M U N I

COMMENTARY TO HABILITATION THESIS[1]

PHYSICAL ACTIVITY AND TRAINING IN PATIENTS WITH HEART DISEASE: DEVELOPMENT OF CARDIAC TELEREHABILITATION

[The development of alternative models, such as cardiac telerehabilitation (CTR), which have the potential to overcome barriers and increase the utilization of cardiac rehabilitation (CR) programs, is a challenging task in patients with heart disease and requires a comprehensive approach. This habilitation thesis is a collection of studies focusing on exercise training in cardiac disease and cancer patients. The thesis describes the importance and core components of CTR and discusses its implications for clinical practice and recommendations for further development. After an introductory section, a current review of CTR issues is described. This section is followed by the rationale and protocol design of a randomized control trial of CR based on telemedicine in the Czech Republic. The next chapter presents two studies that summarise the feasibility, effectiveness, and safety of CTR. The long-term effects of CTR are discussed in the following section, where the intervention effects on cardiorespiratory fitness and patients' quality of life are shown. The health benefits of CR and its use during the covid-19 pandemic are discussed in the next section, including an alternative study integrating a walking test and CTR in patients with coronary artery disease. In addition, a critical summary of exercise-based CR programs in the covid-19 era is provided in the next section. The final chapter is devoted to integrating the CTR approach into supportive cancer care. This section presents a systematic review of aerobic and resistance interventions in the home-based setting and the rationale for the future integration of telerehabilitation into supportive care for cancer patients and survivors within the emerging field of cardio-oncology.]

[1][2] Batalik, L., Filakova, K., Batalikova, K., & Dosbaba, F. (2020). Remotely monitored telerehabilitation for cardiac patients: A review of the current situation. *World Journal of Clinical Cases, 8*(10), 1818-1831. doi: 10.12998/wjcc.v8.i10.1818

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
70%	50%	75%	75%

[2] Batalik, L., Dosbaba, F., Hartman, M., Batalikova, K., & Spinar, J. (2018). Rationale and design of randomized controlled trial protocol of cardiovascular rehabilitation based on the use of telemedicine technology in the Czech Republic (CR-GPS). *Medicine, 97*(37), e12385. doi: 10.1097/MD.0000000000012385

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
60%	60%	50%	70%

[3] Batalik, L., Dosbaba, F., Hartman, M., Batalikova, K., & Spinar, J. (2020). Benefits and effectiveness of using a wrist heart rate monitor as a telerehabilitation device in cardiac patients: A randomized controlled trial. *Medicine, 99*(11), e19556. doi: 10.1097/MD.0000000000019556

[1] The commentary must correspond to standard expectations in the field and must include a brief characteristic of the investigated matter, objectives of the work, employed methodologies, obtained results and, in case of co-authored works, a passage characterising the applicant's contribution in terms of both quality and content.
[2] Bibliographic record of a published scientific result, which is part of the habilitation thesis.

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
75%	60%	60%	70%

[4] Batalik, L., Pepera, G., Papathanasiou, J., Rutkowski, S., Líška, D., Batalikova, K., Hartman, M., … Dosbaba, F. (2021). Is the Training Intensity in Phase Two Cardiovascular Rehabilitation Different in Telehealth versus Outpatient Rehabilitation? *Journal of Clinical Medicine, 10*(18), 4069. doi: 10.3390/jcm10184069

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
75%	40%	60%	60%

[5] Batalik, L., Dosbaba, F., Hartman, M., Konecny, V., Batalikova, K., & Spinar J. (2021). Long-term exercise effects after cardiac telerehabilitation in patients with coronary artery disease: 1-year follow-up results of the randomized study. *European Journal of Physical and Rehabilitation Medicine, 57*(5), 807–814. doi: 10.23736/S1973-9087.21.06653-3

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
70%	50%	70%	70%

[6] Batalik, L., Konecny, V., Dosbaba, F., Vlazna, D., & Brat, K. (2021). Cardiac Rehabilitation Based on the Walking Test and Telerehabilitation Improved Cardiorespiratory Fitness in People Diagnosed with Coronary Heart Disease during the COVID-19 Pandemic. *International Journal of Enviromental Research and Public Health, 18*(5), 2241. doi: 10.3390/ijerph18052241

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
70%	50%	80%	75%

[7] Stefanakis, M., Batalik, L., Papathanasiou, J., Dipla, L., Antoniou, V., & Pepera G. (2021). Exercise-based cardiac rehabilitation programs in the era of COVID-19: a critical review. *Reviews in Cardiovascular Medicine, 22*(4), 1143–1155. doi: 10.31083/j.rcm2204123

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
25%	25%	25%	25%

[8] Batalik, L., Winnige, P., Dosbaba, F., Vlazna, D., & Janikova, A. (2021). Home-Based Aerobic and Resistance Exercise Interventions in Cancer Patients and Survivors: A Systematic Review. *Cancers, 13*(8), 1915. doi: 10.3390/cancers13081915

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
70%	30%	70%	60%

[9] Batalik, L., Filakova, K., Radkovcova, I., Dosbaba, F., Winnige, P., Vlazna, D., Batalikova, K., … Pepera, G. (2022). Cardio-oncology rehabilitation and telehealth: Rationale for future integration in supportive care of cancer survivors. *Frontiers in Cardiovascular Medicine, 9*, 858334. doi: 10.3389/fcvm.2022.858334

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
50%	50%	50%	70%

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