HEALTH RELATED QUALITY OF LIFE FOR PATIENTS AFTER MITRAL VALVE REPLACEMENT SURGERY

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ABSTRACT: *Background: Mitral valve disease is becoming a public health problem due to increasing life expectancy and new treatment methods for mitral valve replacement, mitral valve replacement surgery can be a challenging and stressful life event, however, patient experiences after mitral valve replacement surgery are inadequately described. **Aim of the study**: The aim of this study is to assess health related quality of life for patients after mitral valve replacement surgery. **Design** A descriptive exploratory research design was used to achieve the aim of this study. **Setting** the study was carried out in the outpatient and cardiothoracic unit at Beni–Suef University Hospital. **Sample** A purposive sample of all available patients (N=60). **Tools:** Two tools were used to collect the data. **I** - self – administration questionnaire **II** world health organization quality of life SF12 assessment questionnaire. **Results**: less than a quarter of the studied patients had a satisfactory level of knowledge regarding mitral valve disease. Less than half of the studied patients had low quality of life level and less than a third had a high quality of life level. A statistically significant relation was found between patients' level of knowledge job, gender, and educational level. There is no statistically significant relation found between patient's quality of life and their age, gender, marital status, gender, job, and level of education. **Conclusion**: It concluded that less than a quarter of the studied patient had a satisfactory level of knowledge Overall the study has indicated that, the majority of the studied patients had educational, Physical, Psychological, Social, and mental needs to improve their QOL **Recommendations:** Further research is recommended to carry out on larger sample to determine patient's quality of life needs.*

KEYWORDS: Health Related Quality of Life, Mitral Valve Replacement.

INTRODUCTION

Heart valve disease is becoming a public health problem due to increasing life expectancy and new treatment methods Heart surgery can be a challenging and stressful life-event, however, patient experiences after heart valve surgery are inadequately described.[26] While heart valve disease progress, symptoms develop, including dyspnea, fatigue, syncope and palpitations. Once symptomatic, heart valve disease severely restricts the performance of daily living and heart valve surgery often is inevitable. Until recently, surgical valve replacement with open heart surgery was the only effective treatment option. Though, this procedure is associated with higher morbidity and mortality in the elderly compared to younger patients.[7] Thus, surgical valve replacement is not always suitable for elder patients. Interventional cardiology, such as Transcatheter mitral Valve Implantation (TMVI) techniques, has emerged as an alternative treatment to open-heart surgery to elder patients. Procedural success, faster recovery and favourable clinical outcomes in the short term have been reported. Overall mortality does not differ significantly between TMVI and traditional heart surgery, and duration of hospital stay is equal. However, length of stay in intensive care unit is shorter for TMVI patients, though, 30 day mortality and risk of major stroke seems to be increased for the TMVI group. [21]   Regardless the surgical technique, post-surgery, co-morbidity affects quality of life, and fragile patients are at risk of developing depression, anxiety or post-traumatic stress disorder. Patients can feel changed during their illness, leading to lifelong fragility. Also, at discharge and returning home the feeling of vulnerability and worries about transition phases appear, and a fear of information gap can be dominant. To better plan proper after care, describing and understanding patients' perception of recovery after heart valve replacement is essential.[43] Knowledge in the field of patient experiences after heart valve surgery is still lacking, especially studies focusing solely on patients after heart valve surgery. Therefore, the present study aimed to explore patient experiences of health recovering heart valve replacement, both traditional open-heart surgery and transcatheter valve replacement. This was done by having them describe experiences of daily living after hospital discharge, including current health problems and thoughts about the future, which will be useful when developing clinical guidelines concerning after care for this growing group of patients. [24]

Aim of the Study:

The aim of this study is to assess health related quality of life for patients after mitral valve replacement surgery

SUBJECTS AND METHODS

Study Design, Setting, and Sample

A quantitative, descriptive, cross-sectional design was used in this study. The design is useful in describing the study construct as it is suitable in terms of individuals and resources. This study was carried out at Beni Seuf University hospital in Beni Seuf city. Sample size was calculated using Stephem Thompson Formula [α=0.05, power=0.5, N=70). After calculation, the study sample was 60, in which 60 (100%) have responded to participate to the study questionnaire. A convenience sampling method was used to recruit the study participants.

Ethical Considerations

An official approval and permission from Scientific Research Ethical Committee in Faculty of Nursing in Helwen University and Beni Seuf University hospital before starting the study were obtained before conducting the research. The aim of the study was explained to the participants and verbal consent was obtained. The anonymity, privacy of the participants, confidentiality of the data, and the right to refuse to participate or refuse to participate and withdraw from the study were assured.

DATA COLLECTION

Interview Questionnaire: it was designed by the investigator based on literature review (Doenges, etal., 2019) &(Raja, 2020) and was written in simple Arabic language to gather data consisted of three sections: *First part:* It concerned with socio-demographic characteristics of the patient with mitral valve replacement surgery, it will include: age, educational level, jobs, residence, and marital status. *Second part*: It concerned with patient past history include medical history& surgical history ,screening test history and family history. *Third part:* Knowledge Assessment Sheet: it used to assess the knowledge of patients about mitral valve disease and replacement surgery including (definition, signs and symptoms, causes, investigations, treatment, complications ,follow-up and patient life style) was adapted from (Doenges, etal., 2019) &(Raja, 2020) . The total (highest) score for knowledge domain was(24), and the lowest score was (1). The participants' perceptions are classified For 75-100% was considered satisfactory level of knowledge (18-24degree). less than 75% was considered unsatisfactory level of knowledge (<18 degree). Tool II. quality of life tool was adopted from *Ware, Kosinski, Keller, 1996*) it was used to assess health related quality of life for patients with mitral valve replacement surgery. This tool was developed by World health organization (WHO) at 1996 to assess health related quality of life and it was updated at 2002. The WHOHRQOL-SF12 comprises the following eight domains (physical function, physical role ,bodily pain, general health, vitality, social function , emotional role and mental health) . The total (highest) score for QOL domain was poor quality of life (20-5), average quality of life (20-30), high quality of life (30-40) .

Statistical Analysis

Statistical Package for Social Science (SPSS) version24 was used to tabulate and analyze the data. The statistical procedure which has been used include descriptive statistics such as means, standard deviations, frequencies and percentages, and inferential statistics such as independent sample

RESULTS

The study sample consist of 60 participants, distributed as 48.7% of the studied patients were males, 51.3% were females. The mean and standard deviation values of age were 41.35 ± 10.33 years old. 43.3% were primary educated, 25% were illiterate. 35% of the studied patients were house wives, 33.3% were manual workers, 21.7% were officers, while 5% were retired. As regards social status; 65% were married, 5.0% were divorced, 5% were

widowed, while25% were singles .Concerning family income, 95% of the studied had insufficient income, while 5% had enough income. 68.3% didn't have health insurance, while 31.7% had an insurance. 88.3% of the studied patients were living with their family, while 11.7 were living alone.((Table 1)

Figure (1) shows that majority of the studied patients did not have enough knowledge regarding the mitral valve disease surgeries. Figure (2) shows that 45%of the studied patient had a low level of total quality of life, 38.3% had an average QOL, while only 16.7% had a high level of QOL.

Table (3) shows that there was no statistically significant among the studied patients regarding correlation between knowledge, age , marital status, place of residence and family income with P-Value (0.401, 0.526, 0.371, 0.725) respectively. There was a statistically significant indirect (negative) among studied patients regarding correlation between patient knowledge, gender and job with P-Value (0.000, 0.001). There was a statistically significant direct (positive) among studied patients regarding correlation between patient knowledge and educational level, i.e an increase in educational level had an increase in patient knowledge with P-Value (0.000).

Table (4) showed that, there was no statistically significant among the studied patients regarding correlation between QOL, age, gender, educational level, marital status, place of residence, job and family income with P-Value (0.346, 0.277, 0.645, 0.590, 0.079, 0.190, 0.894) respectively. Table (5) showed that, there was no statistically significant among the studied patients regarding correlation between knowledge and QOL with P-Value (0.689).

Table (1) Frequency and Percentage distribution of Demographic Characteristics of the Studied Patients (n=60)

Items	The studied Patients (n=60)	
	No	**%**
Age group: -		
20 - 30	13	21.7
30 - 40	16	26.7
40 - 50	21	35
50 – 60	10	16.7
Age (Mean± SD)	41.35±10.33	
Gender		
male	29	48.3
female	31	51.7
Weight		
60 -70 Kg	16	26.7
70 - 80 Kg	27	45
80 -90 Kg	13	21.7
> 90 Kg	4	6.7

Items	The studied Patients (n=60)	
	No	%
Weight (Mean± SD)	73.9±13.31	
Place of residence: - rural urban	34 26	56.7 43.3
Educational status: - Illiterate Reading and write Primary Secondary	15 3 26 16	25 5 43.3 26.7
Family income (from patient view): - Sufficient Insufficient	3 57	5 95
Marital status: - Married Single Widow Divorce	39 15 3 3	39 15 3 3
Job Housewife Manual work Officer Retired	21 20 13 6	35 33.3 21.7 10
Health insurance: - Yes No	19 41	31.7 68.3
Medication cost: - free at the state expense Free with some expenses (x-rays and analyses)	13 47	21.7 78.3

Table (2)Frequency and percentage distribution of the studied patient's knowledge regarding mitral valve disease (n=60)

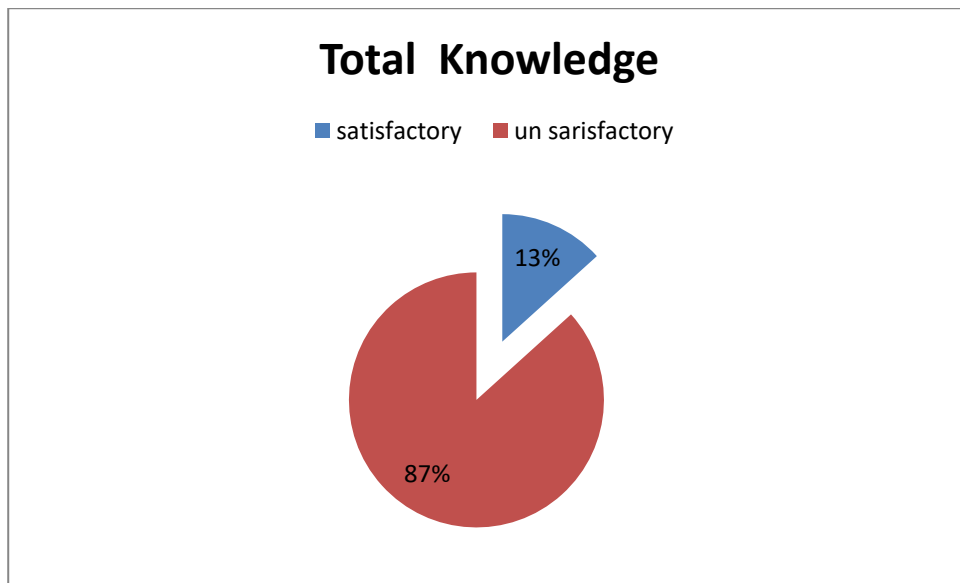| Items	The studied Patients (n=60)			
	Correct		Incorrect	
	No	%	No	%
Definition of mitral valve replacement	34	56.7	26	43.3
Signs and symptoms of the disease	27	45	33	55
Methods of management for disease	19	31.7	41	68.3
Complications occur after valve replacement	25	41.7	35	58.3
Symptoms of bleeding due to the use of anticoagulant drugs	15	25	45	75
Symptoms of cerebral stroke	28	46.7	32	53.3
Symptoms of infection	21	35	39	65
Regular checkups patient should do	11	18.3	49	81.7
Appropriate time (INR) examination after surgery	11	18.3	49	81.7
Correct action in case of a constipation, you should	25	41.7	35	58.3
Methods of getting proper nutrition	35	58.3	25	41.7
Correct action to avoid swelling of the legs	28	32	46.7	53.3

Figure (1) Total knowledge of the Studied Patient about mitral valve replacement (n=60).
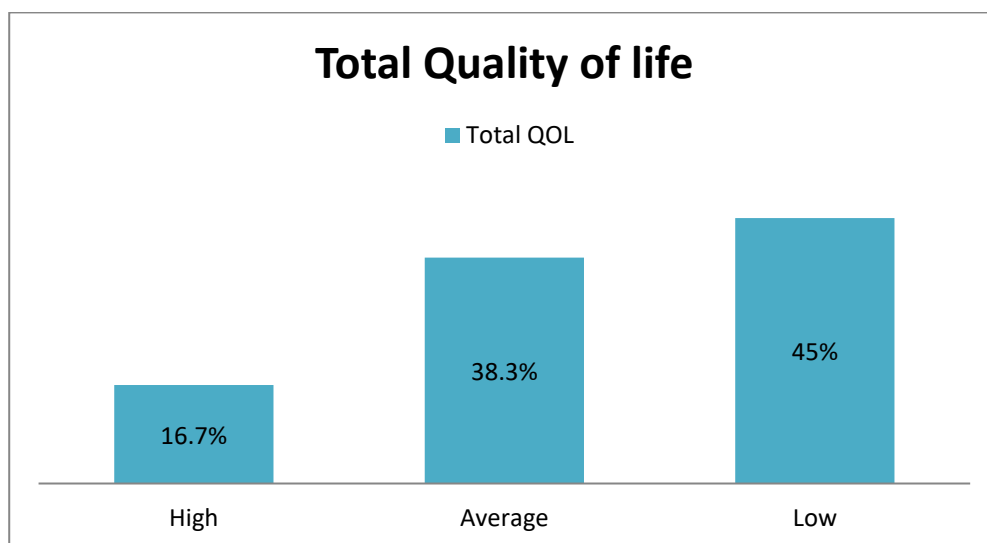

Figure (2): Total quality of life of the Studied Patient after mitral valve replacement (n=60).

Table (3) Correlation between patient Knowledge and socio-demographic characteristic:

Items	Patient Knowledge	
	Correlation Coefficient	*P*-value
Age	0.11	0.401
Gender	-0.611	0.000*
Educational level	0.460	0.000*
Marital status	-0.083	0.526
Place of residence	0.118	0.371
Job	0.428	0.001*
Family income	0.046	0.725

*: Significant at P ≤ 0.05

Table (4) Correlation between QOL and socio-demographic characteristic:

Items	QOL(SF-12)	
	Correlation Coefficient	*P*-value
Age	0.124	0.346
Gender	0.143	0.277
Educational level	0.061	0.645
Marital status	0.071	0.590
Place of residence	-0.229	0.079
Job	-0.172	0.190
Family income	-0.018	0.894

*: Significant at P ≤ 0.05

Table (5) Correlation between patient Knowledge and QOL:

Items	Patient Knowledge	
	Correlation Coefficient	*P*-value
QOL(SF-12)	0.053	0.689

*: Significant at P ≤ 0.05

DISCUSSION

The result of current study showed that the mean age of patient with mitral valve replacement was 41.35±10.33 years . This result was agreement with the study carried out by *Schnittman, et al* [42] who assess "Survival and long-term outcomes after mitral valve replacement in patients in California and New York hospital and reported that less more than half of patient with mitral valve replacement were living with most of the survivors in the age range of 41-50years. this findings may be due to long prognosis of disease ,sign and symptoms take long time to appear on patient and affect his daily life activities.

However, the finding disagreed with these of study carried by **Salzwedel, et al [40] who assess** Patient-reported outcomes predict return to work and health-related quality of life six months after cardiac rehabilitation reported that, the age distribution of patient with mitral valve replacement ranged from 50 t0 70 years with the most survivors in the age range of 40 to 80years .

Regarding place of residence the current study showed that, more than half of the patient with mitral valve replacement life in rural area. This finding is agreement with Ramzy [37] who assess health related quality of life after heart valve replacement in Alexandria and mina hospitals and showed that more than half of the patient with heart valve disease life in rural areas the possible explanation for this result is present lack of study that provided health education about preventive and periodically check-up for early detection for disease causes

Ex (congenital malformation, rheumatic heart disease and coronary artery disease) and good prognosis. This result could be due to low socioeconomic status, absence or decrease follow up and low educational level of patient living in rural that may lead to mitral valve disease .

This result are also revealed by Huang, et al [24] who Compared quality of life in patients who underwent mechanical mitral valve replacement between the Star GK and the SJM valve in the Chinese population. Demonstrated that more than half of the sample was living in rural area .

The result of current study showed that the mean weight of patient with mitral valve replacement was 73.9±13.31 . This result was agreement with the study carried out by Ali, et al [4] who studied the suggested discharge guide line for patient undergoing percutaneous balloon valvotomy in Ain shams university hospital ,the weight distribution of patients with mitral valve replacement ranged from 45 to 80 kg with the most mean weight of patients were 71±7.95 kg.

However, the finding disagreed with these of study carried by chan, et al [17] who assess the effect of continuous nursing intervention on valve noise related to anxiety and quality of life on patient underwent mechanical mitral valve replacement reported that, the weight distribution of patients with mitral valve replacement was 62±4.1 kg.

As for gender, more than half of the study were female , Valvular heart diseases have long been considered to be similar in men and women and across races/ethnicities. Recently, studies have demonstrated major differences between sexes.as reported by Fleury& Clavel [23] that VHD is more prevalent in females. Gender has a significant association with the

pattern of valvular involvement. The severity of valvular dysfunction and cardiovascular complications had no significant association with gender.

These results were in line with those of Negi, et al [31] who studied gender differences in the epidemiology of rheumatic fever/rheumatic heart disease patient population of hill state of northern india hospital.

Regarding marital status, the majority of the studied sample were married, this might be attributed to the Egyptian social and religious principles which dominate the value of marriage. Similar to the previous reports, the study carried by Bjørnnes , et al.[11] who studied Impact of marital status and comorbid disorders on health-related quality of life after cardiac surgery showed that marital status greatly affected QOL in patient with mitral valve replacement surgery and marital patient are more risky for cardiac disease.

Regarding Level of education, approximately more than two thirds of the studied sample were either illiterates or primary education. this might be to the sample setting where the study was conducted at outpatient Unit , Thoracic and Heart Surgery department of Beni-Suif University Hospital receiving patients coming from rural areas Beni-Suif City with illiteracy prevailing among the majority of them. Educational status was closely associated with the QOL in those patients. The patients graduated from university College had higher QOL scores than those graduated from primary and/or secondary schools.

These results were consistent with Azari , et al [7] who demonstrated that patient with low educational levels were more socially isolated and experienced, and had more stress than men with higher educational levels. patient with low educational levels were twice more likely to die from subsequent cardiac events than those with more education and high level of social support. The author added that more socially isolated men were at greater risk of death following CHD.

Regarding occupation, the findings of the present study revealed that the highest percentage of the patients were house wife and manual workers. This findings could be attributed to variation in the levels of education and occupation were seen to affect some patterns of life style like types of food consuming, performing exercise, or exposure to smoking environment and so on. Conversely, with the study result, Power, et al [36] found that, governmental employees and patients with high socioeconomic status had higher QOL scores as suggested by some pervious reports .

In similar study, Framke, et al., [24] found that further research is required to explain the nature and relationship between occupation and quality of life and wellbeing for persons who experience cardiac surgery , which affect their daily occupations, work stress may the direct cause of cardiac complication after surgery psychological condition may be affected by work effort.

The current study revealed that , most of the studied sample did not have Sufficient monthly income, while more than half have no health insurance, These findings were in agreement with Ali, et- al [4] who studied the suggested discharge guide line for patient undergoing percutaneous balloon valvotomy in Ain shams university hospital ,and reported that more than three fifth of subjects had in sufficient monthly income.

Regarding patient' level of knowledge about mitral valve disease and surgical replacement the current study revealed that more than three quarters of patient under study had unsatisfactory level of knowledge regarding (definition of disease, signs and symptoms of the disease, methods of management for disease, complications occur after valve replacement, symptoms and signs of complication and medication This might be related to study most of subjects were illiterate and primary education also lack of healthy education from hospital staff

This study in agreement with Ali, et al[4] who studied Suggested Discharge Guidelines for Patients Undergoing Percutaneous Balloon Mitral Valvotomy in Ain Shams University hospital Cardiology department, revealed that more three quarters had unsatisfactory level of knowledge regarding mitral valve disease.

In similar study carried by Sousa, et al [45] who assess patient's awareness regarding cardiac valve prosthesis knowledge and risk perception in Portugal reported that, A percentage LESS than half of participants could not identify the reason for valve replacement and quarter could not identify the location for the prosthesis. The majority had regular cardiological surveillance.

The current study showed that all patients who completed the questionnaire did not practice sport and did not know about lemon salt use in food instead of normal salt this result this study in agreement with Ali, et al [4] who studied Suggested Discharge Guidelines for Patients Undergoing Percutaneous Balloon Mitral Valvotomy in Ain Shams University hospital Cardiology department.

Ahmed, et al [1] who studied effect of cardiac rehabilitation program on quality of life of patients undergoing heart valves surgeries in Assiut University declared that Most of patients did not have knowledge about related laboratory investigations, self-care or hygiene and manifestations of infection. Post procedure, life style changes, following prescribed diet and complications were the most persistent educational needs in(65 % & 60 % respectively) of studied patients.

These findings were not supported by Scheckel, Erickson, & Stieve [42] who stated that, nearly two thirds (65 %) of the patients had sufficient pre-procedure knowledge in the fields of dietary guidance, prevention of infection, and treatment methods, while the knowledge regarding percutaneous balloon mitral replacement, its results, and probable complications, were insufficient in more than half of patients, which showed a great increase in post procedure information.

Also Lindman, et al[29] stated that, patients required additional information about post procedure expectations, follow up, and drug management. In addition Okugawa, et al [34] found that patients felt dissatisfied because of inadequate advice given regarding hygiene. Moreover, significant number of participant patients did not have knowledge on post procedure precautions, hospitalization period, infection and discharge instructions, concluded that in facing this problem, patients should be provided with better instructions before the procedure.

The current study revealed that more than one third of patient underwent study had problem to adherence to warfarin therapy, this might de due to same factors including frequent INR monitoring, knowledge about warfarin, recognition of signs of adverse events, and other

factors including the nature of behaviors should be considered while assessing patients' adherence to warfarin therapy this was in the same line with Elsisy, et al [20]

According to total level of quality of life among patient with mitral valve replacement surgery, the current study revealed that less than half of patients were having low quality of life in physical, emotional, social and mental domains. Another study conducted by Ali, et al[4] demonstrated that mitral valve surgeries predictive of significantly worse emotional, physical and social health related to quality of life, and higher depression level. As well the results matched with that of similar study, done by Berg, et al [10]clarified that, impaired physical function and having difficulty in daily works due to cardiac symptoms lead to increase stress and anxiety, which decreased he OOL significantly. On the same line, Zhang, et al[46] clarified that, efficient medical treatment may cause patient to feel better and safe and therefore improves their subjective life quality.

In the same context, Salzwedel, et al [41] supported the finding of the current study, in that the patients with mitral valve replacement had lower health and functional, social and economic, psychosocial/spiritual, and global quality of life scores than those without. Another study carried out by, Borregaard, et al[13] revealed that, mitral valve replacement is associated with significant impairment of health-related quality of life. This result may be due to health care providers didn't take corresponding measurement to improve mitral valve replacement survivors' QOL such as educating patient, continuity of care and health promotion services.

In contrary with Bazylev, et al[9] suggested that, Long-term QOL of patients after surgical treatment of mitral valve disease improves both after valve repair and after valve replacement. After MVR Physical Functioning, Bodily Pain, Vitality and Social Functioning indicators are higher. There are improvements in physical and mental health components. Psychological component of health is higher in patients in the MVR group.

Concerning relationship between socio demographic characteristic of patients with mitral valve replacement and there quality of life the presented study showed that, the there was no significant relationship between patient age and quality of life in which patient aged 45years or more had low quality of life than patient aged less than 45 years. The previous finding was in disagreement with Bazylev, et al[9] who reported that older age increase the probability of lower QOL in the long term after mitral valve surgery.

Concerning relationship between gender of patients with mitral valve replacement and there quality of life the presented study showed that, there was no significant relationship between gender and quality of life. The previous finding was in contrary with Nitsche, et al[33] who studied gender specific differences in valvular heart disease reported that There are important sex-related differences regarding clinical presentation, treatment, and outcomes of patients suffering from valvular heart disease. Females present with a distinct risk profile, which poses unique challenges for the invasive treatment of the diseased valve.

Also Archana, et al[6] who assessed the Anxiety, Fatigue and Sleep Quality of Patients Undergoing Valvular Heart Surgery at Tertiary Care Hospital found that present that postoperative fatigue and female gender are associated. also the study identified highest fatigue levels among women. from the investigator's point of view this finding could be due to women need more psychological support from family and health care team .

Concerning relationship between educational level and marital status of patients with mitral valve replacement and there quality of life the presented study showed that, there was no significant relationship between educational level ,marital status and quality of life . this finding is in disagreement with Al-Ahdal& Abdullah,[3]who studied effect of quality of life in rehabilitation patients following cardiac surgery at Sudan heart center, showed that socio-demographic factors rather than other factors related to surgical procedure could contribute to poor quality of life in which age , gender , marital status and level of education were associated with particular domains of QOL.

However, The previous findings agreed with Rawashdeh, & Alshraideh[39]who studied physiological and psychological determinants of quality of life for patients after cardiac surgery and the associated factors. That In relation to gender, female patients who underwent cardiac surgeries are at greater HRQOL improvement than male patients, while other studies found the contrary, other studies considered male sex is a predictor of improving the level of HRQOL after surgery , and some studies found no significant differences in HRQOL level in both sex after cardiac surgery.

Candelaria, Randall, Ladak, & Gallagher[15] suggested that Physical capacity and physical function play an important role in improving HRQOL after cardiac surgery in literature, after considering the preoperative level of HRQOL as the major determinant of post HRQOL level after cardiac surgery. Older patients with low functional capacity before surgery had a more significant improvement in physical capacity and HRQOL after cardiac surgery.

Also , the previous findings agreed with Liang, et al [28] who studied the Readiness for Hospital Discharge and Its Influencing Factors among Patients with Cardiac Valve Replacement in china Showed that no relationship between the QOL variables such as age , education ,marital status .

Regarding the relation between patient's income and their QOL, the presented study showed that, there was no statistical significant relation between income and QOL. Funding of the study were consistent with Niederseer& Schmied[32] who found that no relation between QOL and economic conditions. Form the investigator's point of view, this finding may be due to money alone is not enough to get a high quality of life but there are other factors like education , self – acceptance and good social status .

Correlation between patient Knowledge and socio demographic characteristic :-

The current study showed that there was a statistically significant indirect (negative) among studied patients regarding correlation between patient knowledge, gender and job .the study revealed that the highest percentage of the patients were house wife, manual workers and Illiterate or primary education. also There was a statistically significant direct (positive) among studied patients regarding correlation between patient knowledge and educational level, an increase in educational level had an increase in patient knowledge.

This finding with in agreement with Caponcello, et- al [16] who stated that further association was found between sociodemographic characteristic patient Knowledge, attitude and practice . on multivariate analysis , it was found that male gender with age >30, secondary or higher level of education and those who have higher job level more likely to have adequate knowledge . from the investigator's point of view this finding could be due to

men who are educated and had good job have a greater opportunity for social interaction hence they get to know more about the disease.

Regarding the relation between patient Knowledge and quality of life the current study showed that there was no statistically significant among the studied patients regarding correlation between knowledge and QOL . this finding with in disagreement with Ambrosetti, et al [5] who conduct a study about cardiovascular rehabilitation From knowledge to implementation and the result where patient who had good knowledge more likely to had moderate or good quality of life . this result might be related to majority of studied population had medically insufficient knowledge about treatment, prescribed diet and life style changes for patients after mitral valve replacement also patient believes about heart surgery .

Regarding the relation between patient life style and quality of life the current study showed that patients who had good practices more likely to had moderate quality of life compared to patients who had poor practices and the difference was a statistically high significant this founding was agreed with Patel, et al[35] who assessed Positive Outcomes of Comprehensive Exercise Program on Restoration of Functional Level and Quality of Life in a Patient with Rheumatic Heart Disease Undergone Mitral Valve Replacement stated that those with more positive attitudes toward physical activity and greater intent to become more physically active, had a higher quality of life . this result could be due to good practices toward regimen of treatment lead to high quality of life.

Regarding the relation between patient life style and knowledge the current study showed that there was no statistically significant among the studied patients regarding correlation between life style and patient knowledge. The previous findings are in disagreement with Khan, et al [26] who studied effect of health education on knowledge regarding post-operative care among patients with mechanical valve replacement and stated that patients with high educational level and more knowledgeable about disease are more likely to know about the benefits of screening and hence better practices.

This finding could be due to more than half of studied patients either primary or illiterate education and the knowledge of the studied patients regarding rest, exercise, personal hygiene and medications after mechanical heart valve replacement was insufficient .

CONCLUSION

Only about 13.3% studied patient had satisfactory level of knowledge and majority of the studied patients had unsatisfactory level of practices regarding life style after replacement surgery, Overall the study has indicated that, the majority of the studied patients had Physical, Psychological, Social, Spiritual and educational needs In addition, the highest needs were, physical followed by, educational ,mental and social and then later psychological. Meanwhile, there was no statistical significance relation between patients' quality of life needs and their characteristics as regards: age, gender, marital status and educational level.

RECOMMENDATION

A continuous educational and rehabilitation program planned and offered on a regular basis to a cardiac patient in cardiothoracic surgery department and outpatient clinic of the cardiothoracic surgery.

Increase patients' awareness about the importance of periodic check up to prevent developing any complications which can affect their quality of life.

REFERENCES

Ahmed, M. A. T., Mohamed, Z. A. E. L., Ghanem, H. M., Attya, A. A., & Abd El Ghany, M. (2016). Effect of Cardiac Rehabilitation Program on Quality Of life of Patients Undergoing Heart Valves Surgeries. *Assiut Scientific Nursing Journal*, *4*(8), 69-77.

Ahmed, O. F., Kakamad, F. H., Almudhaffar, S. S., Hachim, R. H., Najar, K. A., Salih, A. M., ... & Omar, D. A. (2021). Combined operation for coronary artery bypass grafting and mitral valve replacement; risk and outcome. *International Journal of Surgery Open*, *35*, 100393.

Al-Ahdal, S. A., & Abdullah, H. M. A. (2020). Effect of Quality of Life in Rehabilitation Patients Following Cardiac Surgery at Sudan Heart Center, Khartoum, Sudan. *Journal of Cardiovascular Disease Research*, *11*(4), 235-241.

Ali, S., M Khalil, B., M Hegazy, S., & M Kilany, W. (2020). Suggested Discharge Guidelines for Patients Undergoing Percutaneous Balloon Mitral Valvotomy. *Egyptian Journal of Health Care*, *11*(2), 128-142.

Ambrosetti, M., Abreu, A., Corrà, U., Davos, C. H., Hansen, D., Frederix, I., ... & Zwisler, A. D. O. (2021). Secondary prevention through comprehensive cardiovascular rehabilitation: From knowledge to implementation. 2020 update. A position paper from the Secondary Prevention and Rehabilitation Section of the European Association of Preventive Cardiology. *European journal of preventive cardiology*, *28*(5), 460-495.

Archana, J. T., Ankita, S., Gopichandran, L., Devagourou, V., Milind, P. H., & Gauri, S. K. (2020). A Descriptive Exploratory Study to Assess the Anxiety, Fatigue and Sleep Quality of Patients Undergoing Valvular Heart Surgery at Tertiary Care Hospital. *J PerioperCrit Intensive*.

Azari, S., Rezapour, A., Omidi, N., Alipour, V., Tajdini, M., Sadeghian, S., & Bragazzi, N. L. (2020). A systematic review of the cost-effectiveness of heart valve replacement with a mechanical versus biological prosthesis in patients with heart valvular disease. *Heart Failure Reviews*, *25*(3), 495-503.

Bartoli-Leonard, F., & Aikawa, E. (2020). Heart valve disease: challenges and new opportunities. *Frontiers in Cardiovascular Medicine*, *vol7* ,pp77-86.

Bazylev, V. V., Voevodin, A. B., SLASTIN, Y., & Karnakhin, V. A. (2021). Open transaortic implantation of "Medlab-KT" prosthesis. *Angiologiia i Sosudistaia Khirurgiia= Angiology and Vascular Surgery*, *27*(3), 115-124.

Berg, S. K., Zwisler, A. D., Pedersen, B. D., Haase, K., & Sibilitz, K. L. (2013). Patient experiences of recovery after heart valve replacement: suffering weakness, struggling to resume normality. *BMC nursing*, *12*(1), 1-8.

Bjørnnes AK, Parry M, Lie I, Fagerland MW, Watt-Watson J, Rustøen T, et al. (2016) Pain experiences of men and women after cardiac surgery. J Clin Nurs;25(19-20):3058-68

Bjørnnes, A. K., Parry, M., Falk, R., Watt-Watson, J., Lie, I., & Leegaard, M. (2017). Impact of marital status and comorbid disorders on health-related quality of life after cardiac surgery. *Quality of Life Research*, *26*(9), 2421-2434.

Borregaard, B., Dahl, J. S., Ekholm, O., Fosbøl, E., Riber, L. P., Sibilitz, K. L., ... & Møller, J. E. (2020). Employment status before and after open heart valve surgery: A cohort study. *PloS one*, *15*(10), e0240210.

Borregaard, B., Pedersen, S. S., Berg, S. K., Dahl, J., Ekholm, O., Sibilitz, K., ... & Møller, J. E. (2020). What to expect after open heart valve surgery? Changes in health-related quality of life. *Quality of Life Research*, *29*(5), 1247-1258.

Candelaria, D., Randall, S., Ladak, L., & Gallagher, R. (2020). Health-related quality of life and exercise-based cardiac rehabilitation in contemporary acute coronary syndrome patients: a systematic review and meta-analysis. *Quality of Life Research*, *29*(3), 579-592.

Caponcello, M. G., Banderas, L. M., Ferrero, C., Bramlage, C., Thoenes, M., & Bramlage, P. (2020). Gender differences in aortic valve replacement: is surgical aortic valve replacement riskier and transcatheter aortic valve replacement safer in women than in men?. *Journal of Thoracic Disease*, *12*(7), 3737.

Chen, Q. Y., Xu, N., Huang, S. T., Lin, Z. W., Cao, H., Chen, L. W., & Chen, Q. (2020). Effect of continuous nursing interventions on valve noise-related anxiety and quality of life in patients who underwent mechanical mitral valve replacement. *Journal of Cardiothoracic Surgery*, *15*(1), 1-6.

Christensen, A. V., Juel, K., Ekholm, O., Thrysøe, L., Thorup, C. B., Borregaard, B., ... & Berg, S. K. (2020). Significantly increased risk of all-cause mortality among cardiac patients feeling lonely. *Heart*, *106*(2), 140-146

Dabbagh A, Esmailian F, Aranki S. , (2017): postoperative critical care for adult cardiac surgery patient, 2nd edition., springer, p.p294-299.

Elsisy, M. F., Dearani, J. A., Ashikhmina, E., Krishnan, P., Anderson, J. H., Taggart, N. W., ... & Stephens, E. H. (2021). What factors should be considered to improve outcome of mechanical mitral valve replacement in children?. *World Journal for Pediatric and Congenital Heart Surgery*, *12*(3), 367-374.

Essayagh, B., Sabbag, A., Antoine, C., Benfari, G., Yang, L. T., Maalouf, J., ... & Enriquez-Sarano, M. (2020). Presentation and outcome of arrhythmic mitral valve prolapse. *Journal of the American College of Cardiology*, *76*(6), 637-649.

Fioretta, E. S., Motta, S. E., Lintas, V., Loerakker, S., Parker, K. K., Baaijens, F., ... & Emmert, M. Y. (2021). Next-generation tissue-engineered heart valves with repair, remodelling and regeneration capacity. *Nature Reviews Cardiology*, *18*(2), 92-116. https://doi.org/10.1038/s41569-020-0422-8

Fleury, M. A., & Clavel, M. A. (2021). Sex and race differences in the pathophysiology, diagnosis, treatment, and outcomes of valvular heart diseases. *Canadian Journal of Cardiology*, *37*(7), 980-991.

Framke, E., Sørensen, J. K., Andersen, P. K., Svane-Petersen, A. C., Alexanderson, K., Bonde, J. P., ... & Madsen, I. E. (2020). Contribution of income and job strain to the association between education and cardiovascular disease in 1.6 million Danish employees. *European heart journal*, *41*(11), 1164-1178.

Huang, J. S., Xu, N., Sun, K. P., Hong, Z. N., Chen, L. W., Kuo, Y. R., & Chen, Q. (2020). Comparison of quality of life in patients who underwent mechanical mitral valve replacement: star GK vs SJM. *Journal of Cardiothoracic Surgery*, *15*(1), 1-6.

Khan, R. A., Shah, B. A., Noreen, N., Khan, R. A., & Ghani, N. (2020). Effect of Health Education on Knowledge Regarding Post-operative Care among Patients with Mechanical Valve Replacement: A Quasi-Experimental Study. *Asian Journal of Research in Nursing and Health*, 33-41.

Kim, S. H., Cha, S., Kang, S., Han, K., Paik, N. J., & Kim, W. S. (2020). High prevalence of physical inactivity after heart valve surgery and its association with long-term mortality: A nationwide cohort study. *European journal of preventive cardiology*, 2047487320903877.

Liang, L., Cai, Y., Gu, J., Li, H., Huang, S., & Fang, H. (2021). Survey on the Readiness for Hospital Discharge and Its Influencing Factors among Patients with Cardiac Valve Replacement. *Open Journal of Nursing*, *11*(5), 302-314.

Lindman, B. R., Melby, S. J., Quader, N., Sintek, M. A., & Moon, M. R. (2020). Comprehensive Assessment of Primary Mitral Valve Disease: Clinical Presentation, Diagnosis, Medical and Surgical Therapy. In *Valvular Heart Disease* (pp. 103-124). Springer, London

Lomivorotov, V., Kornilov, I., Boboshko, V., Shmyrev, V., Bondarenko, I., Soynov, I., ... & Ponomarev, D. (2020). Effect of intraoperative dexamethasone on major complications and mortality among infants undergoing cardiac surgery: the DECISION randomized clinical trial. *JAMA*, *323*(24), 2485-2492.

Negi, P. C., Kandoria, A., Asotra, S., kumar Ganju, N., Merwaha, R., Sharma, R., ... & Rao, S. (2020). Gender differences in the epidemiology of rheumatic fever/rheumatic heart disease (RF/RHD) patient population of hill state of northern India; 9 years prospective hospital based, HP-RHD registry. *Indian heart journal*, *72*(6), 552-556.

Niederseer, D., & Schmied, C. (2021). Socioeconomic status matters: How can we individualize cardiac rehabilitation according to different socioeconomic needs?.

Nitsche, C., Koschutnik, M., Kammerlander, A., Hengstenberg, C., & Mascherbauer, J. (2020). Gender-specific differences in valvular heart disease. *Wiener klinische Wochenschrift*, *132*(3), 61-68.

Okugawa, S., Shimizu, H., Hayashida, K., Kawamoto, Y., & Tanaka, M. (2020). Changes in the nutritional and activity status of elderly patients within 6 months of transcatheter aortic valve replacement: A mixed methods approach. *Japan Journal of Nursing Science*, *17*(2), e12305.

Patel J, Al Rifai M, Scheuner MT ., et al., (2018) Basic vs more complex definitions of family history in the prediction of coronary heart disease: the multi-ethnic study of atherosclerosis. Mayo Clin Proc 93:1213

Power, N., Deschênes, S. S., Ferri, F., & Schmitz, N. (2020). Job strain and the incidence of heart diseases: A prospective community study in Quebec, Canada. *Journal of Psychosomatic Research*, *139*, 110268.

Raja,shahazadG, (2020);cardiac surgery a complete guide , 1ˢᵗ Edition., Spinger,uk,p.p291-299.