

Einsatz von Smartwatches zur Erfassung der körperlichen Aktivität bei Patienten mit Kopf-Hals-Tumoren - eine Machbarkeitsstudie (MOVE-1)

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Abstract Text

Background: Structured exercise interventions benefit patients with head and neck cancer (HNC), especially in post-treatment care. However, few engage in physical activity per cancer survivorship guidelines. Consequently, the question arises as to how they can be encouraged sufficient daily activity. The MOVE-1 study evaluated whether smartwatches could support this process.

Methods: MOVE-1 was a prospective study (DRKS00032658, recruitment 5/24-11/24) that intended to investigate the feasibility of smart watches usage in HNC patients. Patients in post-treatment care were supposed a smart watch continuously for one week 24/7 (Maximum wear time 168 hours). Heart rate and step count were recorded. This parameters were visible to participants via the device's display functions. Recruitment rate, adherence (based on heart rate data), display function use (4-point Likert scale), and user satisfaction (System Usability Scale (SUS)) were assessed. Demographic and clinical data were collected. Screened patients who neglected to participate in the study were analyzed separately (age, gender, and reasons for refusal).

Results: The recruitment rate was 50%. The proportion of men was significantly higher in the non-participant group compared to the participant group (76.5% vs. 52.8%, $p=0.039$), while there was no significant difference in age between the two groups. Main reasons for non-participation included lack of interest, independent activity, time constraints, and low technology affinity. A total of 35 patients (median age 63 year, ranging from 50 to 77) were enrolled. The mean wearing time of the smartwatch was 118/168 h (71%). The median step count was 7,298/day. 60% used the display function "often" or "very often". The user satisfaction was considered as good by the participants (mean SUS score 74, percentile rank of 69). Most dissatisfactions were reported in regards to the wristband (comfort, handling); three participants reported difficulties in operation the smartwatch.

Conclusion: The high adherence supports the suitability of a smartwatch for tracking activities and vital parameters, but a different wristband should be used. The number of steps taken over seven days indicates that the HNC patients reached by the study are more physically active than average. The results of the study justify conducting intervention studies with the aim of increasing the physical activity of HNC patients through the use of smartwatches.

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