AUTHORS: Hickey, Molly A.\textsuperscript{1}; Coon, Hayley E.\textsuperscript{1}; Cannon, Lawrence\textsuperscript{1}; Maturo, Kenneth J.\textsuperscript{1}; Ryan, Adam\textsuperscript{1}; Scheminger, Ryan\textsuperscript{1}


Purpose/Hypothesis: Home telemonitoring has been in existence in one form or another for over 40 years, but the application in medicine has been fairly narrow. The population is aging, and chronic disease management has led to individuals living much longer with a greater level of morbidity for many years. A number of studies have investigated telemedicine as it relates to care provided by physicians and nurses, there is a shortage of research on telemedicine care provided by physical therapists. Many studies have been done to identify changes in readmission rates, cost effectiveness and the change in quality of life as a result of telemedicine.

Number of Subjects: 14

Materials/Methods: A comprehensive literature search was conducted using PubMed, CINAHL, Cochrane, DARE, and PsychInfo electronic databases. Relevant randomized clinical trials published within the last ten years (2005-2015) were obtained. A total of 14 full-text studies for full review. Two groups of independent reviewers were given seven studies each and asked to apply the PeDro rating scale for quality. The independent reviewers presented each study head-to-head, and if there was disagreement on the quality, a third independent reviewer solved the dispute.

Results: Because of the heterogeneity of methods and outcomes, a best evidence synthesis was conducted. Evidence was summarized for the outcome categories representing utilization of health care resources (as measured by visits to the ED, hospital readmissions, or economy of telemedicine over standard care), and quality of life as measured by a variety of instruments.

Conclusions: While the review indicates that there is some evidence of the promise of approaches utilizing telemedicine to improve utilization costs and quality of life, there was a lack of similarity in methods and outcomes in the available studies which precludes the ability to confirm with great authority the magnitude of positive treatment effects or cost-effectiveness. Future studies with more streamlined methods and consistent outcome measures are needed to validate the inferences drawn from the best evidence synthesis conducted here.
Clinical Relevance: There is increasing pressure for alternative methods for management of patients with a variety of chronic co-morbid disease processes. Telemedicine represents an exciting opportunity for use by physical therapists. Physical therapists can have a pivotal role in the overall management of individuals with chronic diseases and multiple chronic co-morbidities. Harnessing the potential of technology to deliver care from remote locations could be a game changer in the future of our profession. Acute Care therapists could take the lead in hand-off care to partners in the community, as well as assist with transitional care after discharge, potentially reducing the frequency of readmission for individuals with chronic conditions.