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Enhancing Physical Activity of Patient in Orthopaedic Rehabilitation using Activity Tracker

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Introduction

A number of studies indicate that physical activity level in rehabilitation are low while it is even worse in aged care rehabilitation. A similar sedentary situation is also observed in the elderly orthopaedic patients in our setting, which is believed to be detrimental for mobility and function.

Objectives

This project intends to reverse the sedentary situation and increase physical activity level for the elderly orthopaedic patients during inpatient rehabilitation, and hence a higher functional status on discharge.

Methodology

Previously community dwelling patients having lower limb orthopaedic conditions who were able to perform full weight bearing walking exercise and cognitively sound were recruited. They were provided with activity tracker and were assigned into intervention or control group. The activity data collected (i.e. steps count and active time) was shown to patient and case therapist in intervention group on every working day for their reference on the adjustment on exercise regime while patient in control group receive usual physiotherapy service according to preset program without knowing the activity data.

Result

47 patients were recruited with 11 drop out, 36 sets of completed data (19 from intervention and 17 from control group) were used for analysis. With similar age (79.00 vs 80.47) and baseline functional status (EMS on admission 8.37 vs 7.71; MFAC on admission 4.47 vs 4.47), a significantly higher 7 day cumulative step counts (8238 steps vs 3297 steps) and active time (180 mins vs 96 mins) were found in patients in intervention group indicates the use of activity tracker

is possible in enhancing the activity level in our target patient group. Comparable discharge functional outcomes (EMS on discharge 16.53 vs 15.18, $p=0.378$; MFAC on discharge 6.11 vs 5.88) were achieved with a shorter LOS (16.79 days vs 20.35 days) from patients in intervention group implies the potential functional improvement from enhanced activity level.

Recommendation

1. Further collection of data is suggested due to the small sample size used in the project may not be representative.
2. Examine the effectiveness on the use of activity tracker in other disease group
3. Extend the use of activity tracker to monitor the physical activity level and exercise compliance of patient in community settings.