

## The Beneficial Role of Spiritual Counseling in Heart Failure Patients

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**Abstract** To ascertain the beneficial role of spiritual counseling in patients with chronic heart failure. This is a pilot study evaluating the effects of adjunct spiritual counseling on quality of life (QoL) outcomes in patients with heart failure. Patients were assigned to “religious” or “non-religious” counseling services based strictly on their personal preferences and subsequently administered standardized QoL questionnaires. A member of the chaplaincy or in-house volunteer organization visited the patient either daily or once every 2 days throughout the duration of their hospitalization. All patients completed questionnaires at baseline, at 2 weeks, and at 3 months. Each of the questionnaires was totaled, with higher scores representing positive response, except for one survey measure where lower scores represent improvement (QIDS-SR16). Twenty-three patients ( $n = 23$ , age  $57 \pm 11$ , 11 (48 %) male, 12 (52 %) female, mean duration of hospital stay  $20 \pm 15$  days) completed the study. Total mean scores were assessed on admission, at 2 weeks and at 3 months. For all patients in the study, the mean QIDS-SR16 scores were 8.5 ( $n = 23$ ,  $SD = 3.3$ ) versus 6.3 ( $n = 18$ ,  $SD = 3.5$ ) versus 7.3 ( $n = 7$ ,  $SD = 2.6$ ). Mean FACIT-Sp-Ex (version 4) scores were 71.1 ( $n = 23$ ,  $SD = 15.1$ ) versus 74.7 ( $n = 18$ ,  $SD = 20.9$ ) versus 81.4 ( $n = 7$ ,  $SD = 8.8$ ). The mean MSAS scores were 2.0 ( $n = 21$ ,  $SD = 0.6$ ) versus 1.8 ( $n = 15$ ,  $SD = 0.7$ ) versus 2.5 ( $n = 4$ ,  $SD = 0.7$ ). Mean QoL Enjoyment and Satisfaction scores were 47.2 % ( $n = 23$ ,  $SD = 15.0$  %) versus 53.6 % ( $n = 18$ ,  $SD = 16.4$  %) versus 72.42 % ( $n = 7$ ,  $SD = 22$  %). The addition of spiritual counseling

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to standard medical management for patients with chronic heart failure patients appears to have a positive impact on QoL.

**Keywords** Heart failure · Spirituality · Religious · Non-religious · Quality of life

## Introduction

Heart failure is a chronic disease with a total incidence estimated to be greater than 500,000 patients each year in the United States alone (Lloyd-Jones et al. 2010). The existence of cardiac co-morbidities, namely coronary heart disease, hypertension and antecedent myocardial infarction, along with an aging population contribute greatly toward the total prevalence of heart failure, which is estimated to be 23 million worldwide (Levy et al. 1996; McMurray et al. 1998; He et al. 2001). The natural history of this condition is progressive and results in significant debility for those afflicted. While patients experiencing heart failure typically present with decreased exercise tolerance and fluid retention, there are myriad associated co-morbidities commonly complicating the condition (Levy et al. 1996). These co-morbidities include, but are not limited to, renal dysfunction, anemia, and respiratory disorders (Lang and Mancini 2007). Other conditions that often co-exist with heart failure are frequently ignored due to a lack of time or awareness of their prevalence among health care providers. These associated clinical syndromes include sexual dysfunction, cognitive decline, and depression (Jankowska et al. 2006; Saczynski et al. 2010). A recent meta-analysis has suggested that the prevalence of depression in heart failure patients is approximately 21.5 % (range 9–60 %) (Rutledge et al. 2006).

Numerous studies have recently linked co-morbid depression with poor cardiac outcomes (Albert et al. 2009; Jiang et al. 2007; Friedmann et al. 2006; Frasure-Smith et al. 2009). Heart failure patients suffering from depression report a significant increase in symptom burden (Gusick 2008). Therefore, it is expected that treatment of depression would improve both cardiac and non-cardiac outcomes in heart failure patients, a concept proven thus far in several studies (Jiang et al. 2011; Echols and Jiang 2011; Diez-Quevedo et al. 2012; Sullivan et al. 2009). Commonly accepted avenues for treatment of psychiatric illnesses such as depression are pharmacotherapy and psychotherapy (Kupfer et al. 2012). Spirituality has also been shown to diminish depressive symptoms in patients with heart failure, regardless of overall health status (Bekelman et al. 2007, 2009). For example, heart failure patients with more religious attendance as well as high intrinsic religiosity have previously been shown to have significantly faster remission of depression (Koenig et al. 1998).

The use of religious practices in healing is an age-old question that has more recently emerged as a topic of interest in modern medicine. Review of the literature, along with anecdotal experience of the authors, reveals that this topic has been of higher interest within the community for at least a decade. In 2000, a landmark journal article explored this subject along with implied justifications for making religious activities adjunctive medical treatment (Sloan et al. 2000). Recently, it has been demonstrated that spirituality has a positive effect on health irrespective of religious background (Curlin et al. 2007; Mueller et al. 2001; Koenig 2009; Baetz et al. 2006; Baetz and Toews 2009). Use of both religious and spiritual services can improve mortality, along with other measures in

patients with cardiac conditions such as myocardial infarction, hypertension, and hypercholesterolemia, as well as non-cardiac conditions (Koenig 2000; Chida et al. 2009; Matthews et al. 1998). Given the encouraging nature of these results, it can be hypothesized that the use of religious and spiritual counseling as adjunct therapy for heart failure patients would prove to be beneficial, regardless of baseline psychiatric function. Unfortunately, this topic has been investigated sparingly at best. This work serves as a pilot study to examine the effects of adjunct, scheduled religious or spiritual counseling on quality of life (QoL) outcomes via the use of standardized questionnaires among patients hospitalized for heart failure at a large, urban, and academic medical center.

## Methods

This study achieved Institutional Review Board (IRB) approval at Cedars-Sinai Medical Center (CSMC). Patients were enrolled from August 2010 to March 2011. Based strictly on patient preference, a member of the chaplaincy or in-house volunteer organization visited the subject based on whether the patient self-professed to be religious or non-religious, respectively. Visits from the religious affiliates; the chaplains, comprised of various activities related to religious counseling. These included, but were not limited to, prayer, reading of religious text, religion-specific rituals, and other pastoral care. Visits from the non-religious affiliates; the volunteers, comprised of personal discussions, recreational activities, and undertakings related to bolstering social and spiritual support. Patients were visited either daily or once every 2 days throughout the duration of their hospitalization. If a patient chose to be visited by a chaplain, he or she had the privilege of being paired with an individual who was able to provide services in the context of their preferred religion and where possible, of their specific denomination. Both the religious and non-religious groups were provided with counseling members who spoke the same language as the study participant in the event that the participant was not primarily a native English speaker. The chaplain representatives from the Department of Spiritual Care Services that headed logistics relating to counseling for our study were specifically affiliated with the Jewish, Catholic, and Christian religions. The aforementioned Christian chaplain also specializes in interfaith chaplaincy. When spiritual needs arose that were distinctly outside of the specialty of these chaplains, someone with appropriate qualifications was summoned to provide services for the study participants in a prompt fashion.

Inclusion criteria for the study included age greater than 18 years and an established diagnosis of congestive heart failure for more than 3 months. Patients were also required to be on a stable and appropriate treatment regimen prior to hospitalization. The primary reason for admission to the hospital was symptoms of ‘acute on chronic’ heart failure, determined to be New York Heart Association (NYHA) classes III-IV based on the assessment of the admitting physician. All patients were managed medically, and none were sent for acute cardiac intervention. Patients were excluded from the study if they lacked completion of baseline questionnaires, were lost to follow-up, died during the course of the study, or if they had refused to undergo counseling after enrollment.

All patients were asked to fill out QoL questionnaires in a timely manner, as specified by the standardized directions. Initial questionnaires were provided soon after enrollment into the study without importance to the length of hospital stay. Counseling began after completion of the first set of questionnaires. A second set and third set of the same questionnaires were provided at 2 weeks and at 3 months later, respectively. The

questionnaires were completed regardless of whether the patient was discharged or re-hospitalized after initial discharge. There was no physician assistance with regard to completion of the actual surveys. Each questionnaire functioned as a scoring guide to determine baseline QoL and subsequent patient response to intervention. Each of the questionnaires is well-validated scales used in research to gauge emotional well-being among individuals (Peterman et al. 2002; Portenoy et al. 1994; Endicott et al. 1993; Rush et al. 2003). A higher score is indicative of a positive response except in the case of the Quick Inventory of Depressive Symptomatology-Self-Report Questionnaire (QIDS-SR) 16, where a higher score is indicative of poor, negative, or non-response.

The Quick Inventory of Depressive Symptomatology (QIDS-SR16) is a measure of depressive symptom severity derived from the 30-item Inventory of Depressive Symptomatology. This questionnaire has assisted in determining a patient's level of depression before, during, and after treatment. The questionnaire is comprised of 16 questions related to physical and psychological symptoms experienced by the patient. Patients only answer 14 of the questions, as two questions employ an either/or format as an answer choice, based on how symptoms apply to their specific situation. Each question is posed in a multiple choice format, with choices on a Likert scale. The overall measure of depressive symptomatology is based on the score, with those scoring higher achieving poorer outcomes. A patient is considered a "non-responder" to intervention if he or she were to score 9 or greater. A "partial responder" is one who scores between 6 to 8, and a full responder is one with a score of 5 or less. Full scoring guidelines can be found at <http://www.ids-qids.org>.

Another questionnaire utilized for our study is the Functional Assessment of Chronic Illness Therapy—Spirituality-Expanded, Version 4 (FACIT-Sp-Ex); a QoL-based survey targeted toward those with chronic illness. It is a 23-item measure of spirituality with subscales for meaning, peace, and purpose in life as well as comfort and strength in one's spiritual beliefs. The responses are scored on a five-point Likert scale, with the options "not at all," "a little bit," "somewhat," "quite a bit," and "very much." The ranges are 0 (low) to 92 (high) for the total score (Rush et al. 2003; Cotton et al. 2006). FACIT-Sp-Ex scoring is performed using standard scoring guides that can be found at the website <http://www.facit.org>.

The Memorial Symptom Assessment Scale (MSAS) is also a questionnaire utilized in this study. It is a multidimensional scale developed to measure the prevalence, characteristics, and distress of common symptoms. This revised scale evaluates 32 physical and psychological symptoms, with three blank spaces on the form provided for the respondent to list symptoms that are not already pre-populated. The respondent is asked to determine whether he or she had experienced a particular symptom listed on the questionnaire. If "yes", the frequency and severity of that symptom are asked along with how much distress it had caused. A Likert scale is employed for each of these aforementioned parameters, with the options "rarely," "occasionally," "frequently," or "almost constantly" for the frequency subset. The options "slight," "moderate," "severe," and "very severe" for the severity subset, and the options "a little bit," "somewhat," "quite a bit," and "very much" for the distress subset. The symptom score is obtained by averaging the dimensions (frequency, severity, and distress) of each of the 32 symptoms on the form. The total score is then obtained by averaging all 32 symptom scores.

The QoL Enjoyment and Satisfaction (Q-LES-Q-SF) are also used in this study to help assess the degree of enjoyment and life satisfaction experienced by the patient, specifically within 1 week of questionnaire administration. The Q-LES-Q-SF consists of 16 physical and psychological characteristics in which the patient is asked his or her satisfaction for

each characteristic. The options for the first 14 characteristics are arranged on a Likert scale with the options “very poor,” “poor,” “fair,” “good,” and “very good”. The last two items are standalone items. The scoring of the questionnaire involves summing only the first 14 items to yield a raw total score (14–70). The raw total score is then transformed into a percentage maximum possible score (0–100 %) using a provided formula (Endicott et al. 1993).

Average and standard deviation values were calculated for all survey measures at the specified time points for each group of patients. *p* values were also obtained to compare averages within groups at the different time points. This was accomplished by use of a standard unpaired *t* test with *p* value significance defined as <0.05.

## Results

A total of 36 patients were recruited into the study. Thirteen patients did not meet the initial inclusion criteria or were early drop-outs and therefore were excluded. Twenty-three patients ( $n = 23$ , age  $57 \pm 11$ , 11 (48 %) male, 12 (52 %) female, mean duration of hospital stay  $20 \pm 15$  days) completed baseline questionnaires. Fourteen (61 %, age  $58 \pm 11$  years, 6 (43 %) male, 8 (57 %) female, mean duration of hospital stay  $25 \pm 18$  days) patients self-assigned to the religious group while 9 (39 %, age  $57 \pm 10$  years, 5 (56 %) male, 4 (44 %) female, mean duration of hospital stay  $13 \pm 8$  days) self-assigned to the non-religious group (Table 1).

The total mean scores for each survey measure are listed based on admission, 2-week and 3-month values. The mean QIDS-SR16 scores were 8.5 ( $n = 23$ , SD = 3.3) versus 6.3 ( $n = 18$ , SD = 3.5) versus 7.3 ( $n = 7$ , SD = 2.6), respectively. Mean FACIT-Sp-Ex (version 4) scores were 71.1 ( $n = 23$ , SD = 15.1) versus 74.7 ( $n = 18$ , SD = 20.9) versus 81.4 ( $n = 7$ , SD = 8.8), respectively. The mean MSAS scores were 2.0 ( $n = 21$ , SD = 0.6) versus 1.8 ( $n = 15$ , SD = 0.7) versus 2.5 ( $n = 4$ , SD = 0.7), respectively. Mean Q-LES-Q-SF score on admission was 47.2 % ( $n = 23$ , SD = 15.0 %), medication satisfaction item was 3.35/5, and overall life satisfaction item was 2.91/5. The mean Q-LES-Q-SF score at 2 weeks was 53.6 % ( $n = 18$ , SD = 16.4 %), medication satisfaction item was 3.72/5, and overall life satisfaction item was 3.78/5. At 3 months, the Q-LES-Q-SF score was 72.42 % ( $n = 7$ , SD = 22 %), medication satisfaction item was 3.86/5, and overall life satisfaction item was 4/5 (Tables 2, 3, 4, 5).

For the religious group, the total mean scores for each survey measure are also listed based on admission, 2-week and 3-month values. The mean QIDS-SR16 scores were 5.21 ( $n = 14$ , SD = 2.8) versus 6.77 ( $n = 13$ , SD = 3.5) versus 6.83 ( $n = 6$ , SD = 2.48), respectively. Mean FACIT-Sp-Ex (version 4) scores were 72.2 ( $n = 14$ , SD = 16.4)

**Table 1** Baseline characteristics

Characteristics	All	Religious	Non-religious
Age	57.37	57.57	57.00
Male	47.83 %	42.86 %	55.56 %
Female	52.17 %	57.14 %	44.44 %
Hospital stay	20.10	24.58	13.38

Similar baseline characteristics are encountered when stratifying patients in religious and non-religious groups

**Table 2** QIDS-SR16 scores

QIDSSR16	All	Religious	Non-religious
Baseline	8.46*	5.21	8.67
2 Weeks	6.32	6.77	6.40
3 Months	7.29	6.83	10.00

QIDS-SR16 scores show an overall decrease in value when comparing values at baseline to values at 3 months, where a decreased score indicates response to intervention

\* Numeric value of the baseline group achieves significance ( $p$  value < 0.05) as compared to the 2 Weeks group

**Table 3** FACIT-Sp-Ex scores

FACIT	All	Religious	Non-Religious
Baseline	71.04	72.21	69.22
2 Weeks	74.67	80.75	62.50
3 Months	81.43	81.33	82.00

The uptrend in FACIT-Sp-Ex scores over time demonstrate positive response to intervention among all patients

**Table 4** MSAS scores

MSAS	All	Religious	Non-religious
Baseline	2.02	1.89	2.18
2 Weeks	1.84	1.82	1.86
3 Months	2.45	2.11	3.46

The uptrend in MSAS scores over time demonstrate positive response to intervention among all patients

**Table 5** Q-LES-Q-SF scores

QLESQSF	All	Religious	Non-Religious
Baseline	47.21 %***	47.45 %	46.83 %
2 Weeks	53.57 %**	51.46 %	56.89 %
3 Months	72.42 %	64.73 %	32.00 %

The uptrend in Q-LES-Q-SF percentage scores over time demonstrate positive response to intervention among all patients

\*\* Numeric value of the 2 Weeks group achieves significance ( $p$  value < 0.05) as compared to the 3 Months group

\*\*\* Numeric value of the Baseline group achieves significance ( $p$  value < 0.05) as compared to the 3 Months group

versus 80.8 ( $n = 12$ ,  $SD = 13.7$ ) versus 81.3 ( $n = 6$ ,  $SD = 9.7$ ), respectively. The mean MSAS scores were 1.9 ( $n = 12$ ,  $SD = 0.4$ ) versus 1.8 ( $n = 10$ ,  $SD = 0.6$ ) versus 2.1 ( $n = 2$ ,  $SD = 0.3$ ), respectively. Mean Q-LES-Q-SF score on admission was 47.5 % ( $n = 14$ ,  $SD = 15.0$  %), medication satisfaction item was 3.33/5, and overall life

satisfaction item was 2.85/5. The mean Q-LES-Q-SF score at 2 weeks was 51.5 % ( $n = 11$ ,  $SD = 17.0$  %), medication satisfaction item was 3.60/5, and overall life satisfaction item was 3.63/5. At 3 months, the Q-LES-Q-SF score was 64.7 % ( $n = 6$ ,  $SD = 17.8$  %), medication satisfaction item was 4.00/5, and overall life satisfaction item was 4.16/5 (Tables 2-5).

For patients in non-religious group, the total mean scores for each survey measure are again listed based on admission, 2 week and 3 month values. The mean total QIDS-SR16 scores were 8.7 ( $n = 9$ ,  $SD = 4.2$ ) versus 6.4 ( $n = 5$ ,  $SD = 3.78$ ) versus 10.0 ( $n = 1$ ,  $SD = N/A$ ), respectively. Mean FACIT-Sp-Ex (version 4) scores were 69.2 ( $n = 9$ ,  $SD = 13.7$ ) versus 62.5 ( $n = 6$ ,  $SD = 28.4$ ) versus 82.0 ( $n = 1$ ,  $SD = N/A$ ), respectively. The mean MSAS scores were 2.18 ( $n = 9$ ,  $SD = 0.74$ ) versus 1.9 ( $n = 5$ ,  $SD = 0.9$ ) versus 3.5 ( $n = 1$ ,  $SD = N/A$ ). Mean Q-LES-Q-SF score on admission was 46.8 % ( $n = 9$ ,  $SD = 17.0$  %), medication satisfaction was 3.38/5, and overall life satisfaction was 3.00/5. The mean Q-LES-Q-SF score at 2 weeks was 56.9 % ( $n = 7$ ,  $SD = 16.0$  %), medication satisfaction item was 3.85/5, and overall life satisfaction item was 4.00/5. At 3 months, the mean Q-LES-Q-SF score was 32.0 % ( $n = 1$ ,  $SD = N/A$ ), medication satisfaction item was 3.00/5, and overall life satisfaction item was 3.00/5 (Tables 2-5).

$p$  values were calculated for data between different time points within each of the groups for each survey measure. Results were as follows for all patients: QIDS-SR16 baseline versus 2 weeks ( $p = 0.04$ ), 2 weeks versus 3 months ( $p = 0.47$ ), baseline versus 3 months ( $p = 0.40$ ); FACIT-Sp-Ex (version 4) baseline versus 2 weeks ( $p = 0.52$ ), 2 weeks versus 3 months ( $p = 0.42$ ), baseline versus 3 months ( $p = 0.10$ ); MSAS baseline versus 2 weeks ( $p = 0.40$ ), 2 weeks versus 3 months ( $p = 0.133$ ), baseline versus 3 months ( $p = 0.21$ ); Q-LES-Q-SF baseline versus 2 weeks ( $p = 0.20$ ), 2 weeks versus 3 months ( $p = 0.03$ ), baseline versus 3 months ( $p = 0.02$ ) (Table 6).

The results were as follows for the religious patients only: QIDS-SR16 baseline versus 2 weeks ( $p = 0.21$ ), 2 weeks versus 3 months ( $p = 0.97$ ), baseline versus 3 months ( $p = 0.24$ ); FACIT-Sp-Ex (version 4) baseline versus 2 weeks ( $p = 0.17$ ), 2 weeks versus 3 months ( $p = 0.93$ ), baseline versus 3 months ( $p = 0.23$ ); MSAS baseline versus 2 weeks ( $p = 0.74$ ), 2 weeks versus 3 months ( $p = 0.42$ ), baseline versus 3 months ( $p = 0.41$ ); Q-LES-Q-SF baseline versus 2 weeks ( $p = 0.54$ ), 2 weeks versus 3 months ( $p = 0.15$ ), baseline versus 3 months ( $p = 0.04$ ).

Due to only one patient completing the 3 month follow-up survey among the non-religious patients,  $p$  values could not be calculated for the 2 weeks versus 3 months, and baseline versus 3 months groups. Results were as follows for the baseline versus 2 weeks groups for each of the survey measures: QIDS-SR16 ( $p = 0.34$ ); FACIT-Sp-Ex (version 4) ( $p = 0.55$ ); MSAS ( $p = 0.48$ ); Q-LES-Q-SF ( $p = 0.25$ ).

**Table 6**  $p$  values by survey measure for all patients

	QIDSSR16	FACIT	MSAS	QLESQSF
Baseline versus 2 Weeks	0.04*	0.52	0.40	0.20
2 Weeks versus 3 Months	0.47	0.42	0.13	0.03*
Baseline versus 3 Months	0.40	0.09	0.21	0.02*

An analysis of  $p$  values demonstrates significance between several time periods for some survey measures

\*  $p$  value significant

## Discussion

The present pilot study attempts to evaluate the role of spiritual counseling to standard treatment modalities for hospitalized adult patients with chronic heart failure. The data are suggestive of an overall enhancement in QoL, as established by improved survey scores with the use of adjunct religious or spiritual support in patients admitted to a hospital with heart failure over a period of 3 months. Each of the four survey measures employed in this study demonstrated the same trend when the entire study population was analyzed over a 3-month period. Similar results were encountered when subset groups were analyzed. Patients in the religious group, i.e., counseling provided by the chaplains, demonstrated improvements in survey scores across the FACIT-Sp-EX, MSAS and Q-LES-Q-SF, but not for the QIDS-SR16. Our results show that there is an increase in the 3-month QIDS-SR16 score as compared to baseline (demonstrating lack of response to intervention); however, the absolute difference is minimal ( $6.83 - 5.21 = 1.62$ ) and this placed patients in the subjective category as “partial responder” based on the survey scoring system. Thus, the data show that from the perspective of one survey measure, the religious group may only partially benefit from intervention in terms of QoL.

Patients in the non-religious group demonstrated improvements in survey scores across the FACIT-Sp-Ex and MSAS, but not on the Q-LES-Q-SF and QIDS-SR16 survey measures. This shows that intervention, provided in this case by the non-religious affiliates or volunteers, may not be as powerful in improving QoL measures for this particular group. Nevertheless, a reason for the discrepancies in the results described among different study groups may be due to small number of patients involved in this study.

Data from this study demonstrate two separate patterns of change. One of these patterns shows an improved response to intervention with greater QoL at 2 weeks followed by a non-response and worsening of QoL at 3-month follow-up. The other pattern is that of a lack of response to intervention with worsening of QoL at 2 weeks followed by a response and improvement of QoL at 3 months. The reasons for these effects are likely variable. Pre-existing psychiatric and non-psychiatric co-morbidities among the patient population as well as their management at the time of survey administration is likely heterogeneous among study participants. This may contribute toward overall functioning and emotional temperament at the time of the surveys, which may in turn be factors for obtaining unexpected results.

While the conclusions drawn from our study are based largely on numeric data alone, the significant *p* values encountered when comparing patients at different time points are demonstrative of a true enhancement of QoL with the inclusion of spiritual counseling as a component of heart failure treatment. A true comparison between the religious and non-religious groups, although exciting to discuss, is difficult to establish in the context of this study. Evaluating the data as religious and non-religious groups separately likely does not power the study highly enough for appropriate statistical interpretation. Moreover, the type of intervention in each group was non-uniform. Activities related to religious care fundamentally differ from those provided by volunteer services. Further, the small sample size makes it difficult to extrapolate data to a larger cohort.

Appropriate measures of QoL are of utmost importance in the identification of appropriate response to intervention. Multiple assessments of QoL have been validated, including those used in the study (Peterman et al. 2002; Portenoy et al. 1994; Endicott et al. 1993; Rush et al. 2003). Other measures include the disease specific quality of life (DSQoL), health related quality of life (HRQoL), and global quality of life (GQoL). Studies on these surveys have demonstrated that specific characteristics can affect the

outcomes of these measures. For example, a study has shown that HRQoL may be affected by underlying functional class and self-professed neuroticism, but that there was no relationship between spirituality and the HRQoL (Westlake et al. 2002). Further studies have analyzed this “association,” or lack thereof. A 2002 study reveals that spirituality does not have an effect in improving HRQoL or DSQoL score, but that GQoL was significantly improved in those patients who self-reported higher spirituality (Beery et al. 2002). Therefore, although each survey assessment employed in this study is well validated as a research tool, it should be noted that each may or may not be as such for our specific end point. However, the use of multiple survey measures in our study assists in minimizing this issue.

Spirituality has been shown to have multiple beneficial implications for patients with heart failure. More than simply having a therapeutic effect on anxiety as well as emotion, other effects noted include a transient reprieve from the natural world (Seeman et al. 2003). For some patients, this is described as transcendence into a supernatural state in which a higher power may provide care (Jantos and Kiat 2007). Moreover, spirituality can deepen a sense of meaning and provides acceptance that not everything is under a patient or provider’s control (Vollman et al. 2009). This mode of thinking may allow patients to confront their medical conditions with a more realistic and positive outlook, which is ultimately beneficial for a chronic and debilitating condition such as heart failure (Westlake and Dracup 2001). Other possible advantages of spirituality include reductions in stress, symptom burden, and improved physiological responses (Koenig 2009). A classic research study has demonstrated that all-comers who perform prayer have a reduced heart rate, resting blood pressure, slower respiratory rate as well as increased peripheral perfusion (Benson et al. 1974). This optimal metabolic state differs significantly from the increased metabolic demands inherent with the pathophysiology of heart failure. Given that spiritual activities have been strongly shown to correlate with beneficial health effects throughout the literature, we are certain that the patients in our study experienced a similar phenomenon, in turn boosting QoL.

The major limitation to our study is the small sample size, making it difficult to draw definite conclusions. Follow-up multicenter randomized control trials are encouraged to assess the validity of our preliminary data. Moreover, varying degrees of psychiatric and non-psychiatric co-morbidities were encountered in this study population that might affect subject’s emotional state and can confound the survey results. A study that characterizes and stratifies patients by type and severity of co-morbidities with special attention to baseline psychiatry conditions may be a useful. Factors that may be confounders in our study are varying lengths of time spent during patient counseling. One may assume that individuals who were counseled for longer periods of time might benefit from greater QoL outcomes, but this needs to be validated. Medical treatment might be another confounder in this study because benefits from heart failure treatment such as symptoms and ultimate discharge from the hospital environment might impact positively on QoL, independent of any type of counseling. The survey measure itself may also serve as a confounder, in that some patients may be more apt to report positive responses on follow-up surveys to show a treatment effect.

For these reasons, a formalized and more robust study design, with inclusion of a control group (not receiving counseling) is needed to demonstrate a true effect. Additionally, an attempt to increase homogeneity of the intervention between two groups (religious versus non-religious) such that the types of activities, as well as frequency and duration of visits are similar may be of supplementary benefit in improving study design. A

study that would measure outcomes beyond a 3-month period would also be of interest to determine if the effects of the intervention are sustained.

## Conclusion

The inclusion of spiritual counseling as a component of the treatment algorithm for heart failure patients can provide benefits with regard to QoL. Further studies should be attempted with the goal of reproducing our findings in a larger cohort of patients.

**Conflict of interest** This study was sponsored by the Office of Research Compliance at Cedars Sinai Medical Center, Los Angeles, California. The authors have no additional conflicts of interest to disclose.

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