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The Characteristics of Pain in Patients Diagnosed with Depression and Heart Failure

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Abstract:

Heart failure (HF) is a costly and growing health problem that is routinely complicated by chronic pain and depression. The purpose of this paper is to describe the characteristics of pain and pain management in depressed HF patients. In this descriptive cross-sectional study, we analyzed data from 62 participants with depression and class II-IV HF. Study variables of interest were collected from the Brief Pain Inventory, Beck Depression Inventory, and Rand-36. Almost all participants (98%) had some pain in the past month and most had pain in the last 24 hours (66%). The median pain score was 4 (0-10 scale) with the majority reporting moderate to severe pain. The median pain interference score was 4.42 (0-10 scale) with the majority reporting moderate to extreme interference. Medication to treat pain was used by all participants who reported pain, with only 5% also using nonpharmacologic treatment. The majority of participants reported moderate or severe pain while also having moderate to extreme pain interference. Nonpharmacologic pain treatments were severely underused. Women were more likely to have higher levels of pain intensity and more pain interference than men, suggesting that additional screening for the impact of pain is especially important in women. The wide variety of body areas affected, along with moderate to high intensity pain and considerable interference scores reported, indicate that pain was ineffectively treated. Nonpharmacologic treatments should be considered to decrease the impact of pain.

INTRODUCTION

Heart failure (HF) is a costly and growing health problem that is routinely complicated by chronic pain and depression (Evangelista, Sackett, & Dracup, 2009).

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Noncardiac pain is not routinely assessed by cardiac health care providers, but is present in the majority (67%) of patients with HF and is common in all stages of HF (Evangelista et al., 2009). The most common causes of noncardiac pain are degenerative joint disease and arthritis (Evangelista et al., 2009; Goodlin et al., 2012; Hunt et al., 2009). Musculoskeletal pain is commonly treated with prescription and over the counter nonsteroidal anti-inflammatory drugs (NSAIDS). NSAIDS are contraindicated in HF patients due to increased fluid retention, edema and increased blood pressure leading to increased hospitalizations (Hillis, 2002). Also, NSAIDS increase the risk of additional cardiac events so much so that the U.S. food and drug administration has strengthened the warning label on NSAIDs (Hossain, 2015; Ong, Ong, Tan, & Chean, 2013).

Depression is common among patients with HF, as 22 to 42% are diagnosed with clinically significant depression (Rutledge, Reis, Linke, Greenberg, & Mills, 2006; Turvey, Schultz, Arndt, Wallace, & Herzog, 2002). With the addition of comorbid depression, HF patients have increased hospitalizations, poorer self-care behaviors, and higher rates of death (Kato et al., 2012). In a study examining the prevalence of pain in HF patients, 38% of HF patients had pain and depression which markedly increased illness burden (Goodlin et al., 2012; Poole, White, Blake, Murphy, & Bramwell, 2009). When depression is combined with HF and pain, patients are even less able to follow recommendations, treatment plans and engage in self-care behaviors, and length of time to treat chronic pain and depression is extended.

The purpose of this paper is to examine the characteristics of pain in patients with depression and HF. The main research questions (aims) include: (1) How many patients with HF and depression report pain and does pain presence differ based on demographic variables and health related characteristics? (2) What is the pain intensity and pain interference reported by depressed HF patients? (3) Is there a difference in pain intensity and pain interference based on depression level categories among HF patients? (4) What body areas do depressed HF patients report as causing pain? (5) What treatments do depressed HF patients use to manage their pain and what is their perceived effectiveness?

Design

The sample (n = 62) is a subset of participants who were enrolled in the COPE (Combined Illness Management and Psychotherapy in Treating Depressed Elders) trial from August 2012 through December 2014. The study is a two-arm randomized controlled trial in which the efficacy of an interpersonal psychotherapy-based treatment combined with chronic illness management is compared with a chronic illness management only. Participants were recruited from a tertiary medical center, Veterans Administration medical center, and federally qualified health center in the U.S. Midwest. Participants could also be referred from clinic personnel or self-refer from advertisements.

Participants

Patients were eligible for the study if they were 55 or older, diagnosed with heart failure (HF) or chronic obstructive pulmonary disease (excluded from this analysis), and endorsed depressive symptoms (scoring $\geq$10 on the Beck Depression Inventory II). Diagnosis of HF was based on radiographic evidence of an ejection fraction $\leq$40% or documented response to HF medication regimens based on chart review. Patients needed to present with functional impairment indicated by a score of $\leq$70 on the physical impairment subscale of the Rand Medical Outcomes Study 36-Item Short Form Survey Instrument (Rand-36).

Exclusion criteria included currently participating in psychotherapy (part of the study intervention), other significant psychiatric diagnoses (e.g., bipolar disorder, schizophrenia, substance abuse, etc.), suicidal ideation with plan or intent, cognitive impairment (documented in medical record or Mini-Mental State Examination score $\leq$ 23), awaiting transplant, residence in a long-term care facility, or significant hearing impairment that limited ability to participate in phone conversations (the study intervention is based on using the phone).

METHODS

In this descriptive, cross-sectional design, preintervention assessment data from depressed HF participants along with pain assessment scales were added to data collection instruments. All data were collected by research assistants who were trained and supervised by the principal investigator; all study procedures were approved by the affiliated Institutional Review Boards. Written informed consent for this secondary analysis was included as part of the parent project because the additional instruments were added to the original study procedure while recruitment was ongoing.

Instruments/Measures

The Beck Depression Inventory II (BDI-II) was used to assess level of depression. The BDI-II contains 21 questions that are scored on a scale value of 0-3 for a total score range of 0-63. The BDI is recommended for chronic pain clinical trials by the Initiative on Methods,