

Effectiveness of telemedical support during chemotherapy. Randomized controlled trial eSMART

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Introduction

Every year, about 42,000 people in Austria are diagnosed with cancer, healthcare costs are rising steadily. Therapy options become more sophisticated and complex, survival is improving, physicians and nurses face challenging tasks. Health-related quality of life is frequently impaired during cancer treatment impacting adherence and rehabilitation. eHealth technologies offer an opportunity to be supportive for both patients and health care professionals. Aim is to make a timely contribution to the understanding, need and implementation of eHealth applications in healthcare.

Advanced Symptom Management System



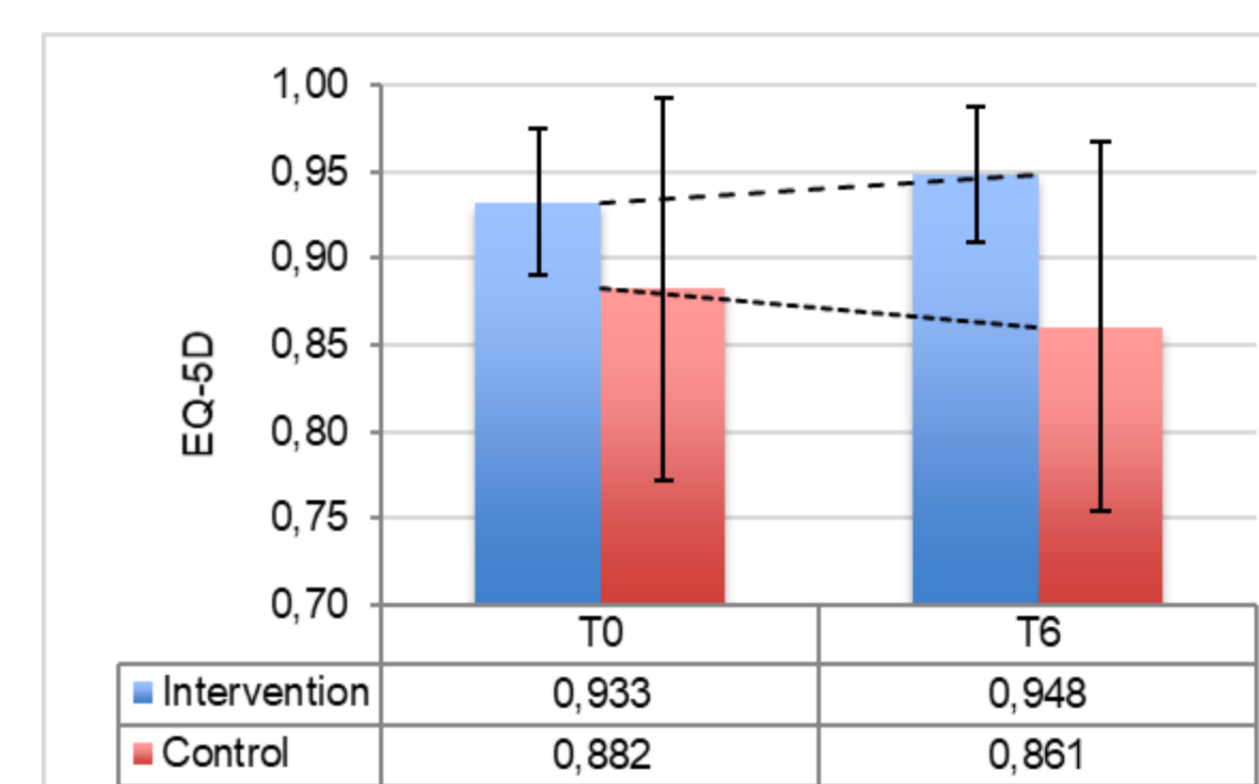
Methods

We assessed the effects of telemedical support comparing intervention and control groups in a randomized, controlled pretest-posttest design and a longitudinal study. The intervention group received a smartphone-like medical device using ASyMS (Advanced Symptom Management System) consisting of daily symptom management and assessment in the active phase (P-1). The follow-up phase (P-2) was without telemedical support. This monocentric study, based on a total of 140 participants, is embedded within a larger international survey. Assessment of change was based on inferential statistical analysis using the per protocol approach. Patient-reported outcome measures (PROMs) were administered to assess health-related aspects and quality of life outcomes. To determine treatment outcome, rmANOVAs were used to obtain standardized effect sizes, with changes in the control group included as a treatment-independent trend.

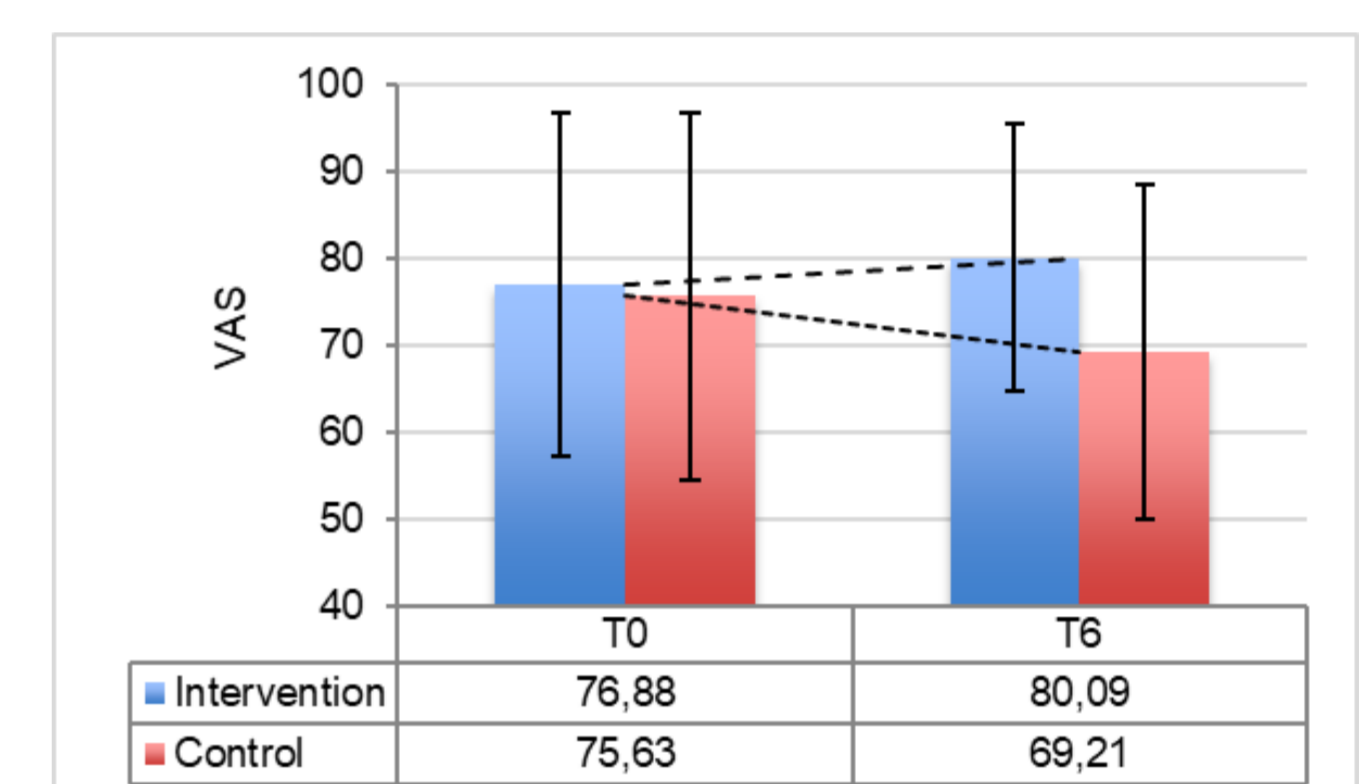
Results

Within P-1, study data demonstrated significant effects of telemedical support during chemotherapy on quality of life (EQ-5D), well-being (FACT-G) and health status (VAS) ($d' = 0.46 - 0.55$) as well as for self-efficacy (CASE-cancer) and work ability (WLQ) ($d' = 0.21 - 0.25$).

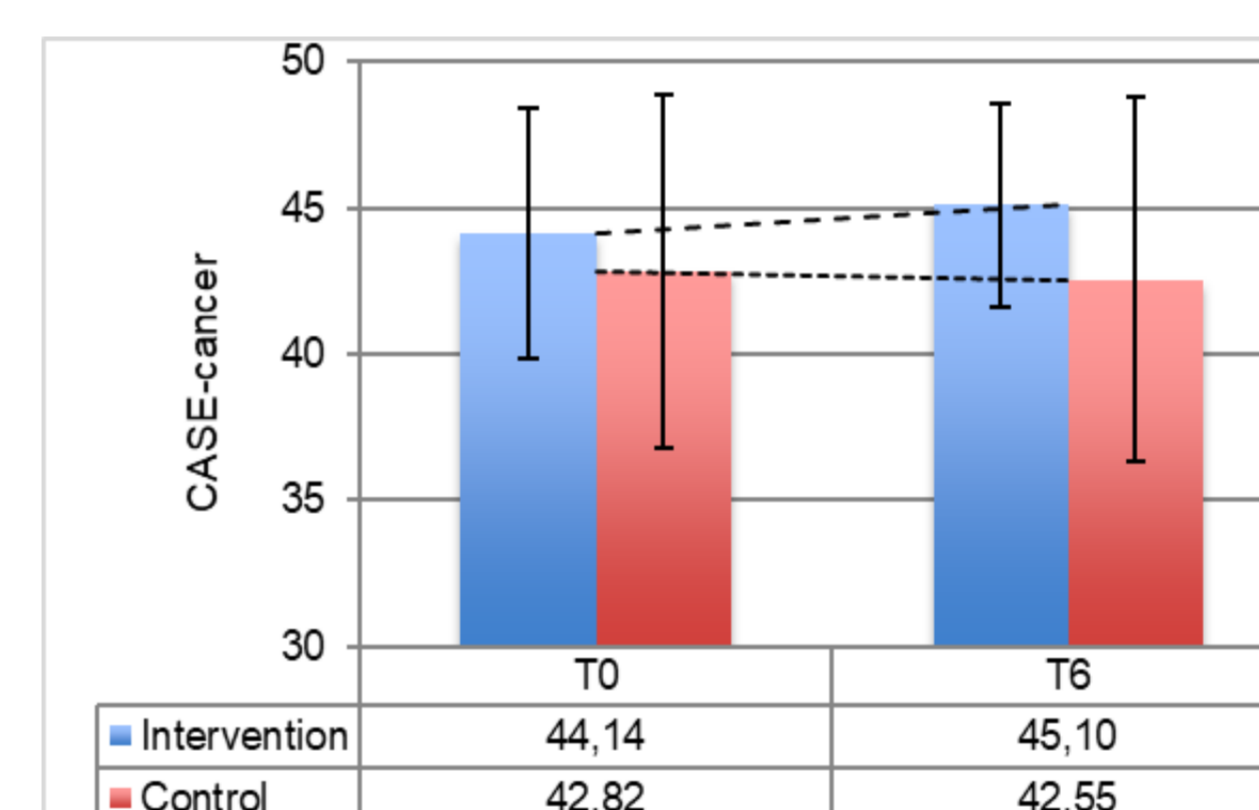
Characteristic values ($M \pm 1$ SD) of EQ-5D, FACT-G, CASE-cancer and WLQ development within active phase T0 - T6 with linear trend lines:



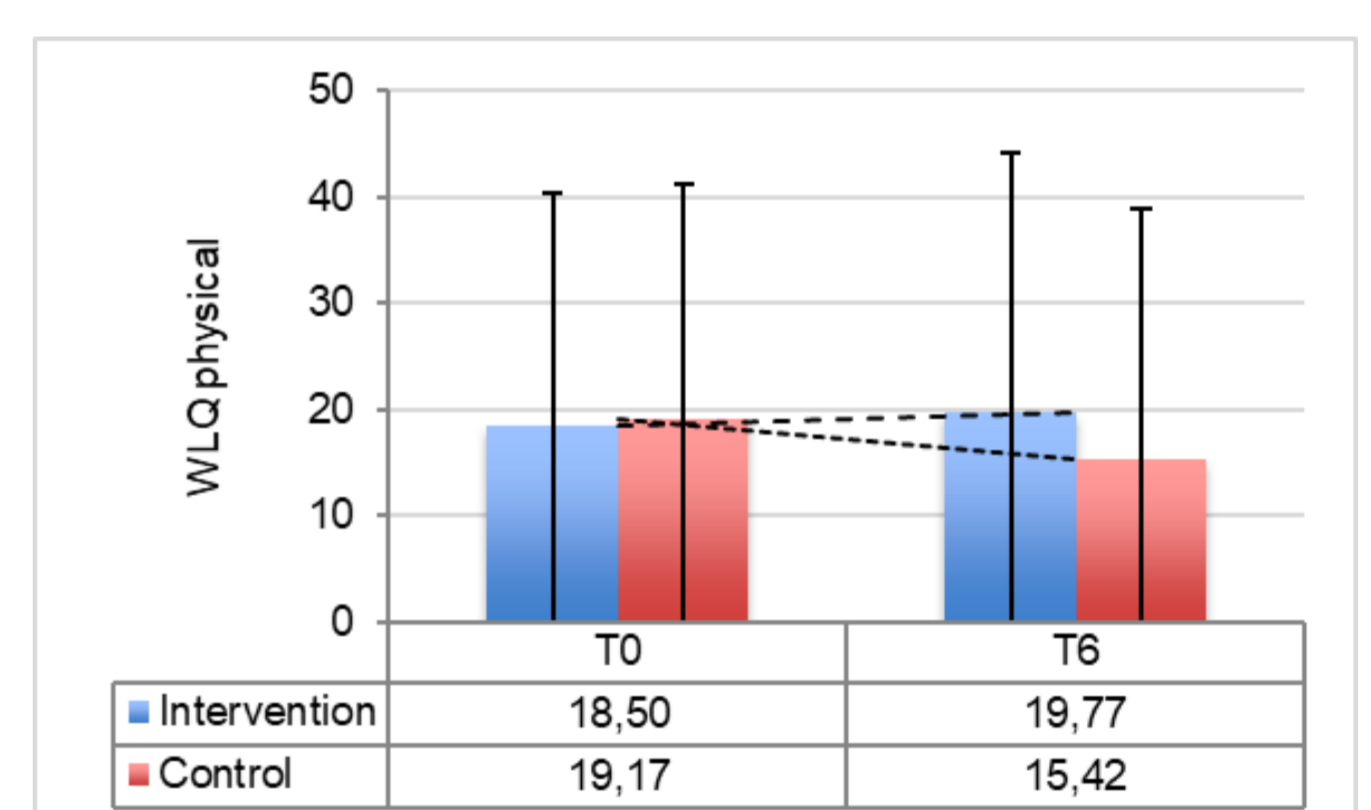
Change of quality of life, small to moderate effect $d' = 0.46$



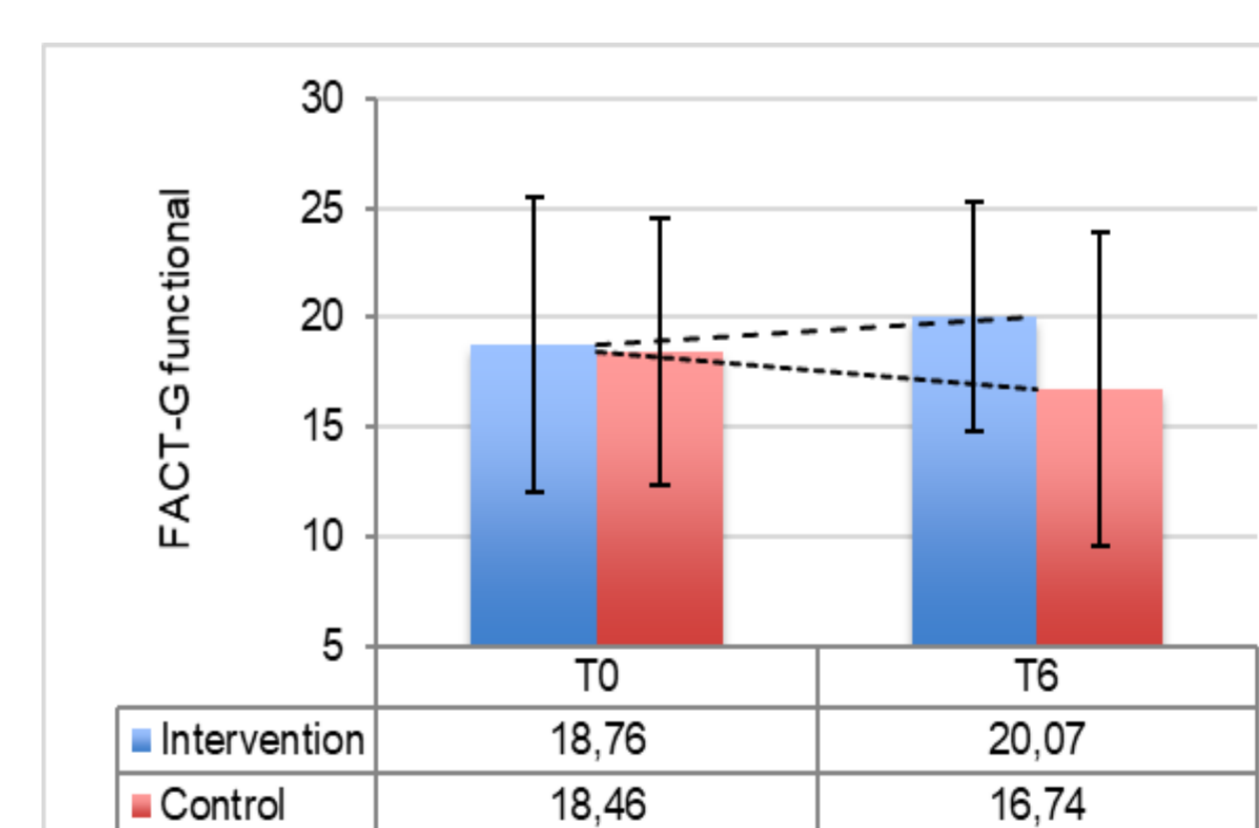
Change of daily health status, moderate effect $d' = 0.55$



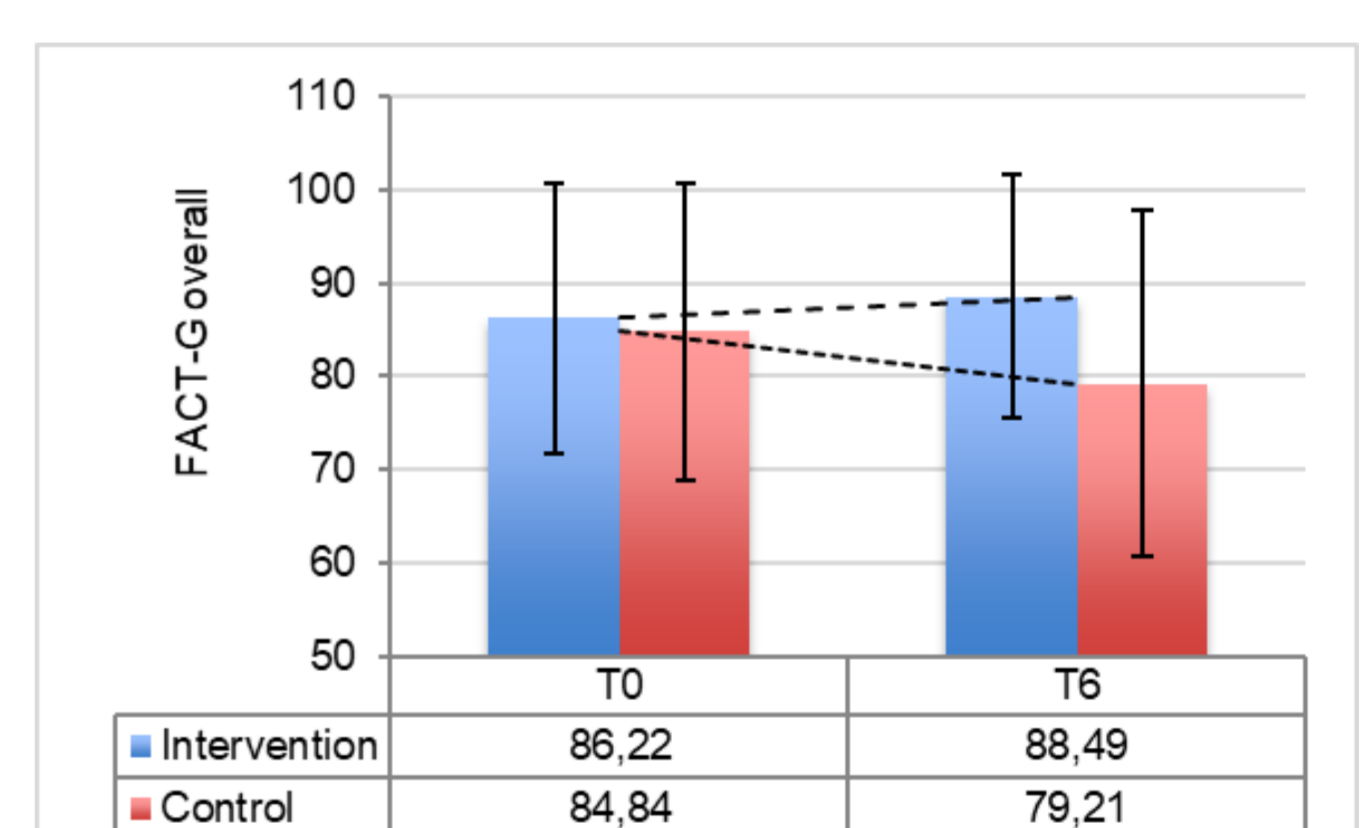
Change of self-efficacy, low effect $d' = 0.25$



Change of physical requirements, small effect $d' = 0.21$



Change of functional well-being, small to moderate effect $d' = 0.48$



Change of health-related quality of life, small to moderate effect $d' = 0.48$



Conclusion

The results demonstrate the effectiveness of telemedical support during chemotherapy enhancing quality of life and supporting cancer patients' adherence through the possibility of 24/7 support, as well as providing an opportunity to reduce healthcare costs and burden on clinical staff.

Funding

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References

Maguire, R. et al. (2021) 'Real time remote symptom monitoring during chemotherapy for cancer: European multicentre randomised controlled trial (eSMART)', BMJ, p. n1647. doi: 10.1136/BMJ.N1647