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# Clinical and Cost Effectiveness of Telerehabilitation System in Balance Disorder Patients

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## Abstract

Balance disorders are a very common consequence of brain damage. Most of these conditions have a chronic nature and require long-term rehabilitation care. Telerehabilitation using the Homebalance system is a suitable alternative or complement to standard rehabilitation. The aim of this study is to evaluate the clinical and cost effectiveness of the Homebalance system in telerehabilitation. The study involved 33 patients who were randomly divided into two groups. The intervention group underwent a 4-week telerehabilitation therapy using the Homebalance system. The comparison group received standard in-person rehabilitation care of the same length. Clinical effectiveness was assessed using the standardized Berg Balance scale test. Quality of life was measured using the EQ-5D-5L questionnaire. The cost part of the study was evaluated from a healthcare payer perspective. Clinical effectiveness of the telerehabilitation was demonstrated by difference in the pre-post BBS scores ( $p < 0,001$ ), which was comparable to the effectiveness of standard therapy ( $p = 0,52$ ). No significant changes were observed in the patient's quality of life during the therapy. The costs of the experimental intervention were estimated at CZK 7,152, while the costs of the comparator were estimated at CZK 9,424. Telerehabilitation brings many benefits for patients allowing to undergo therapy from the comfort of their homes. The results of this study have shown that telerehabilitation using the Homebalance system is clinically effective, and also cost-effective.

*Keywords: telerehabilitation, balance disorders, homebalance, cost-effectiveness analysis, telerehabilitation systems*



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