

The addition of a home visit by a cardiac nurse to usual multidisciplinary care reduced deaths and readmissions in patients with chronic congestive heart failure

Stewart S, Marley JE, Horowitz JD. Effects of a multidisciplinary, home-based intervention on unplanned readmissions and survival among patients with chronic congestive heart failure: a randomised controlled study. *Lancet* 1999 Sep 25;354:1077-83.

QUESTION: In patients with chronic congestive heart failure (CHF) who are discharged home after acute admission, does the addition of a home visit by a cardiac nurse to usual multidisciplinary care reduce out of hospital deaths and unplanned readmissions?

Design

Randomised (concealed), blinded (outcome assessor), controlled trial with 6 months of follow up.

Setting

A tertiary referral hospital in Adelaide, South Australia, Australia.

Patients

200 patients ≥ 55 years of age (mean age 76 y, 62% men) who were to be discharged home, had CHF, and had ≥ 1 previous admission for acute CHF. Exclusion criteria were reversible ischaemia precipitating heart failure, valvular heart disease amenable to surgery, intended heart transplantation, terminal illness, or residence outside of the catchment area. Follow up was complete.

Intervention

100 patients were allocated to usual discharge care (appointment with primary care physician and/or cardiology outpatient clinic within 2 weeks of discharge and contact with a cardiac rehabilitation nurse, dietician, social worker, pharmacist, and community nurse, as needed). 100 patients were allocated to usual care plus a home based intervention, which included a structured home visit by a cardiac nurse 7-14 days after discharge. During this visit, the nurse did a physical examination and assessed patient adherence to treatment, understanding of disease, fluid and sodium intake, physical activity, and psychosocial and community based support. A report of the nurse's findings was sent to the primary care physician and cardiologist. If required, patients were referred for urgent medical treatment. On the basis of the nurse's assessment, patients received remedial counselling and strategies to address areas that needed attention. Home visits were repeated if patients had ≥ 2 unplanned admissions within 6 months. Patients were contacted by telephone at 3 and 6 months.

Main outcome measure

The primary endpoint was combined frequency of unplanned readmissions plus (all cause) out of hospital deaths.

Main results

88 of 100 patients assigned to the home based intervention received a home visit; median duration was 2 hours. At 6 months, the home based intervention group had fewer primary events (unplanned readmissions plus out of hospital deaths) (77 v 129, $p = 0.02$), fewer unplanned readmissions (68 v 118, $p = 0.03$), and fewer associated deaths in hospital (460 v 1174 d, $p = 0.01$) than did the usual care group. The groups did not differ for out of hospital deaths (9 v 11, [$p = 0.64$]*).

Conclusion

In patients with congestive heart failure who were discharged home, the addition of a home visit by a cardiac nurse to usual multidisciplinary care reduced the combined endpoint of out of hospital deaths and unplanned readmissions.

* p -value calculated from data in article.

COMMENTARY

The unpredictability of managing the illness trajectory of patients with CHF is well established. This study by Stewart *et al* showed that a home visit by a cardiac nurse within the first 2 weeks of discharge, along with the consequent multidisciplinary interventions, reduced the combined endpoint of unplanned hospital readmissions and out of hospital deaths. The consistency of Stewart *et al*'s findings with existing literature¹⁻² adds credence to their results.

The specific effective ingredient in the home based intervention is unclear, although it is possible to suggest plausible mechanisms. On the basis of the nursing assessment, patients and their families received a combination of counselling, strategies to improve treatment adherence, suggestions for a simple exercise regimen, and recommendations for regular monitoring (eg, daily weighing). Reports based on the nursing assessment were sent to primary care physicians and the nurse, in consultation with the physician, arranged a flexible diuretic regimen based on patient symptoms and weight. Perhaps the observed difference in outcomes was the result of improved medication adherence, improved knowledge, perceived social support, assistance to family caregivers, or some combination of actions and treatments.

This study adds to accumulating evidence about the benefits of home based interventions provided by nurse specialists. Such interventions appear to have the potential to reduce morbidity and hospital costs. Patients with CHF could benefit greatly from the nursing and multidisciplinary interventions provided in the study by Stewart *et al*. Nursing research to examine the effect of similar interventions in other situations where patients are managing long term chronic illnesses is warranted. As well, research that focuses on identifying the specific nature, frequency, and intensity of the actions that comprised the nursing intervention would increase the usefulness of the findings to practice.

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- 1 Rich MW, Beckham V, Wittenberg C, *et al*. A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *N Engl J Med* 1995;333:1190-5.
- 2 Stewart S, Pearson S, Luke CG, *et al*. Effects of home-based intervention on unplanned readmissions and out-of-hospital deaths. *J Am Geriatr Soc* 1998;46:174-80.

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