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Caregiver coaching program effect: Reducing heart failure patient rehospitalizations and improving caregiver outcomes among African Americans

Ubolrat Piamjariyakul, PhD, RN [a,*], Marilyn Werkowitch, BSN, RN [a], Jo Wick, PhD [b], Christy Russell, RN, ARNP [c], James L. Vacek, MD, MS [c], Carol E. Smith, PhD, RN, FAAN [d]

[a] University of Kansas Medical Center, School of Nursing, 3901 Rainbow Boulevard, Mail Stop 4043, Kansas City, KS 66160-7502, USA
[b] University of Kansas Medical Center, Department of Biostatistics, USA
[c] University of Kansas Hospital, Mid America Cardiology, USA
[d] University of Kansas Medical Center, School of Nursing, Preventive Medicine and Public Health, USA

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ABSTRACT

Objectives: (1) Test whether FamHFcare intervention could reduce patients' heart failure (HF)-related rehospitalizations and improve family caregiver outcomes; (2) calculate effect size on caregiver outcomes; and (3) evaluate the FamHFcare.
Background: Few interventions target family caregivers for HF home care.
Methods: This study was a mixed method design with stratification and random assignment of 20 African American HF patient/caregiver dyads. Descriptive, univariate parametric/non-parametric, and post-hoc analyses were used.
Results: At 6 months, compared to standard care, the intervention group had significantly fewer HF rehospitalizations (M–W $z = -1.8$, $p = 0.03$), while caregiver confidence (M–W $z = 2.8$, $p = 0.003$) and social support scores (M–W $z = 2.4$, $p = 0.01$) were significantly higher, and caregiver depression (M–W $z = -2.4$, $p = 0.01$) were significantly lower. Caregivers rated the FamHFcare as helpful (M = 46.8 ± 4.1).
Conclusions: The FamHFcare intervention was associated with fewer HF patient rehospitalizations and improved caregiver outcomes.

Introduction

Heart failure (HF) is a devastating disease that affects approximately 5 million Americans and it is projected that there will be a 23% increase in prevalence by 2030.[1] HF is one of the most expensive illnesses for our society, costing over $31 million annually.[2] Compared to the majority group, African Americans are disproportionately affected by HF due to unique biological factors and social determinants of health such as higher prevalence of HF at younger ages of hypertension, diabetes and frequent delays in access to treatment,[3–5] resulting in greater depression,[6] mortality,[7,8] severe complications and rehospitalizations.[9,10]

National guidelines consider the involvement of family member caregivers to be possibly the most effective but least used intervention,[11,12] yet few interventions target family caregivers and do not address caregiver burden or preparedness for home care.[13–16] Meta-analyses and clinical management reviews also demonstrate that few HF intervention studies are culturally sensitive and do not guide HF home management strategies.[17,18] Recent reviews have found most HF interventions are resource intensive, do not include caregivers and do not reduce HF patient rehospitalizations.[19–21] Notably, HF rehospitalization is often related to excess dietary sodium, fluid weight gain, and poor medication adherence[8]; which family caregivers can help patients to avoid. Another rationale for the caregiving intervention is the negative impact of providing complex home care[22]; which is known to result in caregivers' poor physical and mental health[23,24] Thus it is imperative to develop interventions that use

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* Corresponding author.
E-mail address: upiamjariyakul@kumc.edu (U. Piamjariyakul).

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culturally sensitive approaches that target African American caregivers.[25]

A culturally sensitive consideration for this intervention is that older patients and African Americans are more likely to participate in telephone coaching interactions and have access to telephones rather than computers or Internet connection.[26] Thus telephones were selected for ease of access and delivery of the interventions and low cost. A PubMed search revealed that telephones are successful delivery methods for interventions.[27–29] Our early coaching study, tested with 40% African Americans in the sample, established that our telephone HF home care coaching program (FamHFcare) is feasible.[30] Specifically, the telephone coaching methods were highly evaluated as preferable, convenient, and without burden or difficulty and were also rated by nurses as translatable into practice. Thus this current study is based on findings from previously reported studies and updated literature reviews.[31–33]

The FamHFcare intervention tested in this study included four weekly telephone coaching sessions with family caregivers. Topics include: (1) motivating involvement in their home HF plan of care such as medication adherence and following fluid and sodium restrictions; (2) developing skills to manage HF daily care; (3) coaching on managing caregiver stress and burden, and seeking professional help; (4) preparing for emergencies and sensitive end-of-life discussions.

Purposes

The purposes of the pilot study with African Americans were to: (1) test whether a culturally-sensitive telephone coaching intervention could reduce patients' HF-related rehospitalizations and family caregiver burden and depression, and increase family caregiver confidence, social support, and preparedness; (2) evaluate effect size of caregiver outcomes; and (3) evaluate the caregivers' and nurses' perceptions of the intervention.

Conceptual framework

A coaching by health professionals framework guided the design of the culturally sensitive FamHFcare intervention. As described in detail elsewhere,[30] this framework is composed of three constructs: (1) strategies of coaching (i.e., teaching, teach-back,[34,35] reinforcing family partnerships with professionals, and motivating caregiver involvement[36] in HF home care, and seeking social support from family members or others) which are associated with intermediate and long-term outcomes; (2) intermediate outcomes (i.e., improving confidence and preparedness for HF home care); and (3) long-term outcomes (fewer patient HF rehospitalizations, and reduced caregiving burden and depression).

Hypotheses and research questions

The following directional hypotheses and research questions were tested:

Hypothesis 1. At 6 months after intervention completion, the frequency of HF-related hospitalizations for patients of the caregivers who received the FamHFcare intervention is significantly lower than for those in the standard care group when compared to baseline.

Hypothesis 2. At 6 months after intervention completion, the caregivers who received the FamHFcare intervention report significantly higher scores on caregiver confidence, preparedness for HF home care, and perceived social support, and lower caregiving burden and depression measures when compared to baseline. Effect size of these caregiver outcomes will be determined.

Additional research questions were: (1) Did the African American family caregivers completing the coaching program rate the program as helpful for home HF care? (2) What were the most common topics in the coaching program for which African American family caregivers need reinforcement (measured via nurse's behavioral checklist)?

Methods

Design

This study used a mixed method design with stratification on the patients' length of HF diagnosis[37] and random assignment of African American HF dyads (20 patients, 20 caregivers) to the intervention or standard care groups. Length of HF diagnosis was a key characteristic that is associated with greater HF-related rehospitalizations and caregiving burden.[23] Stratification on length of HF diagnosis avoided selection bias and internal validity threats in this small sample.[38]

Sample size and setting

Patients

Included were adult African American patients who had HF systolic and diastolic dysfunction and ejection fractions less than 40%.[39] Excluded were patients who had received or were on a waiting list for a heart transplant, or patients with terminal illness or dementia (i.e., Alzheimer's disease). *Caregivers* were those designated by the HF patient as a non-paid primary person who assisted the patient on a daily basis. Family members with a disability that precluded their use of the FamHFcare materials were excluded. Both patients and family caregivers provided consent and were able to read and write in English.

The sample size in this study was based on results in our previous studies detecting differences between two randomly assigned groups on patients' breathlessness[32] and HF rehospitalizations.[40] For those studies using Type 1 error alpha at 0.05 and power at 0.80, 10 patients per group was needed.[41] Our feasibility study also found that 10 dyads detected differences in caregivers' confidence in HF home care.[30] Further, our past results aligned with national findings that 40–60% of HF patients without interventions have a readmission for HF within 12 months.[19] With such high frequencies of rehospitalizations and based on our past detection of differences, 20 dyads was determined to be sufficient to detect differences on the patients' HF rehospitalization and caregivers' confidence in this study.

This study was conducted through an outpatient cardiology HF follow up clinic in a Midwestern medical center. Potential patients were identified prospectively by the Mid-America Cardiology nurse practitioner who reviews electronic medical records for all of their 40 cardiologists on a daily basis. The nurse practitioner then met with patients and/or family caregivers to explain the study and asked permission for our research staff to contact them for consent and enrollment in the study. Both patients and family members were invited to participate, and no dyads who were approached declined. Thus participant eligibility screening and initial contact was done by personnel who already have access to patient records and have a clinical relationship with the patients and their families, consistent with HIPAA.[42] Out of approximately 120 eligible patients, the first twenty patient and family caregiver dyads contacted