

**Quality of Life of Adult Patients Who Have Undergone Cardiac Surgery  
at No. (1) Defence Services General Hospital (1000 Bedded)**

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A hospital-based, cross-sectional descriptive study design was conducted to study the quality of life of adult patients who have undergone cardiac surgery at cardiac Out-Patient Department, No. (1) Defence Services General Hospital (1000 Bedded), Mingaladon using combination of qualitative and quantitative methods in 2012. For quantitative data, a total of 55 respondents were interviewed using WHOQOL-BREF (World Health Organization, Quality of life) questionnaire. Six out of them selected through purposive sampling method were semi-structure interviewed to support the quantitative findings. The Kruskal-Wallis H and Mann-Whitney U test were used for statistical analysis of relationship between study variables. Postoperative median scores of Quality of Life (QOL) scale revealed an improvement in all dimensions except psychological with average of 50% of the respondents. Consistently, most respondents expressed their quite often negative feelings such as anxiety and worry after surgery. However, responses on QOL to their lives were mostly satisfied. Psychological QOL scores were affected by their education ( $p=0.022$ ). There were strong relationship between marital status, occupation, family income, family member and environmental domain scores at  $p<0.05$ . However, there was no significant relationship between socio-demographic and QOL regarding physical and social domain. Findings of this study highlighted that psychological support is an essential part of care programs following surgery and consideration should be put on the patients with low socio-demographic status. Provision of complete health information and comprehensive services for cardiac patients were recommended so as to increase QOL among them.

*Keywords:* Quality of life, WHOQOL-BREF, Cardiac surgery, Satisfaction, Cardiac rehabilitation

## INTRODUCTION

The cardiac surgery is one of the advanced and effective interventions with proven positive outcomes to prolong length of stay and achieve the quality of life although the outcome of the surgery is not always perfect due to the nature of surgery, the preoperative planning, intraoperative process and the impact, severity of comorbidities in the patients and long-term rehabilitation

planning.<sup>1</sup> Adverse psychological and physical functioning can be found as late as six months following cardiac surgery.<sup>2</sup> Quality of life (QOL) is fast becoming a standard measure of outcomes in clinical trials, cost effectiveness analysis and clinical practice. Thus, improvement in QOL is considered to

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be one of the principle goals of cardiac surgery.<sup>3</sup> QOL is generally conceptualized as a multi-dimensional construct made up of a number of independent domains including physical health, sychological well-being, social relationships, functional roles and subjective sense of life satisfaction.<sup>4</sup> Each QOL domain can be assessed from the point of view of the clinician, client or caregiver, and the relative weighting of the importance of each domain can also vary from one observer to another since it is a subjective construct which varies with the population studied.

Traditionally, evaluating outcome of post cardiac surgery has focused on objective measures of cardiovascular status alone. Nowadays, the emphasis has extended to examining an individual's QOL as well. The QOL achieved is unique and may vary from one person to another and depend on many factors including cultures, beliefs, socio-economic status, demographic data and presence of health and illness. There were limited studies about their perceived QOL and satisfaction after cardiac surgery.

Through the assessment of QOL of adult cardiac surgery patients, health care personnel including nurses will have a better understanding of what to expect after the surgical intervention to provide effective rehabilitation program and ways of a daptation in future life. The findings of this study will aid the health care providers in determining the success of cardiac surgery, their satisfaction, expectations, and perceived QOL after cardiac surgery in order to provide holistic health care to these patients for their better and positive health outcome.

## MATERIALS AND METHODS

Hospital-based, cross-sectional descriptive design combined with both quantitative and qualitative method was used to study the quality of life of adult patients who have undergone cardiac surgery at No. (1) Defence Services General Hospital (1000 Bedded), Mingaladon and cardiac out-

patient department was selected as the study area. This study lasted from August 2012 to January 2013. The sample size was calculated by estimating single population proportion with a specific level of precision for quantitative method.<sup>5</sup>

$$n = z^2 pq / d^2$$

n =sample size

p =proportion of post cardiac surgical patients who had good quality of life=0.5

q =1- p=0.5

z =reliability coefficient=1.96 (for 95% CI)

d =margin of error=0.14

n =(1.96)<sup>2</sup> (0.5) (0.5) / (0.14)<sup>2</sup> = 49

A total of 55 respondents with estimated drop-out rate of 10% involved for quantitative study. And, six participants were purposively recruited as one from each type of cardiac surgery for qualitative data collection. Inclusion criteria were any patients who underwent Coronary Artery Bypass Graph (CABG) and or valve replacement for at least three months after successful operations and who aged 18 years and above.

However, any patients with cardiac surgery who were critically or mentally ill, and those who had language barriers or poor communication were excluded. Quantitative data were collected by conducting face-to-face interview using pretested, structured questionnaire which consisted of three parts: part (A) had concerning socio-demographic, comorbidities, type of surgery and time since surgery; part (B) WHOQOL-BREF (adopted from World Health Organization (WHO) and part (C) was interview-guided questions.

### *Analysis*

Quantitative data were analysed by (SPSS) 16.0 version Software System. Frequency tables were employed for description of socio-demographic characteristics of population. Raw scores for QOL were summed straightforward and transformed using formula. The relationships between type of surgery, time since cardiac surgery,

socio-demographic variables and four domain QOL scores were analysed by using Kruskal-Wallis H test for more than two groups and Mann-Whitney U test for within two groups. Qualitative data were analysed by using content analysis.

#### *Ethical consideration*

Approval from the Research Ethics Committee of Military Institute of Nursing and Paramedical Sciences and informed consents were obtained.

## RESULTS

Socio-demographic information and biomedical characteristics are shown in Table 1. Regarding general questions about quality of life, no one who accepted their QOL as poor while 85.5% (47) respondents who accepted as good QOL and 8(14.5%) of them responded neutrally. Majority of the respondents (46, 83.6%) had good satisfaction with their own health, and few had neutral and poor satisfaction. In qualitative finding, some participants had both good perception and satisfaction about their own health although two out of six participants did not clearly express their quality of life and only revealed satisfaction.

The physical domain involves questions related to activities of daily living, discomfort and pain, energy and fatigue, sleep patterns, mobility, capacity to work and need for medical aid to lead daily life. The percentage of response concerning mobility, satisfied sleep, activity of daily living, capacity to do work found satisfactory responses in 72.7%, 67.3%, 58.2% and 43.6%, respectively. From qualitative assessment, all respondents could not do as a normal person does as much as before they suffered this disease. One of them expressed as follows:

*“I could not drive long and work very hard as before. Sometimes I feel unsatisfied for reducing my capability of working.”*  
(U Zaw)

Table 1. Socio-demographic characteristics of the respondents (n=55)

Characteristics	Frequency	(%)
<i>Age (Year)</i>		
≤45	16	29.1
46 to 60	26	47.3
>60	13	23.6
<i>Sex</i>		
Female	24	43.6
Male	31	56.4
<i>Marital status</i>		
Single	8	14.5
Married	42	76.4
Widow/Widower	5	9.1
<i>Education</i>		
Primary	5	9.1
Middle	24	43.6
High	16	29.1
Graduate	10	18.2
<i>Occupation</i>		
Dependent	21	38.2
Self-employed	13	23.6
Employed	21	38.2
<i>Family income (MMK/month)</i>		
≤150000	20	36.4
150001-300000	13	23.6
>300000	22	40.0
<i>Family member (Person)</i>		
1-3	21	38.2
4-6	29	52.7
7-9	5	9.1
<i>Ethnicity</i>		
Bamar	50	89.1
Kayin	1	1.8
Rakhine	1	1.8
Others	4	7.3
<i>Religion</i>		
Buddhist	51	92.8
Christian	2	3.6
Muslim	2	3.6
<i>Comorbidities</i>		
Arthritis	21	38.2
Renal disease	1	1.8
Diabetes	5	9.1
Hypertension	22	40
No disease	6	10.9
<i>Type of surgery</i>		
Cabg	22	40
Valve replacement	33	60
<i>Time since surgery (months)</i>		
≤12	11	20
13-24	24	43.6
>24	20	36.4

\*Employed=Government servants (both military and civil), employees from private companies and industries

The psychological domain is characterized by questions that portray personal belief, spirituality and religion, positive feeling or way of enjoying life, memory and concentration, acceptance of physical appearance, satisfaction with oneself and frequency of negative feelings. Over half of the respondents (76.4%) stated the negative feeling

quite often. The qualitative findings were consistent with the quantitative data and one of their expressions was as follows:

*“I feel anxious for my disease and I don’t want to suffer again”*

(U Aye)

The domain of social relationships portrays the personal relationships with friends, family and sex life. Over 60% of the respondents showed that their satisfaction to the questions of personal relationship and support from friends. In contrast, 69.1% of them answered with neutral responses about their sexual relationship. Qualitative findings were consistent with quantitative results and a participant said as follows:

*“During my hospitalization, my neighbors came to meet me and bring eatable things for me. They also take care of my home during my absence”*

(Daw Tin)

The environment domain portrays the safety, healthy physical environment, financial resources or income, availability of information, leisure, housing conditions, access to health services and means of transportation. It was found that satisfied responses with 78.2%, 61.8% and 65.5%, respectively, at home environment, accessibility of health services and transportation. Moreover, one participant expressed follows:

*“ I have no problem to come for follow-up care at OPD and it is the most reliable and there are people who saved my life there. So it is not a problem for me at all.”*

(Daw Nyo)

In Table 2. there was no significant relationship between socio-demographic variables and physical domain as well as social domain scores. However, a significant difference occurred in education on psychological scores at  $p=0.022$  and between marital status, occupation, family income, family member with environmental domain at  $p$  levels of 0.046, 0.024,  $<0.001$ , and 0.027, respectively. In psychological domain, six pairwise comparisons for different education groups by using Mann-Whitney U

test showed that statistically significance was evident only between primary school and graduate group at  $p=0.006$ . The level of QOL with respective domains is presented in Fig. 1.

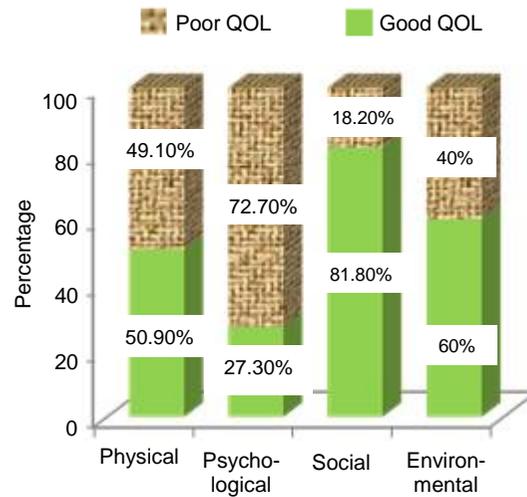


Fig. 1. Level of QOL among the respondents (n=55)

Table 2. Relationship between socio-demographic and QOL domains (n=55)

Characteristics	n	Physical domain	Psychological domain	Social domain	Environmental domain
<b>Age (Year)</b>					
≤45	16	( $X^2$ ) 0.282	0.744	2.918	2.204
46 to 60	26	df=2	df=2	df=2	df=2
>0	13	(p) 0.869	0.689	0.232	0.332
<b>Marital status</b>					
Single	8	( $X^2$ ) 0.154	4.902	0.096	6.159
Married	42	df=2	df=2	df=2	df=2
Widow/Widower	5	(p) 0.926	0.086	0.953	0.046*
<b>Education</b>					
Primary	5	( $X^2$ ) 4.139	9.610	5.821	4.276
Middle	24	df=3	df=3	df=3	df=3
High	16	(p) 0.247	0.022*	0.121	0.233
Graduate	10				
<b>Occupation</b>					
Dependent	21	( $X^2$ ) 3.873	2.543	1.23	7.457
Self-employed	13	df=2	df=2	df=2	df=2
Employed	21	(p) 0.144	0.280	0.541	0.024*
<b>Family income (MMK/month)</b>					
≤150000	20	( $X^2$ ) 4.105	4.601	1.531	16.635
150001-300000	13	df=2	df=2	df=2	df=2
>300000	22	(p) 0.128	0.100	0.465	0.001*
<b>Family member</b>					
1-3	21	( $X^2$ ) 5.912	5.331	4.704	7.231
4-6	29	df=2	df=2	df=2	df=2
7-9	5	(p) 0.052	0.070	0.095	0.027*

\* Significance level  $<0.05$

In addition, three pairwise comparisons for marital status showed that statistically significant difference was evident only between single and widow/widower group at  $p=0.013$ . Median score of environmental domain in widow/widower was significantly and higher than that in single group. Similarly, median score of environmental domain in self-employed group was higher than that of dependent group at  $p=0.015$ . Then, a significant difference was observed between groups of  $>300,000$  MMK/month and  $\leq 150,000$  MMK/month at  $p<0.001$ . Likewise, there was a significant difference between family income group of  $>300,000$  MMK/month and  $150,001-300,000$  MMK/month at  $p=0.002$ . Moreover, it was found that four to six family members group had higher in median scores of environmental domain than that of one to three family members group at  $p=0.006$ . There was no significant relationship between quality of life domains with gender as well as with biomedical characteristics in the present study.

## DISCUSSION

Most of the participants revealed that satisfaction with their own health was consistent with qualitative findings where all expressed their satisfaction after surgery. This finding matched with the study by Khin Zarni Myint<sup>6</sup> describing “believing surgery was a good escape though they felt some uncomfortable”.

According to physical domain responses, most of the respondents satisfied with all physical activities. In contrast, qualitative findings showed that all participants could not get back to normal life after receiving cardiac surgery. This was consistent with the study of Gardner, *et al.*<sup>7</sup> where they stated that the surgery and recovery represent a life changing event for some where QOL may improve, but important sequels remain failure to return to full function. There was no statistically difference between socio-demographic variables and physical domain. Thus, health care provider or nurse should

provide necessary information regarding length of recovery, lifestyle modification, side-effects of medication and ways to enhance quality of life to both patients and family caregivers.

Regarding psychological domain, majority of the respondents expressed negative feelings such as despair, anxiety, depression, frustration, experience of loss of memory, decreased concentration. Thus, the nurse needs to enhance the patient’s confidence through various strategies: observing others, persuasion and previous experience to facilitate the patient’s post-operative behaviours. Moreover, education has some influences on psychological domain scores. The median scores of graduates were significantly higher than those of the respondents with lower education according to pairwise comparison. Similarly, LeGrand, *et al.*<sup>8</sup> found that there was a significant relationship between education and psychological domain. Therefore, it can be concluded that education level is fundamental in improving QOL of cardiac surgery patients.

Most respondents reported that their satisfaction was grasped from good personal relationship and social support from friends, relatives and their working environment. However, two thirds of them gave neutral responses to their sexual relationship. Thus, health care personal must take into account it even though there is an ignoring factor in sexual relationship due to culture. Although no differences between socio-demographic and social domain, the health care provider should refer the patients to the suitable social support group after surgery. Jenkins, *et al.*<sup>9</sup> and Hanlon and Smith<sup>10</sup> also agreed that social support was taken as a coping resource enhancing physical and psychological wellbeing following surgery.

In the environmental domain, majority were satisfied with home environment, accessibility of health services and transportation. A statistically significant difference existed between marital status, occupation, family income, family member and environmental

scores at p levels of 0.046, 0.024, 0.001 and 0.027, respectively. These findings highlighted that providing information or counselling program regarding cardiac rehabilitation and referral to the social support groups were needed to focus on that group.

Generally, cardiac patients had a good QOL after surgery and it was significantly improved when compared with their pre-operative status<sup>14</sup>. However, adverse physical and psychological functioning can be found as late as six months following surgery<sup>2</sup>. Their findings were consistent with the present findings as about half of the respondents achieved good QOL in physical but most of them had poor in psychological domain. Providing good psychological support is important for enhancing recovery and alleviating distress. Progressive and complete recovery will help the respondents achieve and maintain the full benefits of procedures for many years to come and feel sound health in their mind. It was also found that most of the respondents achieved good QOL in social and environmental domain. It can be assumed that the support from the family, relatives and social environment in terms of physical, psychological and financial support would improve the QOL after cardiac surgery.

There is no statistical relationship between gender, age and QOL domain scores as well as between type of surgery, time since surgery and QOL. These findings were contrast with the results of the studies.<sup>11</sup> It might be due to small sample size in this study and the result might alter to some extent if there were a larger number of sample sizes.

### *Conclusion*

The goal of health care interventions today is to manage, alleviate or eradicate physical illness, mental illness, and ultimately improve patient's quality of life. Cardiac surgery also intends to relieve dreadful sufferings from various heart diseases and achieve prolongation of life expectancy. Identifying quality of life and the influence

of socio-demographic, biomedical variables on four domains is the necessary part of health research activities as it can be applied in clinical practices of post-surgical patients.

The present study revealed good perception and satisfaction in general questions from majority of respondents and higher percentage of satisfaction concerning physical domain questions with moderate required amount of energy and medical aids without surgical pain. However, they had adapted well to daily life with moderate negative responses in psychological domain. Regarding social domain, satisfaction for achieving personal and social support and neutral responses to sexual relationship in most respondents were found not surprisingly in this study. Concerning environmental domain, satisfactory responses with limited financial support and transportation for some respondents were identified.

When looking into whether good or poor QOL, all domains were good except psychological scores. It could be concluded that psychological aspect of cardiac surgery patients needs to be focused more particularly in post-operative life. In addition, poor QOL scores were found in low in education, family income, family members; dependent group; single respondents; and available resources are needed to provide by focusing them.

The present study has discovered that some socio-demographic variables had influenced the QOL of patients and it increased after surgery though the sample size was small. Based on the findings, it could provide insights for all health care providers from cardiac team to promote a systematic cardiac rehabilitation program. Formulating this program and directing towards the patients with low socio-demographic status should be provided to improve the quality of life of cardiac patients. Apart from this, capacity building for health care personnel should be arranged to provide holistic health care for them.

In order to apply and promote the comprehensive care to cardiac surgical patients, the followings are recommended. Further

studies of comparison of quality of life in adult cardiac surgery in multi centres should be conducted with adequate sample size using longitudinal method. And studies for determinants of quality of life of patients after cardiac surgery using multi assessment tools should also be conducted.

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