



# The Effectiveness of a Nurse-Led Cognitive–Behavioral Therapy on the Quality of Life, Self-Esteem and Mood Among Filipino Patients Living With Heart Failure: a Randomized Controlled Trial



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## ABSTRACT

**Aims/Objectives:** The diagnosis and complications associated with heart failure (HF) have been very well established to adversely impact an individual's physical and psychosocial well-being, and interventions such as cognitive–behavioral techniques have demonstrated potential positive benefits among patients with HF. However, the effects of such interventions among Filipino HF patients have not been studied. This study aimed to determine the effectiveness of a nurse-led cognitive–behavioral intervention program on the quality of life, self-esteem and mood among Filipino patients with HF.

**Methods:** A randomized control two-group design with repeated measures and collected data before and after the intervention was used in this study. Participants were assigned to either the control ( $n = 48$ ) or the intervention group ( $n = 52$ ). Control group participants received traditional care. Intervention participants underwent a 12-week nurse-led cognitive–behavioral intervention program focusing on patient education, self-monitoring, skills training, cognitive restructuring and spiritual development. Measures of quality of life, self-esteem and mood were obtained at baseline and after the intervention.

**Results:** At baseline, participants in both groups have poor quality of life, low self-esteem, and moderate depressive symptom scores. After the 12-week intervention period, participants in the intervention group had significant improvement in their quality of life, self-esteem and mood scores compared with those who received only standard care.

**Conclusion:** Nurse-led cognitive–behavioral intervention is an effective strategy in improving the quality of life, self-esteem and mood among Filipino patients living with HF. It is recommended that this intervention be incorporated in the optimal care of patients with this cardiac condition.

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## 1. Introduction

Cardiovascular diseases remain as the number one cause of mortality among Filipinos (Department of Health, 2011). According to the Philippine Society of Hypertension, 30% of all deaths in the Philippines are caused by heart and vascular diseases and according to the National Nutrition and Health Survey conducted in 2008, one in every four Filipino adults (25.7%) are hypertensive (Sy, Morales, Dans, et al., 2012). At present, one of the most devastating cardiovascular conditions affecting adults, in terms of long-term prognosis and economic impact, is heart failure (Cook, Cole, Asaria, Jabbour, & Francis, 2014). The American College of Cardiology Foundation/American Heart Association guidelines define heart failure (HF) as a complex clinical syndrome that results

from any structural or functional impairment of ventricular filling or ejection of blood (Yancy, Jessup, Bozkurt, et al., 2013). Immediate and long-term clinical effects of HF include left ventricular dysfunction that contributes to the significant reduction in cardiac output that appears to be responsible for debilitating symptoms such as dyspnea, restlessness, fatigue and weakness that these patients commonly experience (Witte & Clark, 2007). More importantly, HF significantly impacts an individual's physical and emotional functioning (Burke, Jones, Ho, & Bekelman, 2014), increases psychological distress and negatively affects mood (Moser, Dracup, Evangelista, et al., 2010), disrupts psychosocial adjustment (Carels et al., 2004), and ultimately leads to significant impairment in an individual's quality of life (Samartzis, Dimopoulos, Tziongourou, & Nanas, 2013).

In addition to conventional pharmacologic and medical therapies that are considered mainstay treatments in the management of patients with HF, interventions aimed on addressing the psychosocial, cognitive/informational, behavioral and emotional needs among patients with HF have been advocated by experts in the field (Gary, Dunbar, Higgins, Musselman, & Smith, 2010; Yancy et al., 2013). Studies have suggested

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that cardiac rehabilitation and disease management programs appear to be useful in improving functional capacity, exercise tolerance, quality of life, and mortality among patients with HF (Austin, Williams, Ross, et al., 2008; Kostis et al., 1994). More recently, cardiac rehabilitation programs targeting psychosocial factors in the form of a cognitive-behavioral therapy (CBT) has been previously shown to improve outcomes among patients with cardiovascular diseases, including those with coronary heart diseases (Gulliksson et al., 2011) and heart failure (Freedland, Carney, Rich, Steinmeyer, & Rubin, 2015).

CBT refers to a collection of therapeutic techniques and strategies that are used to alter behavior by teaching individuals to actively participate in understanding and modifying their own thoughts and behaviors. The central principle underlying CBT is that an individual's cognitive processes, in the form of perceptions, meanings, judgments and appraisals, play a significant role in the development and maintenance of one's emotional and behavioral responses to it (González-Prendes & Resko, 2012). Further, CBT is based on the premise that since cognitions can be intentionally changed, altered or modified through a process called cognitive restructuring, it is possible to transform negative, irrational, maladaptive thinking into rational, realistic, adaptive, and balanced thoughts (Deacon, Fawzy, Lickel, & Wolitzky-Taylor, 2011). This, in turn, can lead to more functional and productive behaviors, healthy emotional responses, more positive appraisals, and relief of feelings of anxiety and depression (Dimidjian & Davis, 2009).

Among patients with HF, recent literature reveals that CBT is associated with positive patient outcomes. Freedland et al. (2015) reported that CBT is effective in improving mood, reducing anxiety and fatigue, and improving social functioning and health-related quality of life among patients with HF. Gary et al. (2010) demonstrated an improvement in physical and psychological symptoms and enhanced quality of life among HF patients who received CBT. Further, Tully, Selkow, Bengel, and Rafanelli (2014) suggested that CBT may have significant impact on alleviating somatic and cognitive symptoms among HF patients with a depressive comorbidity.

However, review of literature reveals paucity of data exploring the effectiveness of such interventions among Filipino HF patients. Despite the current clinical practice guidelines set by the Philippine Heart Association that advocates non-pharmacologic and behavioral approaches to improve prognosis and symptom experience among Filipino patients with CVD (Dolor-Torres, Yaneza, Reganit, et al., 2011), the implementation of CBT as part of secondary prevention strategies to improve HF patient outcomes remains to be a blank spot in nursing literature. This study aims to address this gap in literature by determining the effectiveness of a nurse-led cognitive-behavioral intervention program on the quality of life, self-esteem and mood among Filipino patients living with HF.

## 2. Methods

### 2.1. Design

A randomized controlled (2-group) design with repeated measures collected before and after the intervention was utilized in this study. Purposive sampling technique was used to select the study participants.

### 2.2. Ethical Considerations

Ethical approval was sought and was granted by the ethics committee of the institution where the participant recruitment was conducted. The intervention protocol was reviewed several times and was approved by a five-membered panel who are all experts in the field of cardiovascular medicine and psychology. Informed consent was obtained from all the study participants after we have explained the goals of the study. Confidentiality, and patient privacy and dignity were maintained at all times. The CONSORT guidelines were adhered to in the presentation and analysis of data (Rennie, 2001).

### 2.3. Subjects

All HF patients who were admitted in a comprehensive tertiary referral hospital in the Philippines from September 2013 to August 2014 were considered for enrolment in this prospective study. For the inclusion criteria, study participants must be an adult, currently admitted in the research locale, and is being treated primarily for HF and not due to other co-morbidities. Patients who have a history of psychiatric disorder or are being treated for a significant psychiatric (severe depression, bipolar disorder, schizophrenia, substance abuse) or neurologic disorder (cerebrovascular accidents with significant motor or sensory deficits, motor neuron disease, movement disorders) were excluded in this study. They must be able to read and understand English and must demonstrate an ability to write. Lastly, only those who can provide voluntary consent were included in the study.

### 2.4. Sample Size

For an analysis of variance with an alpha of 0.05, power of at least 0.80, and a large effect size of 0.40, the required sample for each group was at least 28 (Cohen, 1988). As previously reported on a similar clinical trial utilizing CBT, a sample size of 56 patients was reported to be adequate (Lee, Lim, Yoo, & Kim, 2011). Considering the probable patient dropout and high attrition rate in longitudinal studies (Gustavson, von Soest, Karevold, & Røysamb, 2012), the number of participants recruited was increased by a margin of at least 25%. In this study, all participants who have met all of the inclusion criteria and gave informed consent were recruited to participate.

### 2.5. Blinding

Blinding was strictly observed for the data collection phase in this study. Except for the group of interventionists, the rest of the investigators were kept blind to the group assignment of the participants. The investigators who obtained the baseline and the outcome measures were not informed of the participant's group assignments. The nurse-interventionists were only allowed to see the experimental group participants during the entire period of study. No ward nurses were made members of the study team and they were not informed of any patient's allocation. Likewise, efforts were made to keep the conduct of the study private and concealed to the regular care staff. Lastly, the interventionist took no part in the collection of the baseline and outcome measures.

### 2.6. Intervention

Study participants were randomly allocated to the control or the experimental group through a computerized random number generator (1: control, 2: intervention). All the participants were handed a researcher-developed *robotfoto* (Kelchtermans & Ballet, 2002) to fill in with their socio-demographic data and contact information. For both groups, the baseline pre-test psychosocial measures, i.e., quality of life, self-esteem, and mood, were obtained prior to their expected day of hospital discharge.

The intervention and the control group both received traditional care characterized by medical/pharmacologic optimization therapy and HF-specific preventable risk factor modification strategies as prescribed by their cardiologists as based on the Philippine Heart Association clinical practice guidelines. Participants in the intervention group, in addition to traditional care, received the nurse-led CBT program following hospital discharge. The intervention is a highly structured, individualized program incorporating CBT techniques and principles developed by Gulliksson et al. (2011), Gary et al. (2010) and Berkman, Blumenthal, Burg, et al. (2003) and adapted to fit Filipino context through inputs generated from a prior descriptive, exploratory study.

The intervention incorporated techniques addressing the five key components of a CBT program that has been previously shown to be

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