

# A Study on Quality of Life of Patients with Congestive Cardiac Failure

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## ABSTRACT

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Quality of life (QOL) is a reflection of a person's mental and physical well-being in their everyday life. Quality of life is an "individual perception of their position in life in the context of the culture and value system in which they live and in relation to their goals, expectations, standards and concerns". The study was aimed to assess and quantify the impact of patient counseling on Quality of life, medication knowledge and compliance of heart failure patients. QOL was assessed using Minnesota living with heart failure questionnaire (MLWHQ). 50 patients seen for the first time at the unit were evaluated. We analyzed the relationship between the questionnaire score and physiological variables such as age, gender, duration of disease, number of drugs and ejection fraction. Medication knowledge was assessed by giving score during interaction with patient and compliance was assessed by pill count. Finally, the patients were counseled and followed. A significant difference in QOL score ( $P < 0.001$ ) and medication knowledge score ( $P < 0.001$ ) was obtained compared to baseline. Most patients (78%) are complied with prescribed regimen. To sum up, patient counseling aided better understanding of their illness and role medications in its treatment and contributed to the development of a patient-led health-related Quality of life.

**Key words:** Quality of life, patient counseling, Heart failure, medication knowledge, compliance.

## INTRODUCTION

Recently the focus of medical care has shifted towards management of chronic diseases, with the aim of optimizing quantity and quality of life.<sup>[1-3]</sup> Quality of life is a reflection of a person's mental and physical well-being in their everyday life.<sup>[4]</sup> The main clinical symptoms in Congestive Cardiac Failure (CCF) are dyspnoea, tiredness and fatigue, which affect quality of life through their limiting effect on physical functioning,<sup>[5]</sup> but may also give rise to psychological problems, adverse treatment effects and social limitations.<sup>[3,6]</sup> These factors may lead to individuals withdrawing from activities and social contact, and consequently experiencing a loss of social relationships and social support.<sup>[7]</sup> Increasing severity of CCF leads to the individual being aware of their own mortality, which contributes to depression, sleep disturbances and anxiety.<sup>[6]</sup> Personal relationships, eating, sexual activity and the ability to work are all limited while paralleled by an increasing dependence on others.<sup>[6]</sup> The prevalence of CCF in India was 18.8 million per year (1.76%) of the total population and the

incidence was 1.57 million per year (0.15%).<sup>[8]</sup> According to W.H.O, QOL is defined as "an individual perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns."<sup>[9]</sup>

QOL information is important to pharmacists in three ways:<sup>[10]</sup>

1. QOL outcomes are increasingly being used to evaluate drugs in clinical trials.
2. QOL data can also be used to evaluate provider performance. Performance of health care providers is evaluated based on health outcomes achieved.
3. QOL assessment could be a useful tool for monitoring the progress of patients receiving drug therapy. Improvement in QOL may be the main goal of treatment in patients with some diseases like Rheumatoid Arthritis, CCF. In these diseases, the therapeutic goal is to avoid impairment in QOL caused by the adverse effects of the drugs, not only because of the distress this impairment causes but also because it may result in Non-Compliance.

Recognizing the usefulness of QOL information, the National Institute of health has included QOL assessments in large scale clinical trials evaluating the treatment of Cardio

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Vascular System diseases, Diabetes Mellitus, and QOL assessment in clinical practice.<sup>[10]</sup>

QOL assessment has possible application in clinical practice:<sup>[9]</sup>

1. To identify unexpected health related problems.
2. To monitor disease progression or response to therapy.
3. To enhance provider- patient communications.

### Measuring QOL:

There are hundreds of health related quality of life instruments. A primary distinction among quality of life instruments is whether they are generic or specific.

#### 1. Generic Instruments:<sup>[11-12]</sup>

Generic QOL instruments are designed to be applicable across all diseases or conditions, across different medical intervention and across a wide variety of populations. For instance, Nottingham Health Profile, Quality of Well Being Scale.

#### 2. Specific Instruments<sup>[11-12]</sup>

Specific instruments are intended to provide greater detail concerning particular outcomes, in turns or functioning, uniquely associated with a condition or its treatment. For example Disease specific (Eg; Diabetes Mellitus), Population Specific (Fairly elderly).

## QUALITY OF LIFE IN CCF

An important goal of medical therapy for patients with heart failure is to improve how patients feel and function during daily activities. The effect of treatments on a patient's life style or QOL is critical to the evaluation of medication for chronic heart failure management of patients with CCF aims not only to increase survival but also to improve QOL.<sup>[10]</sup>

QOL was assessed by Minnesota living with heart failure questionnaire. The living with heart failure questionnaire is a patient self assessment measure being developed to evaluate therapeutic response to interventions for heart failure.<sup>[13]</sup>

Minnesota living with heart failure questionnaire contains 21 questions focusing on the patients' perception of the effect of heart failure on their lives. These include questions regarding psychological, emotional, social and economical limitations. The patients selected a number from 0 to 5 as the response to each question, 0-indicates that heart failure had no effect and 5- indicates a very large effect. Therefore a high score indicates poor QOL.<sup>[13]</sup>

Counseling helps the patient to take the medication in a manner that is most likely to achieve the desired therapeutic response. Appropriate advice, and counseling by the pharmacist will make the patient understand better about their medication which have become potent and toxic with the advancement of science this will in turn increase patient compliance, which can otherwise result in inappropriate or inadequate use of drugs.<sup>[14-17]</sup>

### Medication knowledge and adherence:<sup>[18]</sup>

Patients do not always understand prescription instructions and may forget considerable portions of what clinicians tell them. It is well recognized that many patients have a poor understanding of the terminology that is often used by doctors in communicating details about their illness, and many patients have little or no understanding of the details of their medication regimen. Patient compliance or adherence may be defined as the extent to which a patient takes or uses medication in accordance with the medical or health advice given.

The objective of the study is to assess and quantify the effect of patient counseling on Quality of Life of patients with congestive cardiac failure

## METHODOLOGY

The Prospective Interventional Study was carried at Rajah Muthiah Medical College Hospital, Chidambaram, Tamil Nadu, between November 2009 to April 2010. Patient who shall satisfy the inclusion criteria were enrolled in the study for collection of base line data and details about their prescription. Patients were then assessed for their Quality Of Life and medication knowledge and compliance.

### Quality of life:

Patients answered the 21 items using a 6-point response scale (0-5). The total summary score (Global Score) can vary from 0 to 105; a lower score reflects better QOL. Three subscale scores (dimensions) reflect physical (questions 2, 3, 4, 5, 6, 7, 12 and 13) and emotional (questions 17, 18, 19, 20 and 21) impairment and the other items are related to financial, medication side-effects, and lifestyle considerations (overall dimensions).<sup>[13, 19-22]</sup>Score is obtained by summing response to all 21 questionnaires.

### Medication Knowledge

Patients answered the questions; for grading, knowledge regarding each aspect of this response was expected to each question. Each response is assigned a particular score and

then finally the scores were added to get total score of the patient. High score indicates good medication knowledge & low score indicates poor medication knowledge.

### Compliance Assessment (Self assessment)

Self assessment form contains a grading scale of compliance with this form patients will grade their compliance according to their perception, Never followed prescribed regimen, Sometimes follow prescribed regimen, Compliant half of the time, Compliant most of the time, Compliant all the time. It also contains factors which effect patient compliance, Forget fullness, confusion, Apathy, health beliefs, Dissatisfaction, cost of medication, others.

### Patient Counseling

Patient in the study group were counseled. The session last 5-10 min. counseling was given bilingually (both in Tamil & English). Information was tailored according to the understandings of the patients. Follow up of patient was carried out during their successive monthly appointments. The patients were followed at a period of 30 d, 60 d, and 90 d intervals.

All the data available were tabulated and they were analyzed. Statistical Analysis of data was done using student's 't' test and ANOVA.

## RESULTS

A total of 55 patients were enrolled in the study. In these 55 patients complete data of only 50 patients were available for analysis for QOL, medication knowledge and compliance. Remaining 5 patients could not be followed within study period.

### Baseline Characters of Patients

Out of 50 patients included in the study 45 (90%) patients were males and 5 (10%) patients were females. (Table -1, Figure-1)

Out of 50 patients included in the study patients age  $\leq 45$  are 8 (16%), 46-55 are 16 (32%), and 56-65 are 19 (38%) and  $>66$  are 7 (14%). (Table -1, Figure-2)

Out of 50 patients included in the study were taking  $\leq 2$  drugs are 8 (16%), 3 drugs are 31 (62%) and  $\geq 4$  drugs are 11 (22%). (Table -1, Figure-3)

Out of 50 patients included in the study ejection fraction  $\leq 20$  was 4 (8%), 21-30 was 19 (38%), 31-40 was 15 (30%) and

$\geq 41$  was 12 (24%). (Table -1, Figure-4)

Out of 50 patients included in the study duration of disease 0.5-3 years was 23(46%), 4-7 years was 14(28%), and  $\geq 8$  years was 13 (26%). (Table -1, Figure-5)

Out of 50 patients included in the study 5 (10%) patients belonged to NYHA classification II, 10 (20%) patients belonged to NYHA classification III and 35 (70%), patients belonged to NYHA classification IV. (Table -1, Figure-6)

Other than congestive cardiac failure, 8(16%) patients had COPD, 31(62%) had Hypertension, 28(56%) had diabetes mellitus, 19(38%) Ischemic heart disease 8(16%) had hyperlipidaemia, 13(26%) had Myocardial Infarction, 13(26%) had other co-morbidities. (Table -2, Figure-7)

### Quality Of Life: (Table -3, Figure-8)

Mean scores for QOL at end of the study of was  $23.86 \pm 10.03$  compared to  $34.3 \pm 13.52$  of baseline

### Effect of Gender on Quality of Life: (Table -4, Figure-9)

For males' baseline QOL was  $34 \pm 13.55$  and final score was  $24.29 \pm 10.35$ .

For females' baseline QOL is  $33.8 \pm 14.86$  and final score was  $20.4 \pm 5.89$ .

### Effect of Age on Quality of Life: (Table -5, Figure-10)

For age group  $\leq 45$  years the baseline QOL was  $27.63 \pm 9.85$  and the final score was  $19.5 \pm 9.78$ .

For age group 46-55 years the baseline QOL was  $34.06 \pm 16.71$  and the final score was  $22.19 \pm 10.95$

For age group 56-65 years the baseline QOL was  $38.16 \pm 12.22$  and the final score was  $27.59 \pm 9.78$ .

For age group  $> 66$  years the baseline QOL was  $32 \pm 11.09$  and the final score was  $22.5 \pm 6.65$ .

### Effect of Number of Drugs on Quality of Life: (Table -6, Figure-11)

For patients taking  $\leq 2$  drugs the baseline score was  $26.38 \pm 12.21$  and the final score was  $20.25 \pm 10.48$ .

For patients taking 3 drugs the baseline score was  $34 \pm 12.58$  and the final score was  $23.23 \pm 9.18$ .

For patients taking  $\geq 4$  drugs the baseline score was  $40.91 \pm 14.78$  and the final score was  $28.27 \pm 11.39$ .

**Effect of Duration of Disease on Quality of Life:** (Table -7, Figure-12)

For patients with duration disease of 0.5 – 3 years the baseline score was  $29.5 \pm 13.69$  and the final score was  $21.86 \pm 10.96$ .

For patients with duration disease of 4-7 years the baseline score was  $38.67 \pm 10.22$  and the final score was  $24.87 \pm 7.47$

For patients with duration disease of  $\geq 8$  years the baseline score was  $37.69 \pm 14.89$  and the final score was  $26.62 \pm 11.25$ .

**Medication Knowledge:** (Table -8, Figure-13)

Mean score of medication knowledge at the end of the study was  $15.82 \pm 2.17$  compare to  $9.3 \pm 3.06$  at baseline.

**Medication compliance:**

Out of the 50 patients included in the study, 39 (78%) were compliant with prescribed regimen all the time and 11 (22%) were compliant most of the time. (Table -13, Figure-18).

The reasons cited for non compliance by the patients are 5(10%) forgetfulness, 1 (2%) confusion, 1(2%) dissatisfaction, 1(2%) could not afford the cost of the medication and 3(6%) others as their reasons for non adherence. (Table -15, Figure-20)

## DISCUSSION:

Patient counseling is an integral part of Clinical Pharmacy activities, since it provides an opportunity for Pharmacist to interact with patient and establish a continuing relationship with patients.

An attempt has been made to carry out the work to the best of the ability of the department and persons involved. The results were classified under following broad categories:

1. Baseline characteristics.
2. Quality of life.
3. Medication Knowledge.
4. Medication Compliance.

**Baseline characteristics:**

Out of the 50 patients enrolled in the study, males exceeded females in number. Generally in this population studied male used to come regularly for check up, thus resulting in more male patients in the study.

The number of patients in the age group of 56-65 and 46-55 were nearly equal. The number of patients in age group 45years and 66 were nearly equal because this age group

were the most affected by the disease condition which are focused in this study and actively utilizing the health care system.

The number of patients taking 3 drug were leading over the number of patients taking 2 and 4 groups. Most of the patients were on 3 drug therapy. Patients with duration of disease of 3 years and less dominated other groups of 4-7years and 8years or above. Newly diagnosed patients tend to remain with the healthcare system and as the time progresses dropout increases due to increased dependency on others, this resulted in more number of patients in 3year group.

Patients with Ejection fraction of 21% - 30% dominated others.

The number of patients in NYHA class-4 dominated over classes 2 and 3.

## Quality Of Life

Quality of life can be influenced by various factors such as gender, age, number of drugs consumed, and duration of disease. While studying the effect of Quality of life each of the mentioned factors was taken into consideration and its influence was analyzed separately.

In a study conducted by Mendez.GF et al 2007.<sup>[22]</sup> QOL was measured by the Minnesota Living with Heart Failure Questionnaire (MLHFQ). MLHFQ score was compared between basal vs 6 months follow-up. The MLHFQ had a significant reduction with basal condition from the first evaluation. Similarly in our study the mean score in the first, second and third follow up were significant compared to baseline ( $P < 0.1$ ,  $P < 0.01$ ,  $P < 0.001$ ).

Quality of life was higher in females to males, but difference was not significant.

In the third follow up there was a significant difference between the quality of life score of different age groups. Significant difference was observed between the quality life scores of patients in the age group 45 and the group 56-65 ( $P < 0.05$ ).

A significant difference was observed between the quality of life scores of patients with duration of disease 0.5- 3years and patients with duration of disease 8years ( $P < 0.01$ ).

## MEDICATION KNOWLEDGE:

The mean medication knowledge scores in the first, second and third follow up were significant compared to baseline

( $P < 0.1$ ,  $P < 0.01$ ,  $P < 0.01$ ).

### COMPLIANCE:

In this study 78% patients rated themselves as always compliant. 22% patients rated themselves non-compliant. At the end of the study more number of patients was found to be compliant when compared to baseline. In a study conducted by Vitalina Rhozen et al.<sup>[23]</sup> they used self assessment for assessing the compliance. Most patients in their study rated themselves as always compliant. Similarly in our study also most of the patients rated themselves as always compliant.

Only a small percentage of have disclosed their non-compliance. The reasons given by the patients for their non-compliance was forgetfulness, confusion, dissatisfaction, cost of the medication and others like lack of medical stores, out of station and side effects.

Counseling the patient has to address all these issues and develop suitable strategies to overcome these obstacles. For instance, providing medication reminders, switching to less costly medication with the cooperation of the prescriber, asking the patients to refill before medications go stock out and modifying the regimen if the patient had side effects.

### CONCLUSION:

In conclusion, patient counseling aided better patient understanding of their illness and the role of medications in its treatment, improved medication adherence, and contributed to the development of a patient-led health-related Quality of life. Moreover, a good professional rapport has been build between Pharmacist and patients. The counseling service provided by clinical pharmacist was found to be useful and beneficial to the patients of the hospital where the study was carried out. Finally, it is believed that pharmacist and other health care professionals would appreciate the role of pharmacist in counseling and educating the patients and an attempt to extend their services to include patient counseling as one of their service.

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**TABLE 1 Baseline data of patients**

Factors	No. of Patients
Gender	45 (90%)
Male	5 (10%)
<b>Age</b>	
≤ 45	8 (16%)
46-45	16 (32%)
56-65	19 (38%)
> 66	7 (14%)
<b>No. of drugs</b>	
≤ 2	8 (16%)
3	31 (62%)
≥ 4	11 (22%)
<b>Ejection fraction</b>	
≤ 20	4 (46%)
21-30	19 (38%)
31-40	15 (30%)
≥ 41	12 (24%)
<b>Duration of disease</b>	
0.5-3 Y	23 (46%)
4-7 Y	14 (28%)
≥ 8 Y	13 (26%)
<b>NYHA Classification</b>	
II	5 (16%)
III	16 (20%)
IV	35 (70%)

**TABLE 2 Means Score of QCL**

No of patients	Base line	Follow up 1	Follow up 2	Follow op 3
50	34.3 ± 13.52	29.32 ± 11.42 (a)	25.78 ± 11.06 (b)	23.86 ± 10.03 (c)

**TABLE 3 Effect of age on QOL score**

Age (Years)	Base line	Follow up 1	Follow up 2	Follow up 3
≤ 45	27.63 ± 9.85	25.13 ± 10.02	21.38 ± 9.56	19.5 ± 9.78
46-55	34.06 ± 16.71	27.44 ± 17.11	25.50 ± 12.61	22.19 ± 10.95
56-65	38.16 ± 12.22	33.21 ± 10.88	30.89 ± 10.92	27.59 ± 9.78 (a)
≥66	32.00 ± 11.09	27.86 ± 08.91	25.00 ± 08.60	22.05 ± 06.65

a= P< 0.05

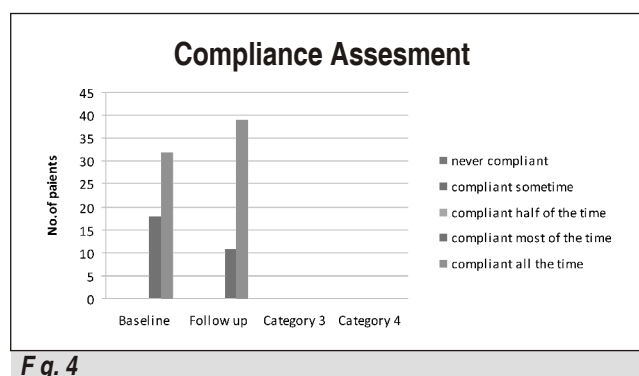
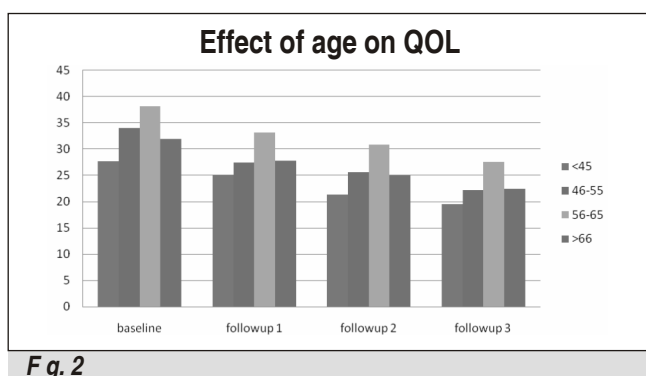
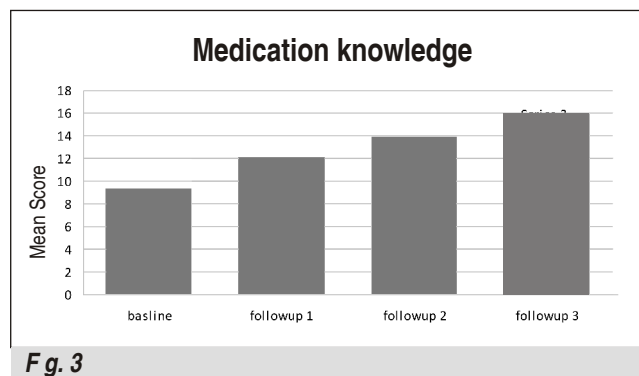
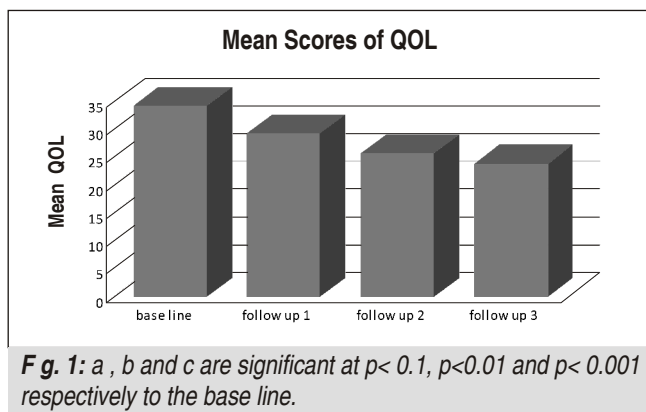
**TABLE 4 Mean score for medication knowledge**

No. of Patient	Base line	Follow up 1	Follow up 2	Follow up 3
50	9.3 ± 3.07	12.08 ± 3.21(a)	13.92 ± 2.87(b)	15.85 ± 2.17(c)

a, b and c are significant at P< 0.1, P<0.01, P<0.001 compared to the base line.

**TABLE 5 Self assessment of Compliance**

Rating	Base line	Final follow up
Never compliant	—	—
Sometimes compliant	—	—
Compliant half of the time	—	—
Most of the times compliant	18 (36 %)	11 (22 %)
Compliant all the time	32 (64 %)	39 (78 %)



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