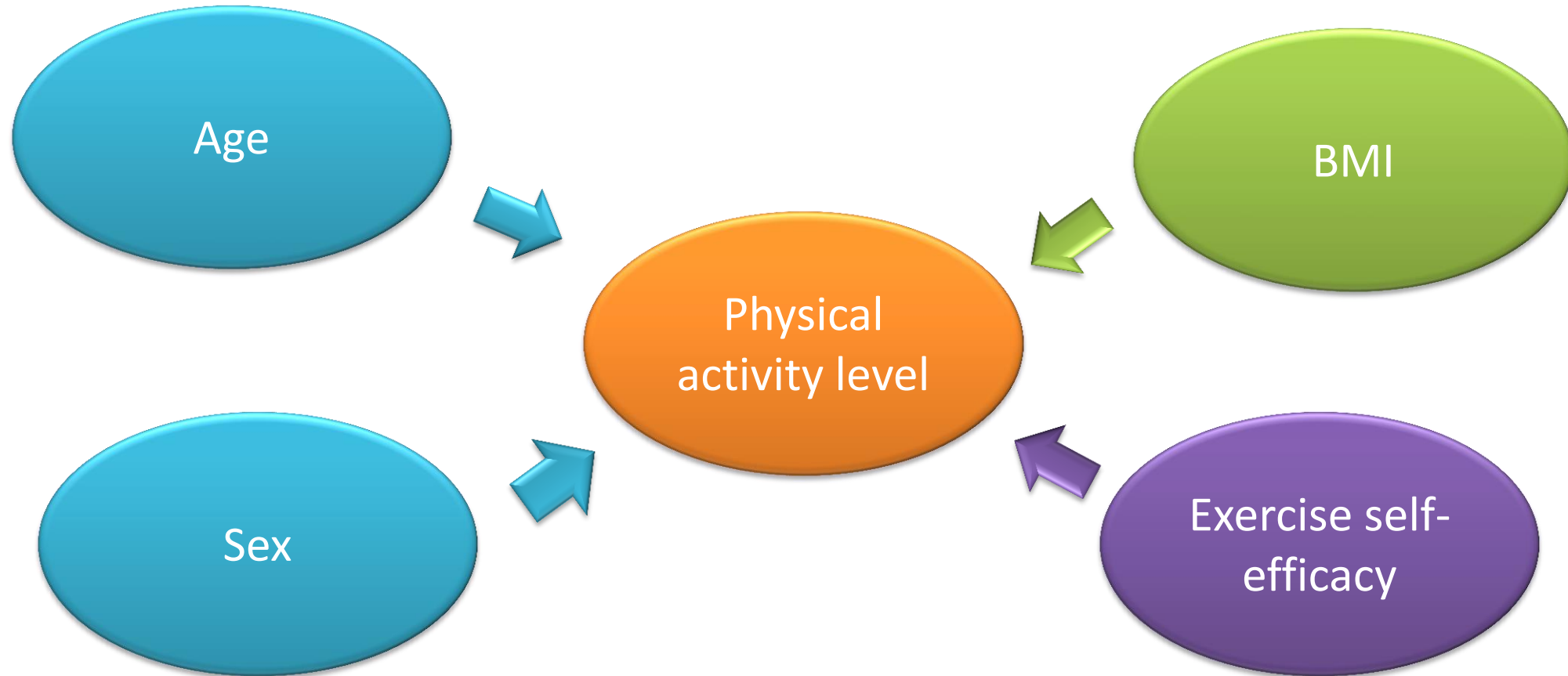
# Association between exercise self-efficacy and adequate physical activity level (steps ≥ 7500/day)

25% of exercise self-efficacy

2.3 times of performing adequate physical activity
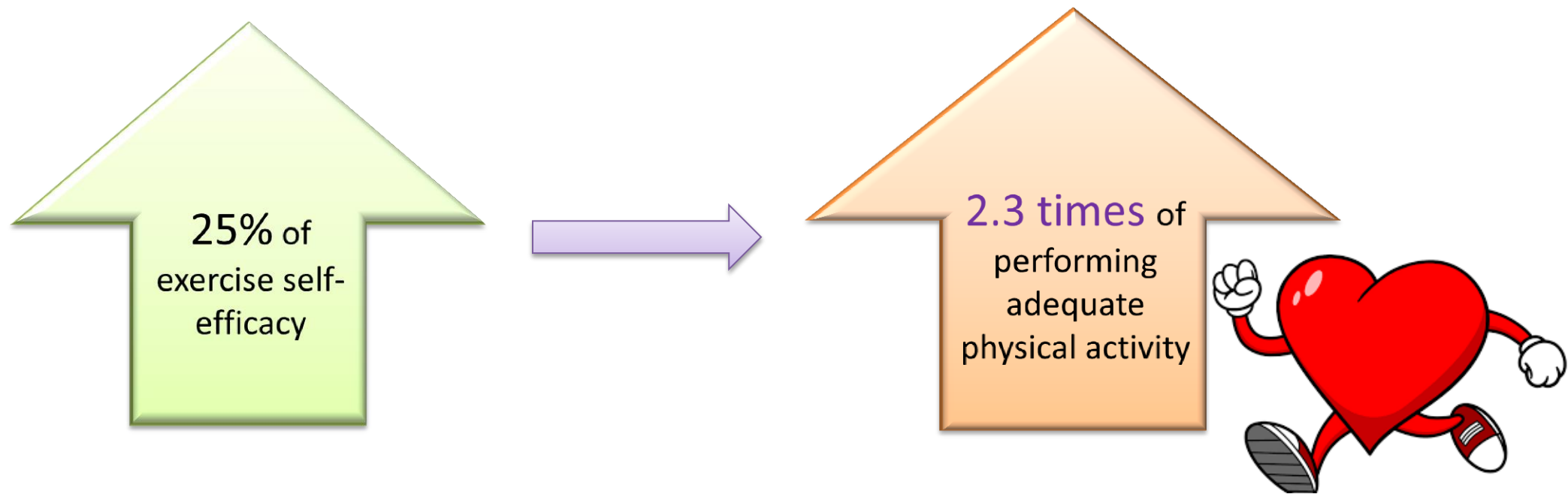
*Adjusted for age, sex and body mass index

Factors associated with exercise capacity

Age

BMI

Exercise capacity

Sex

Physical activity level

Exercise self-efficacy
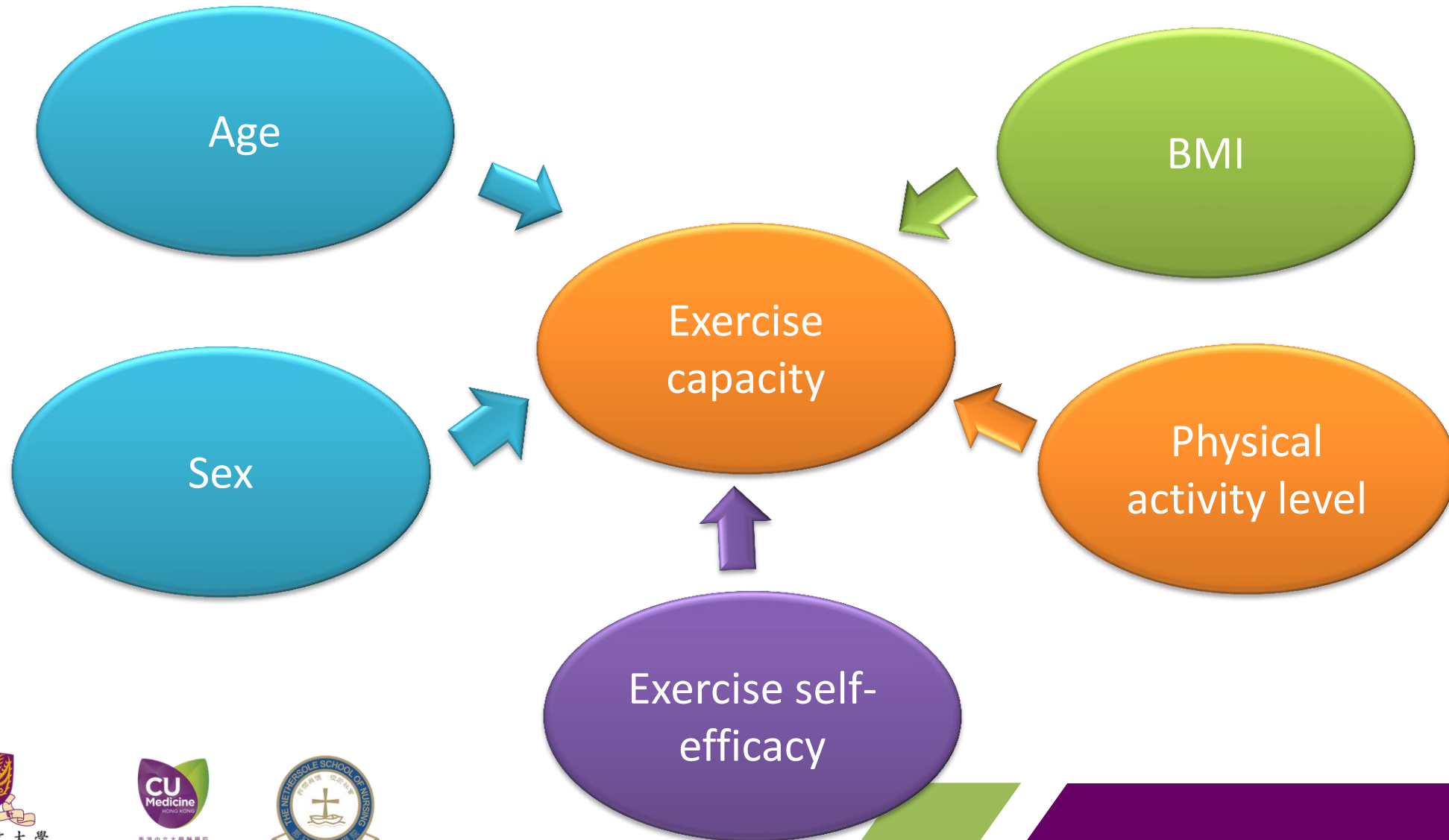
Association between exercise self-efficacy and exercise capacity

1% of exercise self-efficacy

→

3.29 meters of incremental shuttle walk test
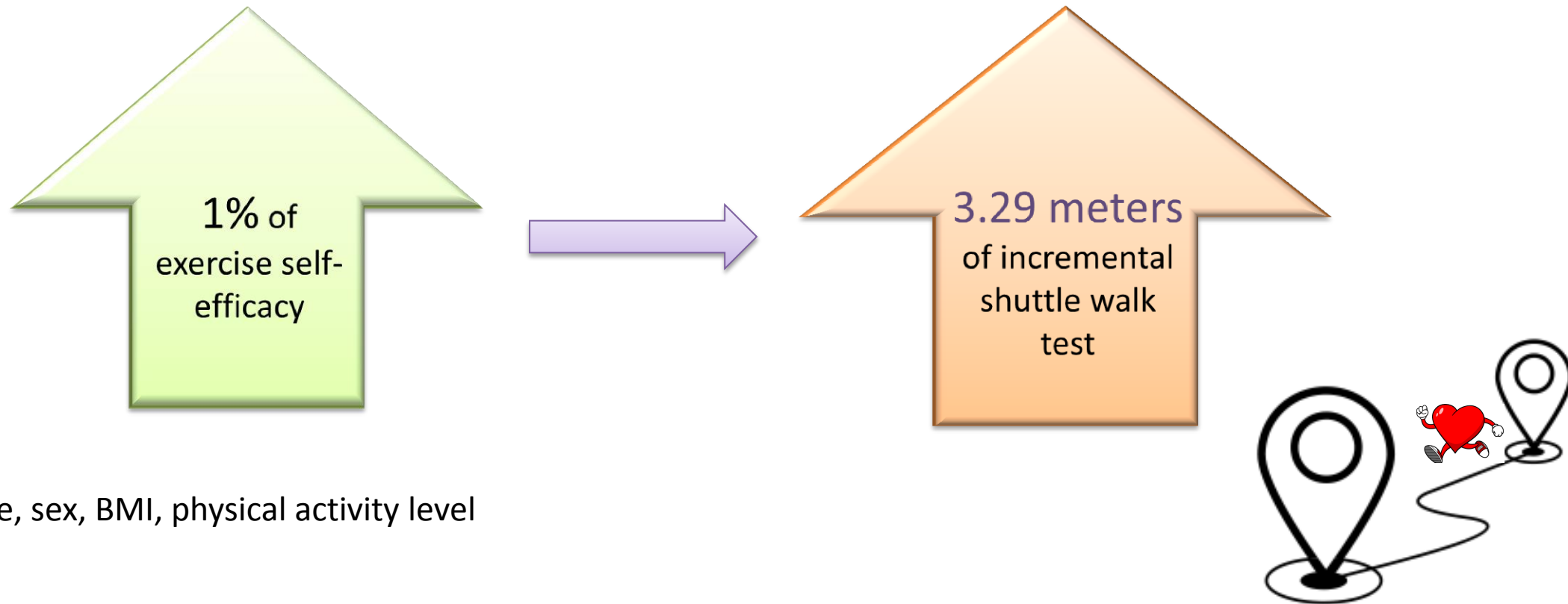
Adjusted for age, sex, BMI, physical activity level

Discussion

- A longitudinal study is suggested to examine the influence of exercise self-efficacy on the maintenance of recommended PA level among CHD patients.

- **C**HD patients with poor exercise self-efficacy have intensify risk of inadequate physical activity level and poor exercise capacity.

- **R**ehabilitation program of these population is suggested to incorporate the assessment and promotion of exercise self-efficacy.

Thank You

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