Physical activity among patients with cardiovascular disease
a predictor of hospital care utilisation and mortality in clinical work

av

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Abstract:

Guidelines highlight the importance of physical activity (PA) in secondary prevention of cardiovascular disease (CVD) within the healthcare sector. Previous studies have mainly focused on the effects of PA at moderate-vigorous intensity performed within exercise-based cardiac rehabilitation (CR). However, only a minority of patients with CVD participate in exercise-based CR, and it is not known to what extent the guidelines for PA are implemented in clinical work. This leads to a knowledge gap in PA levels among patients with CVD, and the potential association of PA with hospital care utilisation and all-cause mortality. The overall aim of this thesis was to investigate PA and its importance for patients with CVD, and to what extent it is promoted during clinical work. The associations between self-rated PA level, changes in self-rated PA level, and sedentary time (SED) with hospital care utilisation and all-cause mortality were explored in three cohort studies (Studies I-III). Data were collected via questionnaires, medical records and national registers. Study I explored everyday PA, physical exercise and SED among patients with CVD (n=1148) prior to admission to a cardiac ward at two of the hospitals in Stockholm. Studies II and III explored PA (of at least moderate intensity) post hospitalisation, and included 30,644 and 22,227 patients with myocardial infarction (MI), respectively, from the national SWEDHEART registry. Finally, in Study IV, healthcare professionals’ (n=251) stated importance and clinical work to promote healthy lifestyle habits (alcohol consumption, eating habits, physical activity, and smoking) were explored in a cross-sectional study. All healthcare professionals working on cardiac departments in two hospitals in Stockholm were included.

The main findings were:

• PA level (everyday PA, physical exercise, total PA level) and SED pre and post hospitalisation for cardiac events were found to be significant predictors of hospital care duration, readmission and mortality. The effects of high PA level and low SED did not differ between CVD diagnosis, sex, age, or comorbid states such as individuals with and without diabetes mellitus type II, kidney dysfunction, hypertension or dyslipidaemia.

• There were no differences between individuals reporting a moderate or high level of PA or a medium or low level of SED, illustrating that “a little activity is better than nothing” and that the greatest health benefits would be achieved by increasing PA among the most inactive patients with CVD.

• Changes in PA level during the first year post MI are important. Increased PA lowered the risk of mortality, and decreased PA increased the risk of mortality in patients post MI.

• Healthcare professionals considered it important to promote lifestyle habits among patients within the healthcare sector in general, as well as in their own clinical work. However, there was a difference between stated importance and clinical practice as only a minority of healthcare professionals asked or provided counselling on healthy lifestyle habits. Our results indicated a relationship between promoting patients’ lifestyle habits in clinical work, and if they perceived clear organisational routines and objectives.

In conclusion, the results of this thesis have a clinical impact. Firstly, asking patients on a cardiac department about their PA level and SED may identify individuals in need of behavioural changes. By identifying and supporting individuals who need to increase their PA level, clinicians may potentially decrease the utilisation of inpatient care and also lower the risk of all-cause mortality among individuals with a CVD diagnosis. Secondly, this information is of great predictive value, and PA can be seen as an additional marker of disease severity.

Keywords: Cardiovascular disease, Physical exercise, Sedentary behaviour, Physical activity, Survival, Mortality, Hospitalisation, Cardiology Service, Guideline adherence
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