



Service Priorities and Programmes
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Quantification of physical activity in Chinese Home dialysis patients by wearable activity tracking device (Fitbit®) – A single-center, cross-sectional study.

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Introduction

Physical inactivity is a major concern amongst patients with chronic kidney disease. Yet the level of physical activity in Chinese home dialysis patients, which included peritoneal dialysis (PD) and nocturnal home haemodialysis (NHHD) subjects, has not been previously well reported. Fitbit® is a contemporary wearable activity tracker with high validity in steps counting, which can effectively capture wearer's physical activities.

Objectives

A single-center, cross-sectional study to measure physical activities, daily steps taken and exercise capacity of Chinese home dialysis patients.

Methodology

Chinese PD and NHHD patients between 18 and 65 years old were enrolled. Assisted walkers, amputees, patients with recent cardiovascular event, or had active cancers were excluded. Questionnaire regarding their frequency and mode of physical activities was performed. 6-minute walking test (6MWT) was executed by physiotherapists. Steps taken in 7 consecutive days were captured by Fitbit®.

Result

20 PD and 10 NHHD patients were recruited. The mean age and body mass index for PD group was 52.9 ± 9.8 years and 25.3 ± 4.5 kg/m² respectively, compared with NHHD group of 47 ± 9.2 years and 24 ± 5.3 kg/m² ($p = 0.07$ and 0.39). The mean daily steps taken were 5853.2 ± 3179 and 9192 ± 2889 for PD and NHHD patients respectively ($p = 0.006$). The mean 6MWT distance for PD population was 414.1 ± 87.7 meters, compared to 501.1 ± 156.7 meters of NHHD counterparts ($p = 0.078$). The questionnaire revealed that 71.4 % of all enrolled patients performed exercise no more than once a week, and 92.9% considered walking level ground as their main exercise. Physical inactivity is common in Chinese home dialysis patients. Compared

with healthy individuals, they take significantly less steps per day and have lower exercise capacity. Thus exercise promotion and prescription by physicians are suggested to tackle this challenge, which might impact on their quality of life and mortality.