

Problems Faced by Clients with Heart Valve Replacement in Selected Cardiac Hospitals of Kathmandu

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Abstract

Rheumatic heart disease (RHD) is a major contributor for the heart valve damage that ultimately requires prosthetic valve replacement surgery. The study entitled “problems faced by clients with heart valve replacement in selected cardiac hospitals of Kathmandu” was done to find out the problems faced by clients after heart valve replacement and its association with socio-demographic and disease related variables.

Descriptive, exploratory study was conducted among adult clients of two tertiary hospitals of Kathmandu. One hundred and twelve clients were purposively selected and information on physical, psychological, social and economical problems was collected using modified Short Form 36 (SF 36) health survey questionnaire through interview method. Kruskal Wallis ‘H’ and Mann-Whitney ‘U’ test were used for identifying the association between research variables.

Half of the respondents (50.9%) reported having fatigue and 32.1% experienced chest pain in a mild form. Discomfort was the most common problem experienced by 37.5% in a moderate degree. The clients with the less than 12 month duration of surgery had more physical problems. Nearly half (46.4%) of them found to be sad, depressed and had lost interest most of the time. Also, 30.4% were found to be worried and anxious about the future all the time. Regarding social problems, nearly 39.3% had no interaction with the other people. 42.8% had not participating in social, religious activities at all. 80.3% respondents answered decreased follow up frequency, 62.6% told family disputes, 57.0 mentioned increased debts, and 47.7 told marital disharmony as chief problems due to financial constraints.

The study findings conclude that clients suffer from a variety of physical, psychological, social and economic problems after heart valve replacement. For that reason, study indicate the need for increasing Government’s fund for heart valve diseases, regular provision of educational sessions and counseling services before surgery to all clients including their families about these problems so that possible complications and sufferings could be reduced and prevented.

Key words: Rheumatic heart disease, Valve replacement, Client

Introduction

Globally, Rheumatic Fever (RF) and Rheumatic Heart Disease (RHD) is one of the commonest cardiovascular diseases in children and young adults. Developing countries have documented the incidence of RF as high as 206/100 000 population and RHD prevalence as high as 18.6/1000 population (Alkhalifa, Ibrahim & Osman, 2008).

RHD is the most common cause of valve damage. The valve disease occurs in 30-45% of RF patients (Guilherme, Kohler, & Kalil, 2011). Currently, approximately 75,000 heart valve replacements are performed per year in the United States. Globally, the annual number of patients requiring heart valve replacement is estimated to triple from

approximately 290,000 in 2003, to over 850,000 by 2050 (Yacoub, & Takkenberg, 2005). According to Annual report of Sahid Gangalal National Heart Center, Nepal (2010), among the open heart surgery cases, 2nd commonest open heart surgery is for valve replacement which constituted 32 % of all surgeries.

Valve replacement surgery presents various physical, psychological, social and economic troubles. After valve replacement, functional outcomes vary and patient's physical quality of life is unlikely to be normal as before (Rimington, Weinman, & Chambers, 2010). Psychosocial factors, such as anxiety, depression, and inadequate social support result in worse prognosis, high medical costs, and higher mortality after the cardiovascular surgeries (Cserep et al., 2010). Socioeconomic deprivation is an independent predictor of poor cardiovascular outcome (Taylor et al., 2003).

Methods

Descriptive exploratory research design was used. Study was conducted at Manmohan Cardiothoracic Vascular & Transplant Center (MCVTC) at Teaching complex, Maharajgunj and Sahid Gangalal National Heart Centre (SGNHC) located at Bansbari, Kathmandu. Among 295 valves replaced clients (SGNHC-235, MCVTC-60), 112 adult clients who attended surgical outpatient department of respective hospitals and who had already undergone valve replacement surgery of any of heart valve with a minimum one month post surgical duration were purposively selected and interviewed. Modified Short Form 36 (SF 36) health survey questionnaire was used and information on physical, psychological, social and economical problems was collected through interview method. Data were collected after obtaining permission from the research committee and concerned authorities. All the participants were requested for voluntary participation, and obtained the informed consent before collecting data. Data were analyzed using SPSS version 16. Kruskal Wallis 'H' and Mann-Whitney 'U' test were used for identifying the association between research

variables.

Findings

The mean age of the respondents was 35.08 years and 61.6% were female. Majority of them (75%) were married and 73.2% were literate. Agriculture was the occupation of 39.3% respondents. More than half of the respondents (55.4%) belonged to lower class. Furthermore, 42.8% of the respondents were from the post surgery duration of 25 month and above.

Regarding physical problems, half of the respondents (50.9%) reported having fatigue and 32.1% experienced mild chest pain. Moderate discomfort was the most common problem experienced by 37.5% of the respondents. Only 8.9% had discomfort in a severe degree where as very few reported severe chest pain and difficulty breathing (1.8%).

Regarding the rating for severity of psychological problems, nearly half (46.4%) expressed as being angry and irritable some of the time. Nearly half (46.4%) of the respondents found to be sad, depressed and had lost interest most of the time. Likewise, 30.4% were found to be worried and anxious about the future all the time. Regarding the rating for none of the time, 19.6% respondents blamed self or felt guilty none of the time.

Likewise, on social problems, nearly one third (39.3%) respondents had no interaction with the other people. Nearly half of the respondents (42.8%) had not participating in social, religious activities at all. 42.9% respondents had not discussing problems with their families any of the time. Similarly on economic problems, most of the respondents (80.3%) answered decreased follow up frequency, 62.6% replied family disputes, 57.0% answered increased debts and 47.7% replied marital disharmony as chief problem due to financial constraints.

Regarding the association between physical problems with age groups, only difficulty in breathing and discomfort were significantly associated with the age group of 50-60 years ($p < 0.05$). Gender and educational level were not significantly associated

with physical problems. The duration of surgery (1-12 month) had significant association ($p < 0.001$) with physical problems (Table 1). Regarding the association of psychological problems with gender and occupation, females and the clients with agriculture occupation had a significant association ($p < 0.05$) with psychological problems (except for some variables). But marital status had no association ($p > 0.05$) with psychological problems (Table 2).

Furthermore, there was significant association between gender (female) and social problems ($p < 0.05$) i.e. female respondents were having more social problems. The findings also revealed association between social problems and marital status (married) ($p \leq 0.05$) except for one variable ($p = 0.519$). Also significant association observed between occupation (service) and social problems (Table 3).

TABLE 1
Association between Physical Problems with Selected Socio-demographics

Variables	Age	Gender	Educational Level	Duration of Surgery
	(n=112)	(n=112)	(n=82)	(n=112)
	<i>p-value</i>	<i>p-value</i>	<i>p-value</i>	<i>p-value</i>
Chest Pain	0.583	0.568	0.047	<0.001*
Difficulty in Breathing	<0.001*	0.236	0.059	0.003*
Palpitation	0.053	0.061	0.115	<0.001*
Fatigue	0.151	0.083	0.060	0.004*
Discomfort	0.030*	0.719	0.346	<0.001*

* $p \leq 0.05$ significant

Table 1 reveals about the association between physical problems with selected demographics. For calculating the association between age groups, Kruskal-Wallis test was applied. Findings revealed that only difficulty in breathing and discomfort was significantly associated with the age group of 50-60 years ($p \leq 0.05$). Similarly, Mann-Whitney test was applied for gender which revealed that gender was not significantly associated with physical problems. Likewise, educational level was calculated by applying Kruskal-Wallis test and it was not significantly associated ($p > 0.05$). Mann-Whitney test was applied for duration of surgery also which revealed that respondents with the post surgery duration of 1-12 month were having more physical problems ($p < 0.001$).

TABLE 2
Association between Psychological Problems with Selected
Socio-demographics

Variables	Gender	Occupation	Marital Status
	<i>p</i> -value	<i>p</i> -value	<i>p</i> -value
Felt sad, depressed, lost interest	0.005*	0.005*	0.908
Felt worried & anxious about the future	0.005*	0.001*	0.511
Felt angry & irritable	<0.001*	0.113	0.091
Felt worn-out/ less valuable	0.005*	<0.001*	0.905
Felt despair over health problems	0.001*	0.002*	0.538
Blamed oneself for things, felt guilty	<0.001*	0.103	0.520

* $p \leq 0.05$ significant

Table 2 shows the association between psychological problems with selected socio-demographics. Mann-Whitney test was used for calculating association between psychological problems and gender; and it revealed significant association between psychological problems and females ($p \leq 0.05$). Similarly, Kruskal-Wallis test was applied for calculating association between occupation and psychological problems, clients with agriculture occupation were significantly associated ($p \leq 0.05$) except for some variables ($p = 0.113, 0.103$). Likewise, Mann-Whitney test was applied for marital status which concluded that marital status was not associated with psychological problems.

TABLE 3
Association between Social Problems with Selected Socio-demographics

Variables	Gender	Marital Status		ⁿ⁼¹¹² Occupation
	<i>p</i> -value	<i>p</i> -value		<i>p</i> -value
Decreased interaction with the other people	0.001*	0.005*	<0.001*	
Decreased participation in social, religious, entertaining activities	0.002*	0.004*	0.001*	
Not discussing problems with family members	0.002*	0.519	0.066	

* $p \leq 0.05$ significant

Table 3, about association between social problems with selected demographics highlights that between gender and social problems, females were having more social problems ($p = 0.001, 0.002$, Mann-Whitney test). Similarly, Mann-Whitney test was applied for calculating marital status which revealed that married respondents were having more social problem ($p = 0.004$) except for one variable ($p = 0.519$). For calculating occupation, Kruskal-Wallis test was applied and respondents with service occupation were associated with more social problems ($p = <0.001, 0.001$) except for one variable ($p = 0.519$).

Discussion

Clients suffer from several problems after the replacement of heart valve which are identified in various studies conducted in many settings. This study revealed fatigue, chest pain and discomfort as the most commonly experienced physical problems after surgery both in mild and moderate degree. Similar finding was reported by Elliott et al., (2006), which reported that the fatigue persisted 1 to 2 years post surgery along with continuing chest pain with 20% of patients reporting persistent severe to very severe pain 12 months post surgery. Additionally, a significant association was found between duration of surgery and physical problems which is consistent with the study result by Zhao et al., (2007) which reported that scores for most of the short-form 36 domains were depressed at 1 month; however, after 12-month lags, dramatic improvements were achieved in physical and psychological aspects.

In relation to the psychological problems, this study revealed that 46.4% of the respondents expressed as being sad, depressed and lost interest and 37.5% of the clients replied being angry and irritable most of the time. This finding is supported by the study result by Shih et al., (1997) as cited in Lopez et al., (2007), which reported that psychological problems after a cardiac surgery are very common including anxiety,

depression, restlessness, irritability, panic and anger due to feelings of powerlessness, lack of control, and reduced self esteem. According to the study by Lopez et al., (2007), it has been reported that up to 25% of open heart surgery (coronary artery bypass graft and heart valve replacement) patients have negative emotional states such as anger, anxiety, hostility and depression after cardiac surgery. Similarly, study findings also revealed that women had significantly higher psychological problems than men after valve surgery. This is consistent with a study conducted by Myken et al., (1995) which revealed that females had a significantly lower level of emotional status and coping capacity than males after the open heart surgery.

Regarding the social problems, study findings showed that less 39.3% respondents answered as having no interaction with the other people and 32.1% replied as having some interaction with others. Similarly, nearly half of respondents (42.8%) had no participation in social, religious and entertaining activities at all. Regarding discussing problems with family members, only 25.9% respondents used to share the problems most of the times with family whereas nearly half of them (42.9%) never discussed problems with family. This result is consistent with the study findings of Oxman et al., (1995), which mentioned that among 232 respondents, 97 had socially participated and 135 respondents had no social participation. Likewise, 132 patients had never or rarely attending religious services and 100 had monthly attending religious services. Study findings also revealed that most of the female participants lack interpersonal interaction, religious/social participation and social and family support. This findings is supported by the study (Artinian & Duggan, 1995 as cited in Lopez et al., 2007), which stated that women were found to have a higher social interaction problems than men which may be related to lack of emotional support from others since women were more likely be unemployed than men.

In relation to the economic problems, study finding revealed that most of the respondents (80.3%) answered decreasing follow up frequency as a major problem due to a result of financial constraints followed by 62.6% who answered family disputes. Likewise, increased debts and marital disharmony were mentioned by more around half of the clients, 57.0% and 47.7% respectively. Similarly, socioeconomic characteristics showed more than half respondents (55.4%) belonged to lower socioeconomic status. This finding is supported by the study findings of Theobald & McMurray, (2004), which concluded that ongoing anxiety and stress, relationship maladjustments; financial problems and the effect on family life were significant outcome after cardiac surgery.

Conclusion

Fatigue and discomfort are the most common physical problems experienced by the clients following heart valve replacement. Relating to psychological problems, sadness, anxiety, lost interest, anger and irritability are found to be prime psychological problems. Lack of interpersonal interaction, religious/social participation and social and family support are likely to be the major social problems. Correspondingly, psychological and social problems are likely to be present more on female compared to male. Equally the study findings also unveil that decreased follow up and family disputes as prime problems resulting from financial constraints.

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