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Research Article

**A CROSS-SECTIONAL STUDY TO ASSESS THE
ASSOCIATION OF MITRAL VALVE STENOSIS SERIOUSNESS
WITH RESPECT TO GENDER AND AGE**¹Dr. Anood Ijaz, ²Dr. Hassaan Afzal, ³Dr. Khadija Nusrat¹Services Hospital Lahore²PAF Hospital Lahore³DHQ Teaching Hospital Sargodha**Abstract:**

Objective: The objective of the research was to find out the relation of the seriousness of mitral valve stenosis with age as well as gender.

Material and Methods: The design of the research was cross-sectional which was completed at the Allied Hospital, Faisalabad from March to November 2017. The number of mitral valve stenosis patients selected for research are two-hundred and fifty. Researcher evaluated the seriousness of mitral valve stenosis with age as well as gender.

Results: The average age of the enrolled patients for research was 38.77 ± 10.33 years. Researcher diagnosis mild stenosis in forty (sixteen percent) patients along with eighty-eight patients (thirty-three percent) of moderate stenosis and one-hundred and twenty-two (forty-nine percent) serious stenosis patients. The researcher also identified important relation of gender and age with the seriousness of stenosis.

Conclusion: Finding of the research declared that huge patients are diagnosed with the most serious mitral valve stenosis. Moreover, stenosis was most frequent in young age category with respect to old age category as well as the seriousness of stenosis expressively related with patient age. With respect to men, women largely become a victim of mitral valve stenosis and expressive relation was identified in the seriousness of stenosis and gender.

Keywords: Mitral Valve Area (MVA), Mitral Stenosis (MS).

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INTRODUCTION:

The most general reason for mitral stenosis (MS) is rheumatic fever and MS is also the most common valvular heart lesion [1]. Almost twenty-five percent of the entire individuals along with rheumatic heart complication have separate MS, as well as forty percent have associated MS along with mitral regurgitation. The number of mitral stenosis cases identified with multivalve involvement was thirty-eight percent along with thirty-five percent aortic valve damaged, six percent tricuspid valve, as well as pulmonary, was also infrequently damaged. The characteristic variation in mitral valve appears as rheumatic fever, identification character is dense at the leaflet corners, commissures fusion, chordal decreasing as well as fusion [2]. Concluding the seriousness of mitral stenosis is too much significance for the prognostic as well as therapeutic causes [3]. The seriousness of mitral stenosis can be examined clinically along with different inquiries. The seriousness of mitral stenosis can be assessed clinically through unstated, categorize by NYHA categorizations, a record of pulsation on exercise, cough as well as hemoptysis, improper development, common respiratory tract disease, common hospitalization due to pulmonary edemas, and post thromboembolic phenomena [4]. For the evaluation of mitral stenosis, 2D echocardiography is the benchmark [5]. The MVA can be calculated through planimetry, half-time stress, persistence equation, as well as proximal velocity surface zone technique [6]. In a research by Shaikh AM, et al, the periodicity of the seriousness of MS (detected on 2D echo-planimetry mitral valve area cm was presented as (42.4% moderate), (30.3 % mild) and (27.3% severe) [7]. Direct calculation of mitral valve area through planimetry is appropriate however it largely depends on the operator and little bit time laborious. The dependability of the "pressure half-time method" is influenced by variation in left ventricular conformity. The transmittal acclivity is too compared with mitral stenosis seriousness [8]. The management of MS builds upon the seriousness of the disease. That would effect prognostic as well as treatment values. This is significant to diagnose the periodicity of seriousness, like a maximum of the patients display behind time in our region because of general quackery rehearsal as well as unawareness of health in a developing state just like Pakistan. This will assist us in arranging as well as preparing its program of this specific management.

MATERIALS AND METHODS:

The design of the research was cross-sectional which was completed at the Allied Hospital, Faisalabad from March to November 2017. The number of

mitral valve stenosis patients selected for research are two-hundred and fifty including both sexes, twenty to fifty-year age of patients as well as time period of indication/symptoms was one to twelve month. Researcher taken recommendation for research from organizational review panel along with written approval from entire selected patients. Entire those patients who pass through any previous surgical as well as interventional process heart complication management, patients with dissatisfactory images or bulky mitral valvular calcification restraining the appropriate calculation of cuspal division. The patients with the time period of indication/symptoms below 1 month and more than 1 year, thermodynamically unbalanced patients and all those patients having systolic blood pressure less than 90mm of Hg were expelled from the research. The researcher takes demographic information and a thorough record and examines post medical history. The seriousness (mild, moderate and severe) of the MS was marked as per the results of 2D echocardiography (benchmark).

Mitral valve area of 1cm^2 or minor by planimetry or pressure half-time technique, called as severe MS, whereas moderate MS were define as mitral valve area between 1cm^2 to 1.5cm^2 by planimetry or pressure half-time technique called moderate MS and mitral valve area of additional to 1.5cm^2 by planimetry or pressure half-time technique called mild MS. Researcher recorded entire data on Performa along with data entry and determination by utilizing SPSS software as well as displayed the quantitative variants as average and SD and qualitative variant as periodicity. Researcher managed consequences amender by categorization of gender, age and time period of indication/symptoms to see the consequences of these on result variants i.e. mild, severe and moderate as well as used a chi-square test for post categorization and a p-value less than or equal to 0.05, considers as expressive.

RESULTS:

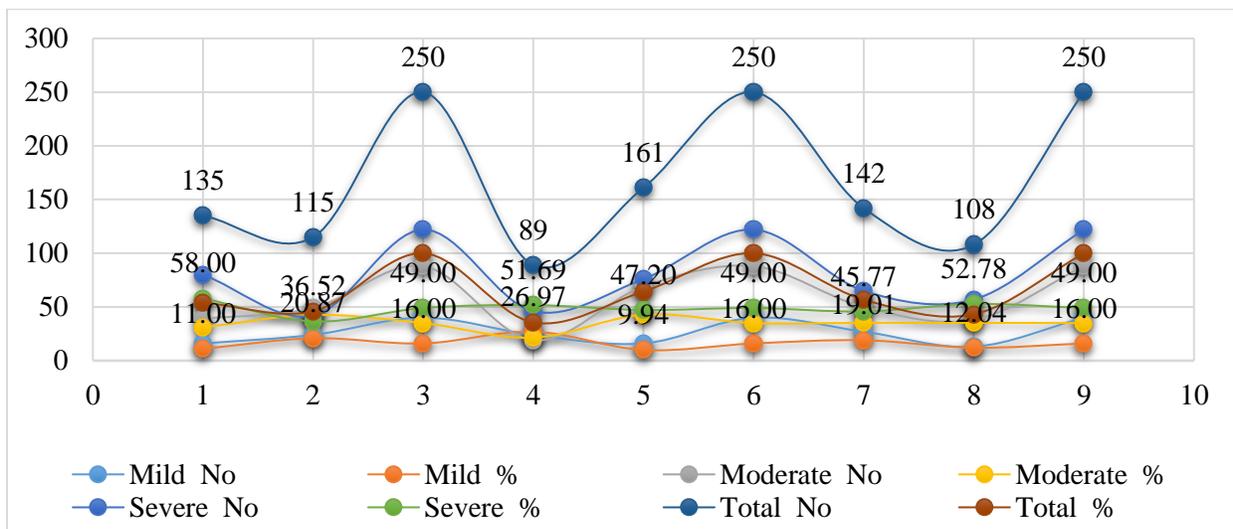
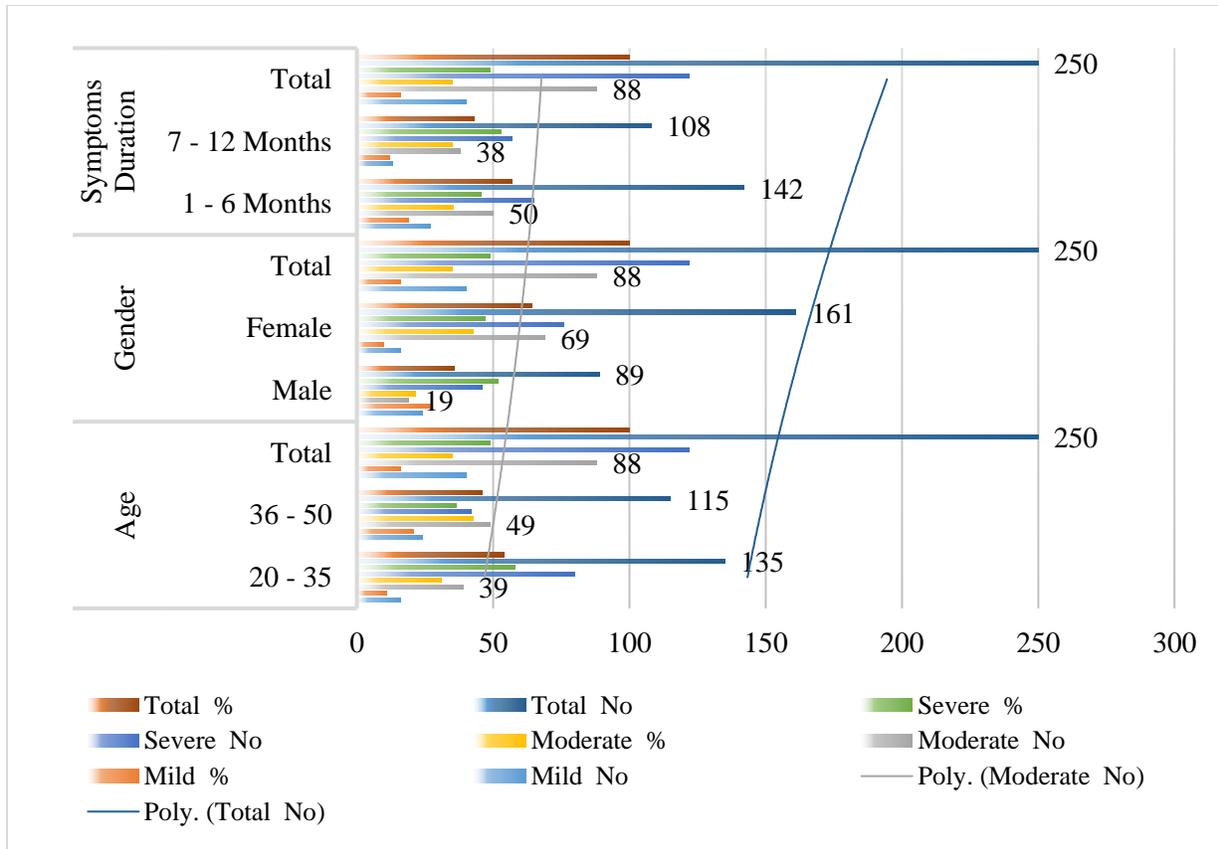
The number of mitral valve stenosis patients selected for research are two-hundred and fifty. The average age of the enrolled patients for research was 38.77 ± 10.33 years as well as time period of indication/symptoms was 7.55 ± 5.67 months. Researcher diagnosis mild stenosis in forty (sixteen percent) patients along with eighty-eight patients (thirty-three percent) of moderate stenosis and one-hundred and twenty-two (forty-nine percent) serious stenosis patients. Researcher carried out categorization of patients in term of age and made two categories of patients having age between twenty to thirty-five in category one and patients having age

thirty-six to fifty years in category two and diagnosed eleven (eleven percent), thirty-nine (thirty-one percent) and eighty (fifty-eight percent) patients of mild, moderate and severe stenosis respectively among one hundred and thirty five (fifty-four percent) patients of category one (twenty to thirty-five age category) . Researcher also diagnosed twenty-four (20.87%), forty-nine (42.61%) and forty-two (36.52%) patients of mild, moderate and severe stenosis among one hundred and fifteen (forty-six percent) patients of category two (thirty-six to fifty years' age category) as well as found important relation of age ($P = 0.002$) with seriousness of stenosis. The number of male patients was eighty-nine (35.6%) along with one hundred and sixty-one (64.4%) female patients. The number of male patients

identified with mild stenosis was 24 (26.97%) succeeded by moderate stenosis in nineteen (21.35%) and forty-six (51.69%) severe stenosis. The number of female patients identified with mild stenosis was sixteen (9.94%) succeeded by moderate stenosis in sixty-nine (42.86%) and seventy-six (47.2%) severe stenosis. Patients sex was impotently connected with the seriousness of stenosis with (P -value = 0.001). The patients diagnosed with one to six-month indication/symptoms were one hundred and forty-two (56.8%) along with one hundred and eight patients (43.2%) having seven to the twelve-month time period of indications/symptoms. The researcher identified non-important relation of the symptoms time period with the seriousness of stenosis.

Table: Research Variables Analysis

Age Group		Mild		Moderate		Severe		Total		P-Value
		No	%	No	%	No	%	No	%	
Age	20 - 35	16	11.00	39	31.00	80	58.00	135	54.00	0.002
	36 - 50	24	20.87	49	42.61	42	36.52	115	46.00	
	Total	40	16.00	88	35.00	122	49.00	250	100	
Gender	Male	24	26.97	19	21.35	46	51.69	89	35.60	0.001
	Female	16	9.94	69	42.86	76	47.20	161	64.40	
	Total	40	16.00	88	35.00	122	49.00	250	100	
Symptoms Duration	1 - 6 Months	27	19.01	50	35.21	65	45.77	142	56.80	0.289
	7 - 12 Months	13	12.04	38	35.19	57	52.78	108	43.20	
	Total	40	16.00	88	35.00	122	49.00	250	100	



DISCUSSION:

While making a judgment for mitral stenosis, echocardiography performs an important role, permission for verification of identification, quantitation of stenosis seriousness, its outcomes, and evaluation of valve anatomy [9]. Mitral stenosis is the most common valvular complexity of rheumatic

sickness. Moreover, in industrial states, dominant cases consistently of rheumatic origin as another case are limited. Accustomed the decline in the dominance of rheumatic heart complication, Mitral stenosis has changed into the lowest common single left sided complication. Even so, it continuously charges for ten percent of left-sided valve complication in Europe.

However mitral stenosis is the general most outcome in echocardiography in progressing state as a result of rheumatic illness and that is endemic here. The number of mitral valve stenosis patients selected for research are two-hundred and fifty and researcher make the struggle for the clinical examination along with non-invasive inquiry just like 2D echocardiography in patients with MS.

Researcher diagnosis mild stenosis in forty (sixteen percent) patients along with eighty-eight patients (thirty-three percent) of moderate stenosis and one-hundred and twenty-two (forty-nine percent) serious stenosis patients. Shaikh and Faheem et al presented (30.3% & 42.4% & 27.3%) and (37.6% & 37.9% & 24.5%) of mild, moderate and severe stenosis patients respectively [9, 10]. One additional study conducted at Karachi presented (27.1%), (47.1%) and (25.1%) of mild, moderate and severe stenosis patients respectively [11]. The results of these research differ from our research. In Pakistan, MS is one of the major valvular heart complications. Its impact is with entire age categories. The classical management is the comfort of interference through surgery or balloon valvuloplasty. The most significant feature which finalized the operability as well as surgery forms along with the seriousness of MS and steno valve morphology [12]. In our research fifty-four percent mitral valve stenosis associated with adolescent age category along with forty-six percent associated with matured age category [13]. Uniformly, Aurakzai et al presented moderate to severe stenosis in the category of matured age category [14]. In the present research, the percentage of a female patient affected with MVS was higher with respect to males. (35.6% males & 64.4% females) [15]. In one of the research conducted by Saleh et al, conducted echocardiography scanning in entire nominated patients [16]. Identified (48.3%) of MS male patient after scanning along with (52.1%) of female patients as well as the seriousness of stenosis was (4.1%, 9.5% and 18.8%) mild, moderate and severe stenosis respectively.

CONCLUSION:

The finding of the research declared that huge patients are diagnosed with the most serious MVS. Moreover, stenosis was most frequent in young age category with respect to old age category as well as the seriousness of stenosis expressively related with patient age. With respect to men, women largely become a victim of mitral valve stenosis and expressive relation was identified in the seriousness of stenosis and gender.

REFERENCES:

1. Zahid S, Izhar A, Samad A. Echocardiographic

profile of patients with Mitral stenosis. *Pak J Cardiol* 2007;18: 18- 24.

2. Khan RF, Imtiaz Y, Ali H, Khan MU, Ali M, Riaz N, et al. Natural History and Relative Distribution of Different Valvular Heart Diseases in Mayo Hospital, Lahore. *Ann King Edward Med Coll* 2002; 8: 90-1.
3. Carabello BA. Modern Management of Mitral Stenosis. *Circulation*. 2005 Jul 11;112(3):432-7.
4. Aurakzai HA, Shahid Hameed S, Shahbaz A, Gohar S, Qureshi M, Khan H, Sami W, Azhar M, Khan JS. Echocardiographic profile of rheumatic heart disease at A Tertiary cardiac centre. *J Ayyub Med Coll Abbottabad*.2009;21(3):122-26.
5. Shaikh MA, Yakta D, Shah M, Channa F, Raj. The frequency of mitral valve stenosis among adult patients of rheumatic heart disease admitted in LUMHS and MMC. *MC*.2012;19(2):39-42.
6. Saleh HK. Shaikh MA, Yakta D, Shah M, Channa F, Raj. The frequency of mitral valve stenosis among adult patients of rheumatic heart disease admitted in LUMHS and MMC. *MC*.2012;19(2):39-42. *Saudi Med J*.2007;28(1):108-13.
7. Lee TY, Hsu TL, Tseng CJ. Clinical applicability for the assessment of the valvular mitral stenosis severity with Doppler echocardiography and the proximal isovelocity surface area (PISA)method. *Echocardiography* 2004; 21:1-6.
8. Shaikh MA, Yakta D, Shah M, Channa F, Raj. The frequency of mitral valve stenosis Among adult patients of rheumatic Heart disease admitted in LUMHS and MMC. *QMC* 2012; 19:39-42.
9. Thomas JK, Anoop TM, Sebastian BG, George k, George R Mitral leaflet separation index in assessing the severity of mitral stenosis. *ISRN Cardiol* 2011;1-4.
10. Shaikh MA, Yakta D, Shah M, Channa F, Raj. The frequency of mitral valve stenosis among adult patients of rheumatic heart disease admitted in LUMHS and MMC. *MC*.2012;19(2):39-42.
11. Faheem M, Hafizullah M, Gul A, Jan HU, Khan MA. The pattern of valvar lesions in rheumatic heart disease. *Journal of Postgraduate Medical Institute (Peshawar- Pakistan)* [Internet]. 2011 [cited 2014 Feb 13];21(2). Available from: <http://www.jpmi.org.pk/index.php/jpmi/article/view/File/10/1206>.
12. Mensah GA. The burden of valvar heart disease. In OttoCM, BonowRO, editors: *Valvular Heart Disease: a companion to Braunwald's Heart*

- Disease. Philadelphia; Saunders/Elsevier;2009: 19-38.
13. Essop MR, Nkoma VT. Rheumatic and nonrheumatic valvular heart disease: Epidemiology, management and prevention in Africa. *Circulation* 2005; 112:3584.
 14. Roberts WC, Ko JM. Clinical pathology of valvar heart disease. In Otto CM Bonow RO editors: *Valvular Heart Disease: a companion to Braunwald's heart disease*. Philadelphia: Saunder's/Elsevier;2009: 19-38.
 15. Ahmad S, Hayat U, Naz H. Frequency of Severe Mitral Stenosis in Young Female Patients Having Pure Mitral Stenosis Secondary to Rheumatic Heart Disease. *J Ayyub Med Coll Abbottabad* 2010;22
 16. Nishimura RA, Rihal CS, Tajik AJ, Holmes DR. Accurate measurement of the transmittal gradient in patients with mitral stenosis: a simultaneous catheterization and Doppler echocardiographic study. *J Am Coll Cardiol* 1994; 24:152–8.