นิพนธ์ต้นฉบับ

Self-care and quality of life in patients with heart failure: do gender differences exist?[@]

จันทร์ทิรา เจียรณัย[1]
Jeanne Salyer[2]

Self-care and quality of life in patients with heart failure: do gender differences exist?
Chiaranai C[1], Salyer J[2].
[1]Institue of Nursing, Suranaree University of Technology,
Nakhornratchasima, 30000, Thailand
[2]Department of Adult Health and Nursing Systems,
School of Nursing, Virginia Commonwealth University, Richmond, VA, USA.
E-mail: Chantira123@hotmail.com
Songkla Med J 2009;27(6):451-463

[@] งานวิจัยนี้ได้นำเสนอในการประชุมวิชาการนานาชาติ The international conference: health and the changing world ระหว่างวันที่ 11-14 พฤศจิกายน 2551 และนำเสนอในการประชุมวิชาการกระทรวงสาธารณสุข ประจำปี 2552 ในหัวข้อเรื่อง 90 ปี สาธารณสุขเพื่อคนไทยสุขภาพดี ระหว่างวันที่ 20-23 มีนาคม 2552

รับต้นฉบับวันที่ 19 มิถุนายน 2552 รับลงตีพิมพ์ 19 ตุลาคม 2552

Abstract:

Background: *Self-care helps reduce the frequency of hospitalization and exacerbations, thereby enhancing quality of life (QOL) in heart failure (HF) patients.*

Objective: *This study aimed to determine if gender differences exist in self-care and QOL in HF patients.*

Methods: *Using a cross-sectional cohort study, 98 subjects participated in this study. Self-care attributes were measured using the Self-Care of Heart Failure Index. QOL was measured using a disease-specific instrument, the Minnesota Living with Heart Failure Questionnaire, and a generic instrument, the Short-Form Health Survey (SF-12v2) characterizing physical functioning and mental-emotional functioning. Data were analyzed by using independent t-tests.*

Results: *On average the sample were 56.3 □13.7 years old and composed of 43.9% female and 56.1% male. The findings revealed a significant difference in self-care management strategies between males and females (mean = 68.4 □18.8 vs. 56.6 □19.3 respectively, p = 0.003), and a significant difference in QOL between males and females (mean = 57.4 □22.5 vs. 48.2 □21.4 respectively, p = 0.045).*

Conclusion: *The study demonstrated that there were significant gender differences in self-care management, and QOL, with males reporting more frequent use of self-care strategies and better QOL.*

Key words: *gender differences, heart failure, quality of life, self-care*

บทคัดย่อ :

ความเป็นมา: *การดูแลตนเองของผู้ป่วยหัวใจล้มเหลวช่วยลดความถี่ในการรักษาในโรงพยาบาล ชลอการกำเริบของโรค ทำให้มีคุณภาพชีวิตที่ดีขึ้น*

วัตถุประสงค์: *เพื่อศึกษาเปรียบเทียบการดูแลตนเองและคุณภาพชีวิตของผู้ป่วยหัวใจล้มเหลวระหว่างเพศชายและเพศหญิง*

ระเบียบวิธีวิจัย: *กลุ่มตัวอย่างเป็นผู้ป่วยหัวใจล้มเหลว 98 ราย เครื่องมือวิจัยประกอบด้วย 1) แบบวัดความสามารถในการดูแลตนเอง (Self-care of Heart Failure Index) 3 ด้าน ได้แก่ ความสามารถในการดูแลตนเองในการคงไว้ซึ่งความเป็นปกติสุข ทักษะการจัดการกับอาการของโรค และความมั่นใจในการดูแลตนเอง 2) แบบวัดคุณภาพชีวิตสำหรับผู้ป่วยหัวใจล้มเหลว (Disease specific quality of life) Minnesota Living with Heart Failure Questionnaire 3) แบบวัดคุณภาพชีวิตทั่วไป (Short-Form Health Survey, SF-12v2) ซึ่งวัดคุณภาพชีวิต มิติด้านร่างกายและมิติด้านจิตใจ วิเคราะห์ข้อมูลโดยใช้สถิติพื้นฐาน (ความถี่ ร้อยละ ค่าเฉลี่ย และส่วนเบี่ยงเบนมาตรฐาน) และเปรียบเทียบการดูแลตนเอง และคุณภาพชีวิตของผู้ป่วยหัวใจล้มเหลวระหว่างเพศชายและเพศหญิง โดยใช้ independent t-test*

ผลการศึกษา: *กลุ่มตัวอย่างมีอายุเฉลี่ย 56.3 □13.7 ปี เป็นเพศหญิงและเพศชาย ร้อยละ 43.9 และ 56.1 ตามลำดับ เพศชายมีทักษะในการจัดการกับอาการของโรคแตกต่างจากเพศหญิงอย่างมีนัยสำคัญทางสถิติ (mean = 68.4 □18.8 vs. 56.6 □19.3 ตามลำดับ, p = 0.003) และเพศชายมีคุณภาพชีวิต ด้านจิตใจแตกต่างจากเพศหญิงอย่างมีนัยสำคัญทางสถิติ (mean = 57.4 □22.5 vs. 48.2 □21.4 ตามลำดับ, p = 0.045)*

สรุป: *ผลการศึกษาครั้งนี้แสดงให้เห็นว่าผู้ป่วยหัวใจล้มเหลวเพศชาย มีความสามารถในการดูแลตนเองและคุณภาพชีวิตที่ดีกว่าเพศหญิง*

คำสำคัญ: *การดูแลตนเอง, คุณภาพชีวิต, ผู้ป่วยหัวใจล้มเหลว*

Introduction

Heart disease and stroke statistics provided by the American Heart Association[1] report that heart diseases and stroke kill more than 950,000 Americans annually. Heart disease continues to be a major cause of disability and a significant contributor to increasing healthcare costs in the United States estimated at $351.8 billion in 2003.[2] Heart failure (HF) is a clinical syndrome that leads to progressively more severe symptoms, reduced vitality, forced dependency, and early retirement.

Social and behavioral factors, such as the absence of social support or motivation, contribute to hospital readmission in this population.[3] Moreover, the troublesome symptoms experienced by patients with HF are associated with diminished quality of life (QOL), frequent hospitalizations, and mortality. Importantly, it is believed that learning more about HF and its management is the best way to reduce disability and death.[2,4-5]

Using better self-care strategies and management might reduce the frequent hospital readmissions, costs, morbidity associated with HF, and eventually improve QOL in this patient population.[4] Self-care helps reduce the personal economic burden through controlling symptoms, reducing hospital admission, and slowing the progression of disease.[5] The goal of symptom management is to avert or delay a negative outcome through biomedical, professional, and self-care strategies. Thus the improvement of functional status and decreased symptoms can have an impact on the QOL in patients with HF.[6]

Several studies have been conducted involving cardiovascular patient populations, self-care, symptom management, decision-making, and QOL. For example, Artinian, et al.[7] studied self-care behavior among patients with HF. The Revised Heart Failure Self-Care Behavior Scale (alpha = 0.84) developed by these researchers was used to measure self-care behaviors in a sample of 110 HF patients. The researchers discovered that no significant relationships occurred between the total self-care behavior score and any of the personal factors, such as age, sex, race, marital status, health state, income, education, and/or living status.

Rockwell and Riegel[8] examined the predictors of self-care in patients with HF (N = 209). Using multiple regression analysis, they found that two variables were significant predictors of self-care: education and symptom severity, explaining 10.3% of the variance for self-care. Education contributed 4.6% of the variance for self-care ($p = 0.009$) after controlling for the other variables in the model. Symptom severity then accounted for an additional 2.7% of the variance in self-care above all of the other variables ($p = 0.046$). The researchers concluded that patients with higher education and those who were more symptomatic might be more likely to engage in self-care than those who were less well educated and less symptomatic.[8]

In another study, Chriss, et al.[9] examined the predictors of successful HF self-care maintenance (SC-Mt) in the first 3 months after hospitalization. The aim of this predictive study was to replicate a prior study of predictors of self-care in HF conducted by Rockwell and Riegel.[8] A nonexperi-mental, correlational replication study retested a model of seven variables namely social support, symptom severity, co-morbidity, education, age, gender, and income.

The model was tested at baseline and 3 months after hospitalization. The SC-Mt, one of three components of self-care, was measured with the maintenance subscale of Self-Care of Heart Failure Index. The results of Chriss, et al.[9] study showed that SC-Mt improved significantly over time ($p < 0.001$). The model of 7 variables was significant at baseline ($p = 0.02$), and it explained approximately the same amount of the variance in self-care (14.8%) as the model proposed by Rockwell and Riegel.[8] In addition, significant predictors of SC-Mt were age ($p = 0.03$) and gender ($p = 0.01$). These researchers concluded that elderly men and persons with fewer comorbid illnesses were most successful at HF self-care.[9] However, the study was limited by the use of a small, nonrandom sample.

I had conducted a study of self-care and quality of life in patients with HF and suggested that better QOL is associated with being male, displaying better New York Heart Association (NYHA) functional class, having fewer co-morbidities, more frequent use of self-care maintenance, being less likely to use self-care management strategies, and having confidence in ability to perform self-care.[10]

In summary, HF is associated with progressively severe symptoms, such as shortness of breath, peripheral edema, difficulty sleeping in the supine position, cough, inability to perform normal activities of daily living, sudden weight gain because of fluid retention, and anxiety, which may have a negative impact on a patient's QOL.[11-12] The nursing care of patients with HF is aimed at assisting each individual to maximize his or her level of self-care by understanding and adhering to the treatment as a means for reducing or eliminating symptoms that may help increase life expectancy and improve QOL.[13-14] Self-care in patients with HF is clearly challenging. If patients are unable to recognize a change in their symptoms, it is unrealistic to expect them to act on those changes. It is predicted that patients with the knowledge to recognize and make decisions regarding their symptoms will have better self-care and better QOL.[13]

Effective self-care strategies are critical skills that help prevent and manage the complications of HF and promote better QOL in individuals with this chronic disease. The purpose of the present study, therefore, was to compare self-care strategies of (a) self-care maintenance (SC-Mt), (b) self-care management (SC-Mn), and (c) self-care self-confidence (SC-Sc) and QOL between male and female patients with HF.

Materials and methods

Design, sample, and setting

Using medium-sized relationship between independent variables and dependent variable, $\alpha = 0.05$ and $\beta = 0.20$. The sample for this cross-sectional cohort study ($n = 98$) was recruited from the Heart Failure/Heart Transplant Program of the Virginia Commonwealth University Health System (VCUHS). Inclusion criteria included the following: patients with HF who (1) were classified as NYHA Classes I-IV; (2) had an ejection fraction of < 40%; (3) were undergoing medical treatment for HF; (4) had a HF diagnosis for at least 3 months; (5) were 18 years of age or older; and (6) could read English. The Virginia Commonwealth University Institutional Review Board (IRB) approved the study.

Variables and instruments

Social support:

Social support has been shown to be an important component of HF-related treatment and outcomes.[15] In the present study, social support was measured using the 19-item Social Support Scale of the Medical Outcomes Study.[16] All items use five response-statement scores (1 = none of the time; 5 = all of the time). Higher scores reflect greater social support. In the present study, the total reliability of the total scale was 0.86.

Comorbid conditions:

The Charlson Index was used to elicit comorbid conditions. The Charlson Index uses the number and weighted seriousness of reported comorbid diseases to categorize respondents from 0 (no comorbid conditions) to 5 (serious or several comorbid conditions). A higher score indicates greater comorbidity. The reliability of the Charlson Index is reported at 0.91.[17]

Self-care:

In this study, self-care was defined as a process of how patients with HF make decisions involving their choice of behaviors that maintain physiologic stability and their increasing response to symptoms when they occur.[13] In the present study, self-care was measured using the 15-item Self-Care of Heart Failure Index (SCHFI), which includes three subscales including: SC-Mt, SC-Mn, and SC-Sc. A higher score indicates better self-care. In the present study, the reliability of the SCHFI total scale was 0.77.

Quality of life:

In the current study, the Minnesota Living with Heart Failure Questionnaire (MLHFQ) was used as a disease-specific measure of QOL. It consists of 21 questions focused on patients' perceptions concerning the effects of HF on their physical and emotional lives. Patients respond to 21 items using a 6-point Likert scale (0 = no; 5 = very much). The total score can range from 0 to 105; a lower score reflects better QOL. Internal consistency reliability of the MLHFQ ranges from 0.73 to 0.93.[18-20] The reliability of the MLHFQ in current study was 0.93.

The generic measure of QOL used in the present investigation was the 12-item Short Form Health Survey (SF-12). It is comprised of 12 items with response scales ranging from 2 to 6.[18-20] Seven items of the SF-12 deal with physical health, and five deal with mental health. The summary score indicates QOL, with higher scores indicating better QOL. The validity and reliability of the SF-12 has been documented in a variety of patient populations, including those with HF.[16,20-21] In the present study, the reliability of the SF-12 total scale was 0.83, with $\alpha = 0.87$ for the physical functioning subscale and $\alpha = 0.81$ for the mental-emotional functioning subscale.

Data collection and procedure

The current study used a mailed-survey method for the data collection. To achieve a higher response rate, Dillman's tailored design method for surveys was used for packet production and survey implementation.[22] Potential participants received a letter from the medical director and the nurse coordinator of Heart Failure Clinic, VCUHS that briefly explained the study and introduced the investigator. Two weeks after the introductory letter was sent, the investigator sent each potential participant a packet that included a cover letter and consent form; study instruments with instructions for completion; a pencil; a gift incentive (Chick-fil-A® coupon); and two postage-paid return envelopes. Upon completion and return of the questionnaires, each respondent received $10 as a token of appreciation for their participation.

Data analysis

Data were analyzed using the Statistical Program for Social Studies (SPSS) for Windows (version 15.0). In the descriptive phase of data analysis, all of the study variables were summarized using frequencies, percentages, mean and standard deviation. Independent t-test was used to compare the self-care strategies of SC-Mt, SC-Mn, SC-Sc, and the QOL measures of the MLHFQ and the SF-12 (physical functioning and mental-emotional functioning) differentiated by gender. The level of significance was set at $p < 0.05$.

Results

Sample characteristics

Table 1 presents the overall sample characteristics.

Clinically, half of the sample were somewhat functionally impaired (NYHA Class II) and had an

Table 1 Summary statistics: individual characteristics of sample

Characteristic	Frequency (%)	Mean (S.D.)	Range
Age (y)		56.3 (13.7)	27-91
25-39	7/98 (7.1)		
40-54	44/98 (44.9)		
55-69	28/98 (28.6)		
70-84	16/98 (16.3)		
Greater than 84	3/98 (3.1)		
Gender			
Male	55/98 (56.1)		
Female	43/98 (43.9)		
Race			
Caucasian	47/97 (48.5)		
African-American	45/97 (46.4)		
Other	5/97 (5.2)		
Household income (Dollars per year)			
Less than $10,000	20/96 (20.8)		
10,001-30,000	39/96 (40.6)		
30,001-50,000	16/96 (16.7)		
50,001-70,000	12/96 (12.5)		
Greater than 70,000	9/96 (9.4)		
Marital status			
Single	15/98 (15.3)		
Married	54/98 (55.1)		
Widowed	8/98 (8.2)		
Divorced	21/98 (21.4)		

Table 1 Continued

Characteristic	Frequency (%)	Mean (S.D.)	Range
Education			
Less than high school	16/98 (16.3)		
High school graduate or GED*	71/98 (72.5)		
Greater than high school	11/98 (11.2)		
Clinical Characteristics			
NYHA			
Class I	19/98 (19.4)		
Class II	57/98 (58.2)		
Class III	20/98 (20.4)		
Class IV	2/98 (2.0)		
Ejection fraction (%)		25.8 (8.3)	10-40
10-19	14/98 (14.3)		
20-29	40/98 (40.8)		
30-39	34/98 (34.7)		
40	10/98 (10.2)		
Length of illness (y)		5.1 (3.3)	1–21
Less than 4	40/98 (40.8)		
5-9	52/98 (53.0)		
10-14	3/98 (3.0)		
15-19	1/98 (1.0)		
Greater than 19	2/98 (2.0)		
Co-morbidity category		3.7 (2.6)	1–15
Low (0-4)	68/98 (70.8)		
Moderate (5-9)	25/98 (15.5)		
High (greater than 10)	3/98 (3.0)		
Co-morbidity by conditions			
Myocardial infarction	46/98 (46.9)		
Heart failure ONLY	17/98 (17.7)		
Peripheral vascular disease	11/98 (11.2)		
Stroke	16/98 (16.3)		
COPD**	20/98 (20.4)		
Ulcers	8/98 (8.2)		
Diabetes mellitus	32/98 (32.6)		
Renal diseases	17/98 (17.7)		
Connective tissue disorders	16/98 (16.3)		
Cancer	8/98 (8.2)		
Social support		71.4 (17.3)	23–90

*General Equivalency Diploma

**Chronic Obstructive Pulmonary Disease

ejection fraction less than 30%. Ninety-three percent had been diagnosed with HF less than 10 years prior to measurement (mean = 5.1, S.D. = 3.3). Seventy percent had a low number of comorbidities, and 17.7% reported that they only had HF and no other comorbidities. Overall, participants reported a mean score of social support at 71.72 (S.D. = 17.30) (Table 1).

Participating females were on average older age than participating males ($\text{mean}_{\text{Female}}$ = 58.6 □ 13.2 years old, $\text{mean}_{\text{Male}}$ = 53.5 □13.9 years old), had a lower ejection fraction less than males ($\text{mean}_{\text{Female}}$ = 23.9 □8.1%, $\text{mean}_{\text{Male}}$ 28.2 □7.9%). Females reported a lower social support score than males ($\text{mean}_{\text{Female}}$ = 70.6 □17.8, $\text{mean}_{\text{Male}}$ 72.5 □16.8). Additionally, females and males reported having HF for approximately 5 years (Table 2).

Self-care:

On average, participants reported their self-care strategies as that they frequently performed self-care in order to maintain a healthy lifestyle: SC-Mt (mean = 69.6, S.D. = 15.6). They reported that they responded quickly to signs and symptoms that occurred and were likely to manage them: SC-Mn (mean = 61.7, S.D. = 19.9). Sixty-nine percent reported that they had recognized signs and symptoms of HF that had occurred in the prior month, while 38.5% reported that as far as they aware, they had not known if they had signs and symptoms of HF, because they could not identify those symptoms, if they occurred. Respondents were overall very confident of their ability to perform self-care: SC-Sc (mean = 66.1, S.D. = 17.0) (Table 3).

Quality of life:

The generic measure of QOL used in this investigation was the SF-12 characterizing physical and mental-emotional functioning. On average, participants perceived both their physical functioning as fair (mean = 45.4, S.D. = 22.5) and mental-emotional functioning (mean = 53.3, S.D. = 22.4) as fair (Table 3).

The MLHFQ was used as the second measure to examine disease-specific QOL. The results showed that the participants' perceived their QOL as good (mean = 49.4, S.D. = 27.8) (Table 3). The comparison of SC-Mt, SC-Mn, SC-Sc, MLHFQ, PCS,

Table 2 Means and standard deviations of sample's characteristics characterized by gender

Characteristic	Gender	N	Mean	S.D.
Age (y)	Female	55	58.6	13.2
	Male	43	53.5	13.9
Ejection Fraction (%)	Female	55	23.9	8.1
	Male	43	28.2	7.9
Social support	Female	53	70.6	17.8
	Male	42	72.5	16.8
Length of illness (y)	Female	55	5.0	3.7
	Male	43	5.1	2.9

and MCS between males and females

Using the independent t-test, the findings (Table 4) revealed that there was a significant difference in self-care management strategies between males and females (mean = 68.4 □18.8 vs. 56.6 □19.3 respectively, t = -3.20, p = 0.003). There was also a significant difference in mental-emotional functioning between males and females (mean = 57.37 □22.5 vs. 48.2 □21.4 respectively, t = 2.03, p = 0.045). There were no gender differences in self-care maintenance, self-care self-confidence, disease-specific QOL, and physical functioning (Table 4).

Discussion

Sample characteristics

The demographics of the current study's participants are consistent with those presented in

Table 3 Summary statistics of the model variables

Variables	N*	Mean (S.D.)	Range
Self-Care			
Self-care maintenance (SC-Mt)	97	69.6 (15.6)	35-100
Self-care management (SC-Mn)	82	61.7 (19.9)	17-100
Self-care self-confidence (SC-Sc)	94	66.1 (17.0)	25-100
Generic Quality of Life (QOL): Short-Form Health Survey (SF-12)			
Physical functioning	94	45.4 (22.5)	6-100
Mental-emotional functioning	97	53.3 (25.4)	10-100
Disease-Specific QOL			
Living with Heart Failure Questionnaire (MLHFQ)	98	49.4 (27.8)	0-105

*Number of observations. N = 98

Table 4 Means and standard deviations of SC-Mt, SC-Mn, SC-Sc, LHFQ, PCS, and MCS characterized by gender

Variables	Male		Female		t	P-value
	Mean	S.D.	Mean	S.D.		
SC-Mt	67.7	14.3	71.9	16.8	-1.36	0.304
SC-Mn	68.4	18.8	56.6	19.3	-3.20	0.003**
SC-Sc	65.2	17.5	67.3	16.6	-5.31	0.809
LHFQ	47.9	26.6	51.4	29.5	-0.614	0.300
PCS	45.1	23.5	45.8	21.4	-0.146	0.296
MCS	57.4	22.5	48.2	21.4	2.03	0.045*

*p < 0.05, **p < 0.01

the 2006 national annual update from the AHA[1], which reported the HF population in the United States was at that time comprised of 44% females and 56% males. Additionally, several studies including patients with HF have reported similar demographics.[4,22-28] Thus, participants in our study were representative of the HF patient population.

Approximately 58% of the sample in this study was somewhat functionally impaired (NYHA Class II). Previous studies on the HF population have predominantly been composed of HF patients with NYHA functional Class III heart failure.[4,26-29] Thus, HF participants in the current study were less impaired than participants in other studies. A possible explanation is that 93% of the sample in the current study had been diagnosed with HF less than 10 years prior to measurement and had fewer comorbidities. Also, although characteristics of medical management were not considered in this study, better management of HF and a less symptom burden associated with fewer comorbidities may have influenced these findings.

Descriptive analyses

Social support:

The results from the present study suggest that participants perceived their social support as good. The results of the present study are supported by a study conducted by Bennett, et al.[15], who examined social support and health-related QOL in patients with HF. The researchers reported that, overall, perceptions of social support in patients with HF were moderate to high. Therefore, with respect to social support, findings from the current study are consistent with results of other studies evaluating social support in both the general population and the HF population.

Self-care:

Overall, participants in the current study reported slightly better performance of self-care behaviors than were previously reported by Riegel, et al.[30], who used the same measurement of self-care. The researchers examined self-care in a sample of 758 patients with HF and reported that the mean score for self-care maintenance was 67.8 □17.2; the mean score for self-care management was 60.9 □ 21.3; and the mean score for self-care self-confidence was 65.0 □17.2 (see Table 3 for the mean scores of strategies mean score in the present study).

Also regarding self-care behaviors, a majority (79%) of participants in the current study reported that they recognized signs and symptoms of HF that occurred in the previous month. As symptoms of HF occurred, 51% of the sample reported that they responded quickly to them. It is realistic to expect that, when patients with HF recognize a change in their symptoms, they are able to respond to those symptoms appropriately. Their ability to respond to the changes in signs and symptoms of HF requires an accurate understanding of symptoms, knowledge about appropriate remedies, and proactive approaches. These responses reflect better self-care behaviors in patients with HF.

Quality of life:

Our findings suggest that HF patients believed that both their physical functioning, characterized as physical health and their mental-emotional functioning were fair. These findings are similar to those reported by Ni, et al.[29] who reported that patients with HF perceived their QOL in both physical functioning and mental-emotional functioning as fair. In another study, Ekman, et al.[11] examined health-related QOL in elderly patients with HF as compared to a group of healthy, elderly patients. The researchers reported that elderly patients with HF had poorer physical functioning than healthy elderly patients; however, the HF patients reported better mental-emotional functioning. In contrast, participants in the present study reported their mental-emotional functioning as fair.

In assessing the patients' perceptions of the influence of HF on the physical, socioeconomic, and psychological aspects of life in this study, disease-specific QOL which focuses particularly on patient perceptions concerning the effects of HF on their physical and emotional lives was used. In the current study, participants' perceived their QOL as good. However, numerous studies on QOL, using the MLHFQ in patients with HF, have reported the perception of QOL differently. For example, Ni, et al[29] studied the responsiveness of SF-12 and MLHFQ in patients with HF and reported that patients with HF perceived their disease-specific QOL as fair.

Comparative analyses

The findings (Table 4) of the present study suggest that there are significant gender differences in self-care management, and mental-emotional functioning, with males reporting more frequent use of self-care strategies and better mental-emotional functioning. Some support for this finding is found in previous studies reporting that women had a worse QOL compared with men.[25-26,31-32] One study examining QOL in patients with HF and comparing QOL between men and women found that women had significantly worse QOL in physical, social, and general heath than men.[25] In another study, Chinn and Goldman[33] found that women had significantly worse physical and social functioning QOL than men. It may be that women with HF not only deal with their HF conditions, but they also continue to work outside the home to earn income and perform numerous chores related to keeping up with housework, being caregivers, and maintaining their role in the family (e.g., mother, wife, and grandmother). Therefore, the hardship and the complexity of the tasks related to employment and family roles may have more of an impact on women's mental health than on men's mental health. These findings have some support from earlier studies that reported women with poor physical functioning, more severity of illness, more comorbidities, and lack of social support may be psychologically distressed.[32] However, further investigation is needed to identify factors (e.g., social support, anxiety, depression, role in family) associated with symptoms of HF in women and men that may affect their QOL

Conclusion

Our study demonstrates that there were significant gender differences in self-care management, and QOL, with males reporting more frequent use of self-care strategies and better QOL than females.

References

1. American Heart Association [AHA]. Heart disease and stroke statistics-2006 update [hompage

on the Internet]. Texas: American Heart Association Online Resources [cited 2007 April 2]. Available from: http://www.americanheart.org/presenter.jhtml?identifier=1200026

2. American Heart Association [AHA]. Heart disease and stroke statistics 2004 update [hompage on the Internet]. Texas: American Heart Association Online Resources [cited 2004 January 7]. Available from: http://www.americanheart.org/presenter.jhtml?identifier=1200026
3. Happ MB, Naylor MD, Roe-Prior P. Factors con tributing to rehospitalization of elderly patients with heart failure. J Cardiovas Nurs 1997;11:75-84.
4. Carlson B, Riegel B, Moser DK. Self-care abilities of patients with heart failure. Heart Lung 2001;30:351-9.
5. Moser DK, Mann DL. Improving outcomes in heart failure: It's not unusual beyond usual care [Editorial]. Circulation 2002;105:2810-2.
6. Dodd MJ, Janson S, Facione N, et al. Advancing the science of symptom management. J Adv Nurs 2002;33: 668-76.
7. Artinian NT, Morgan M, Sloan M, et al. Self-care behaviors among patients with heart failure. Heart Lung 2002;31:161-72.
8. Rockwell JM, Riegel B. Predictors of self-care persons with heart failure. Heart Lung 2001;30: 18-25.
9. Chriss PM, Sheposh J, Carlson B, et al. Predictors of successful heart failure self-care maintenance in the first three months after hospitalization. Heart Lung 2004;33:345-53.
10. Chiaranai C. Self-care and quality of life in patients with heart failure. Thai J Nurs Res (Inpress).
11. Ekman I, Fagerberg B, Lundman B. Health-related quality of life and sense of coherence among elderly patients with severe chronic heart failure in comparison with healthy controls. Heart Lung 2002;31:94-101.
12. Riegel B, Carlson B. Glaser D. Development and testing of a clinical tool measuring self-management of heart failure. Heart Lung 2000;29:4-12.
13. Fleury J. Thomas T, Ratledge, K. Promoting wellness in individuals with coronary heart disease. J Cardiovas Nurs 1997;11:26-42.
14. Kaplan RM. Health-related quality of life in cardiovascular disease. J Consul Clin Psych 1998;56:382-92.
15. Bennett SJ, Perkins SM, Lane KA, et al. Social support and health-related quality of life in chronic heart failure patients. Qual Life Res 2001;10:671-82.
16. Stewart A, Ware JE. Measuring functioning and well-being: the medical outcomes study approach. Durham: Duke University Press; 1992.
17. Katz JN, Chang L, Sangha O, et al. Can comorbidity be measured by questionnaire rather than medical record? Med Care 1996;34:73-84.
18. Rector T, Cohn J. Assessment of patient outcome with the Minnesota living with heart failure questionnaire: reliability and validity during a randomized, double-blind, placebo-controlled trial of pimobendan. Pimobendan Multicenter Research Group. Am Heart J 1992;124:1017-25.
19. Riegel B, Moser DK, Glaser D, et al. The Minnesota living with heart failure questionnaire: sensitivity to differences and responsiveness to intervention intensity in a clinical population. Nurs Res 2002;51:209-18.

20. Ware JE, Kosinski M, Keller SD. SF-12: how to score the SF-12 physical and mental health summary scales. 2nd ed. Boston: The Health Institute, New England Medical Center; 1995.
21. Ware JE, Kosinski M, Turner-Bowker DM, et al. How to score version 2 of the SF-12® health survey (with a supplement documenting Version 1). Boston: Health Assessment Lab; 2002.
22. Dillman DA. Mail and Internet surveys: the tailored design method. 2nd ed. New York: John Willey & Sons, Inc; 2000.
23. Evangelista LS, Berg J, Dracup K. Relationship between psychosocial variables and compliance in patients with heart failure. Heart Lung 2001; 30:294-301.
24. Evangelista LS, Dracup K, Moser DK, et al. Two-year follow-up of quality of life in patients referred for heart transplant. Heart Lung 2005;34:187-93.
25. Friedman MM. Gender differences in the health related quality of life of older adults with heart failure. Heart Lung 2003;32:320-327.
26. Gary RA, Sueta CA, Dougherty M, et al. Home-based exercise improves functional performance and quality of life in women with diastolic heart failure. Heart Lung 2004;33:210-18.
27. Westlake C, Dracap K, Creaser J, et al. Correlates of health-related quality of life in patients with heart failure. Heart Lung 2002;31:85-93.
28. Harrison MB, Browne GB, Roberts J, et al. Quality of life of individuals with heart failure: a randomized trial of the effectiveness of two models of hospital-to-home transition. Med Care 2002;40:271-82.
29. Ni H, Toy W, Burgess D, et al. Comparative responsiveness of Short-Form 12 and Minnesota Living With Heart Failure Questionnaire in patients with heart failure. J Cardiac Fail 2000;6:83-91.
30. Riegel B, Carlson B, Moser DK, et al. Psychometric testing of the Self-Care of Heart Failure Index. J Cardiac Fail 2004;10:340-50.
31. Grady PA. Quality of life for patients with chronic illness [hompage on the Internet]. Maryland: National Institute of Nursing Research [cited August 11, 2005]. Available from: http://ninr.nih.gov/ninr/about/legislation/chronic_illness.htm
32. Reidinger MS, Dracup KA, Brecht MA, et al. Quality of life in patients with heart failure: do gender differences exist? Heart Lung 2001;30: 105-16.
33. Chinn MH, Goldman L. Gender differences in 1-year survival and quality of life among patients admitted with congestive heart failure. Med Care 1998;36:1033-46.