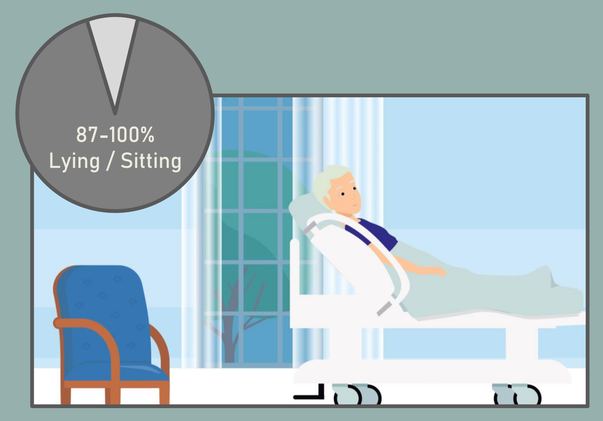
FACTORS INFLUENCING PHYSICAL ACTIVITY BEHAVIOUR OF HOSPITALISED PATIENTS



Introduction

Low amounts of physical activity (PA) are common during hospitalisation and have been associated with negative health outcomes. The aim of this thesis is to contribute to improving patients' PA behaviour during hospitalisation.

Barriers and enablers to physical activity in patients during a hospital stay: a scoping review

Aim: to identify and categorise all published patient- and healthcare professional (HCP) reported barriers and enablers to PA during a hospital stay using the Theoretical Domains Framework (TDF).

Methods: a scoping review was conducted including quantitative, qualitative and mixed-methods studies. Two reviewers extracted, coded and categorised factors into TDF-domains.

Results: 56 articles were included. 264 barriers and 228 enablers were reported by patients, 415 barriers and 409 enablers by HCPs. The scoping review presents a comprehensive overview of barriers and enablers to PA during a hospital stay and highlights the prominent role of the domains 'Environmental Context and Resources' and 'Social Influence'.

Barriers and enablers to physical activity behaviour in older adults during hospital stay: a qualitative study guided by the Theoretical Domains Framework

Aim: to explore and categorise patient- and HCP-perceived barriers and enablers to PA in older adults (≥70 years) admitted to hospital with an acute medical illness, using the TDF.

Methods: a qualitative study conducting semi-structured interviews with patients, nurses, physicians and physiotherapists. Interviews were analysed using directed qualitative content analysis and barriers and enablers were extracted, coded and categorised into TDF-domains.

Results: Data-saturation was reached after including n=12 patients and n=16 HCPs. A large number of factors was categorised to 11 of the 14 TDF-domains, highlighting the complexity of influencing older adults' PA behaviour during hospitalisation.

Development and internal validation of a prediction model to identify older adults at risk of low physical activity levels during hospitalisation: a prospective cohort study

Aim: to develop and validate two prediction models that can be used early after admission to identify older adults at high risk of spending little time standing/walking during hospitalisation.

Methods: a prospective cohort study including n=165 older adults. Average time spent standing/walking was measured with an accelerometer. Predictors (SPPB, AM-PAC, age, sex, walking aid use, disabilities in ADL) were analysed using logistic regression analysis. Models were internally validated and model performance was quantified.

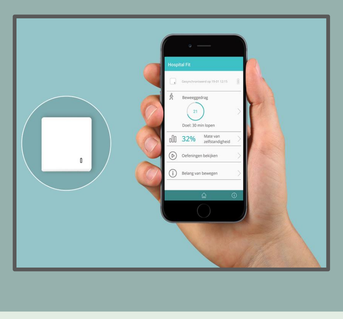
Results: Model 1 predicts a probability of spending ≤64.4 min. standing/walking and includes SPPB, AM-PAC and sex. Model 2 predicts a probability of spending ≤47.2 min. standing/walking and holds predictors SPPB, AM-PAC, age and walking aid use. Both demonstrate near perfect calibration, good overall performance and good discriminative ability.

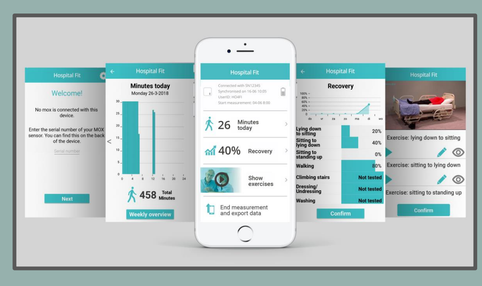
Smartphone app with an accelerometer enhances patients' physical activity following elective orthopaedic surgery: a pilot study

Aim: to investigate the potential of Hospital Fit, a smartphone app connected to an accelerometer, to enhance PA levels and functional recovery following orthopaedic surgery.

Methods: PA was measured with an accelerometer postoperatively until discharge. The control group received usual care physiotherapy, the intervention group used Hospital Fit additionally. Time spent standing/walking and functional recovery (mILAS) on postoperative day one (POD1) were measured.

Results: n=97 patients undergoing total knee or hip arthroplasty were included. Hospital Fit use, corrected for age, resulted in an average increase of 28.43 min. (95% CI 5.55-51.32) standing/walking on POD1. Hospital Fit demonstrates potential to enhance patients' PA levels and functional recovery during hospitalisation.





Optimisation and validation of a classification algorithm for assessment of physical activity in hospitalised patients

Aim: to optimise and validate a classification algorithm that discriminates between sedentary, standing and dynamic activities, and records postural transitions in hospitalised patients under free-living conditions.

Methods: optimisation and validation in comparison to video-analysis were performed in orthopaedic and acutely hospitalised elderly patients with an accelerometer worn on the upper leg. The algorithm was optimised in n=25 patients and validated in n=25 other patients. Sensitivity, specificity, accuracy and (absolute) percentage error were used to assess the algorithm performance.

Results: Validation of the optimised algorithm showed that all activities were classified within acceptable limits except for the classification of standing. The algorithm is considered suitable for classifying PA in hospitalised patients.

Conclusion

This thesis has resulted in an increased understanding of factors influencing the PA behaviour of hospitalised patients and has provided valuable contributions to improve patients' PA behaviour during hospitalisation.

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