

Evidence Review

Telehomecare for Heart Failure Patients – Executive Summary

Heart Failure (HF) is the fourth most common chronic disease in Canada¹ with an estimated 500,000 Canadians living with heart failure and about 50,000 new diagnoses every year.² In the next 30 years, it is expected that the number of Canadians with HF will double.³

Elderly, HF patients typically suffer from unstable health because 45% of them live with more than five other chronic conditions⁴. This makes it difficult for patients to manage their primary disease, because their ability to self-manage declines as the number of comorbidities increases.⁵ In addition, 68% of HF, home care patients in Ontario over the age of 65 are taking nine or more drugs at a time.¹ “However, only 29% are on the right medication regime; and another 29% are not getting any of the recommended drugs.”¹

These factors contribute to HF patients achieving suboptimal health outcomes, as well as being regular users of the acute healthcare system.⁶ It is evident there is an underlying need for a new form of care to keep these patients in their home; while reducing costly and potentially unnecessary hospitalizations. The literature suggests that Telehomecare (THC) may be an effective strategy to reduce the burden of HF patients on the Canadian healthcare system and keep patients living with better health, at home.⁷⁻¹⁸

Potential Benefits

A systematic review⁷ found that THC is appropriate for HF because it requires close monitoring and a quick intervention. Findings from two meta-analysis suggest that THC used with older patients with chronic diseases such as HF can lead to improved clinical outcomes.^{13,18} The evidence also strongly suggests that THC:

- reduces rehospitalization^{7,9,10,15,16,18} in HF patients
- provides significantly higher access to care¹⁹, especially in rural areas
- demonstrates improvements in patient’s medication knowledge²⁰ and compliance^{21,22}, self-management^{7, 11}, quality of life^{9, 14-16}, patient satisfaction¹⁹ and acceptability of the intervention.^{9, 15,16}
- reduces emergency department (ED) visits¹⁸, length of hospital stay^{7,10,15,18}, mortality^{14,15,18}, all-cause mortality^{9,16} and the overall cost of HF patient care.^{9, 15,16}
- and most importantly, in the studies using THC interventions, no negative effects on patient health were identified.^{12,15,18}

Potential Issues

Some studies using THC as the intervention found no difference in terms of: hospitalization within 60 days²⁰, risk of readmission or death²³; number of ED visits²⁴ or all cause admission.⁹ A randomized controlled trial (RCT) reported THC had no additional effect on self-care, maintenance, management or confidence when compared with usual home care.¹⁰ A

second RCT showed no difference in the risk of hospitalization for HF, length of time spent in hospital, or the time to readmission or death.²³ In addition, mortality was higher in one THC intervention group.²⁴ One study found a decrease in medication behaviour among the intervention group²⁰, while other studies struggled with low patient acceptance of¹⁹, and adherence to²³, the THC intervention. A systematic review¹⁸ associated THC with increased primary care visits, specialist visits and home care visits.

Factors Limiting Success

Several authors attempted to explain why their interventions were not successful. The lack of effectiveness and patient adherence to an automated intervention underscore the need for more patient-clinician interaction.²³ In addition, “it is possible that including formal education, medication management, or peer support would have enhanced the effectiveness of the intervention.”²³ To explain declining medication behaviours, the authors suggested that having nurses check medication adherence and behavior by phone is more effective than using automated devices.²⁰ It is also possible that regular contact with a nurse increased patient awareness of symptoms and fostered a proactive, disease management attitude. This could lead to more hospitalizations or ED visits²⁴; as well as primary care, homecare and specialist visits.¹⁸

One RCT suggested that the monitoring equipment must be combined with a comprehensive program of heart failure disease management in order to be most effective.¹⁰ Nurses should also use various strategies to educate and ensure patients understand relevant health concepts by using the ‘teach back’ method.²⁵ Finally, the learning curve associated with THC technology for patients and providers could be affecting the effectiveness of the interventions.¹⁴ Therefore, nurses should be skilled telehealth or computer system users.¹⁰

Keys to Success

Authors attribute the success of their interventions to several key factors. Improved medication knowledge²⁰ and effective disease management¹⁵ of HF patients can be attributed to the regular monitoring and reviewing of blood pressure, weight and other vital signs with a specifically trained nurse. To effectively replace regular home visits with remote visits, nurses should be knowledgeable about HF management, as well as comfortable and competent using the THC equipment.¹⁹ It was suggested that the improved clinical outcomes are due to identification and intervention for clinical changes discovered by the regular monitoring of the patient’s clinical parameters.^{10,15} The authors of a systematic review¹⁶ suggest improved self-management and remote monitoring may be the reason these interventions are successful. In addition, adherence to the proper medication and treatment plans, as well as the patient having a positive outlook, are essential for HF patients in achieving positive outcomes.²⁶

The fact that HF patients often deal with multiple chronic diseases emphasizes the need for patient self-management during the interventions. The Canadian Heart Health Strategy and Action Plan recommends the use of the Chronic Disease Management model for HF patients²⁷, which has a strong focus on patient-centred disease self-care, incorporating both self-maintenance and self-management.⁴ To ensure the biggest impact on patient outcomes and the healthcare system, self-management “is likely to work best as part of a wider initiative to

improve care through educating practitioners, applying best evidence, and using technology, decision aids and community partnerships effectively.”²⁸ Patients who self-manage have reduced disease-related effects and can even change their use of the healthcare system because they can better monitor and respond to their changing symptoms and thus prevent certain health problems.²⁹

OTN has used what can be learned from the available literature and past experiences in their own pilot program to create a comprehensive, holistic THC program grounded in best-evidence. Our THC nurses are trained to specifically promote the recommended chronic disease management model, patient self-management and health coaching; using remote monitoring technology to track the patient’s health status. By targeting HF patients, who may potentially have other chronic diseases, we are providing these patients with a better chance of achieving self-management, which can lead to a higher quality of life. In addition, THC nurses collaborating with the patient’s primary care team will allow for the development of effective, proactive care plans and will improve HF management in Ontario. Finally, OTN was recently named as a Registered Nurses’ Association of Ontario Best Practice Spotlight Organization, ensuring all care plans are based on current, clinical best practices. Collectively, these factors will contribute to better health, at home for HF patients in Ontario.

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