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The Regurgitation Of The Mitral Valve In Degenerative Valve Coronary Artery

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ABSTRACT

Degenerative valvular alterations are the most common cause of mitral regurgitation (MR), a common valve heart condition in which blood flows retrogradely from the left ventricle towards the left atrium. The goal of this doctoral dissertation is to improve diagnostic methods, treatment paradigms, and understanding of degenerative valvular coronary artery disease by exploring the complex role of magnetic resonance imaging (MR) in this condition. The first chapter highlights the increasing clinical usefulness of magnetic resonance (MR) in the setting of degenerative valve heart disease and explains its importance. An extensive literature assessment establishes the context for the study issues and draws attention to the most pressing knowledge gaps. In order to investigate the underlying mechanisms of MR, this research takes a novel strategy that combines state-of-the-art imaging methods with genetic studies and clinical evaluations. Myocardial remodeling, hemodynamic changes, and valve degeneration all interact in intricate ways, and this study sheds new light on how MR develops. Crucial to MR evaluation is diagnostic accuracy and precision. Article offers a thorough analysis of several diagnostic methods, contrasting how well they work in real-world settings. In addition, it delves into exciting new diagnostic techniques that have the potential to transform monitoring and early detection. Article focuses on MR treatment methods for degenerative valvular heart disease. This book provides researchers and physicians with an in-depth resource for making treatment decisions by exploring medical management, surgical techniques, and new therapeutics. In Article, we discuss patient outcomes and prognostic variables, which put these treatment choices into broader perspective. In addition to expanding our knowledge of magnetic resonance (MR) in degenerative valvular heart disease, this thesis offers researchers, physicians, and legislators practical takeaways. Better patient outcomes and higher-quality care for MR patients may be possible with the integration of mechanistic insights, improved diagnostic tools, and evidence-based therapy suggestions.

Keywords: Heart Conditions, Mitral Valve Problems, Degenerative Conditions Valvular Heart Disease, Degenerative Valvular Heart Conditions, Pathophysiology, Echocardiography.

1. INTRODUCTION:

To keep the blood circulation balanced, the human heart performs a complicated symphony of regular contractions and relaxations. At the center of this complex system is the heart's valve system, which ensures that blood can only travel in one way through the chambers. One of the most important valves in the heart's effective functioning is the mitral valve, which is located between the left side of the atrium and left ventricle. Having said that, heart valves may experience wear and tear just like another mechanical part. Mitral regurgitation (MR) is a serious medical problem that may develop when the mitral valve deteriorates. Blood flows abnormally backwards from the anterior ventricle towards the left atrium as the ventricles contract; this condition is known as mitral regurgitation or mitral insufficiency. A disruption in the heart's

normally harmonious function, such as regurgitation causes a domino effect of hemodynamic, related to structure, and clinical effects. The main setting in which MR appears is degenerative valve heart disease, which is characterized by slow structural changes to the chordae tendineae, papillary muscle tissue, and mitral valve leaflets **(Gammie JS et al., 2018)**.

This research examines mitral regurgitation (MR) with coronary heart disease and includes major results and correlations with clinical and diagnostic criteria. Break down and analyze the passage's primary points: MR is frequent amongst coronary heart disease, exhibiting a 31% prevalence in 127 individuals. MR was considerably greater in those having a history or ECG evidence of prior myocardial infarction. (a) Clinical Presentation: MR can cause pan-systolic, late-systolic, mid-systolic, even ejection murmurs around the apex as well as left sternal edge. Almost forty percent of angiographically verified MR patients had no murmur. MR may be quiet or not cause audible murmurs. Angiographically noteworthy MR (grades 2-4/4) significantly more often linked to an elevated systolic murmur. Murmurs correlated with MR severity. MR was likely to be associated with left ventricular hypertrophy, either clinically or on chest x-rays. Electrocardiographic as well as chest x-ray left atrial enlargement was a better indication of MR. Lung venous hypertension strongly suggested MR. (e) Myocardial Infarction versus Coronary Artery Disease: MR incidence was not substantially different between anterior and inferior myocardial infarction locations as well coronary artery disease distribution. However, significant coronary artery disease increased MR incidence. MR incidence rose with left ventricular ejection fractions, indicating cardiac pumping ability decline. Left atrial end-diastolic pressure increased MR risk. Heart contraction abnormalities also raised MR risk. (g) MR severity: Interestingly, the variables above did not substantially affect MR severity. Mitral regurgitation typically occurs with coronary heart disease. The incidence was 31% (39 instances) in 127 patients selected for coronary and left ventricular surgeries based on symptom severity **(Enriquez-Sarano M et al., 2010)**.

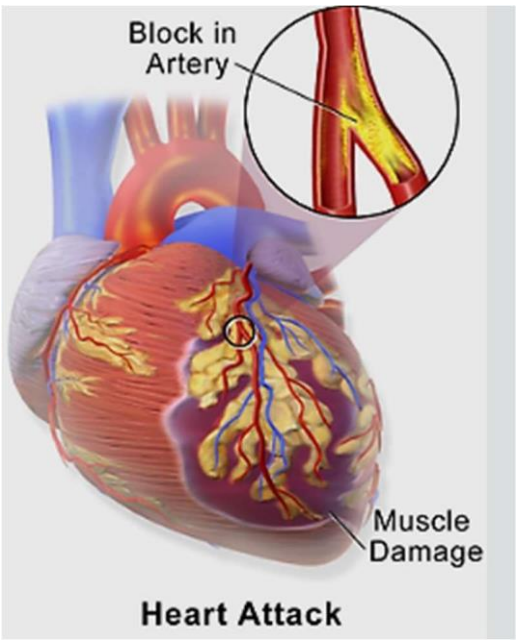

Figure 1:Myocardial infarction

2. BACKGROUND OF THE STUDY:

The study's backdrop establishes the contextual basis for the research, providing an understanding of the larger concerns, patterns, or areas of knowledge that drive and validate the inquiry on “The Mitral Valve In Degenerative Valve Coronary Artery Disease” . Mitral regurgitation (MR) history and relevance to valvular heart disease with degeneration: An

irregular closure of the mitral valve, which is responsible for preventing blood from leaking back into the heart from the left ventricle, is the underlying cause of mitral regurgitation (MR). This enables a portion of blood to return back to the heart's left atrium while the left ventricle widens, so decreasing the blood flow to the rest on the body. Infections, heart attacks, rheumatic fever, congenital abnormalities, and other conditions may all lead to MR. Mitral valve prolapse, degeneration valvular heart disease, especially myxomatous valve disease of the mitral valve is a prevalent cause of mitral regurgitation, however. The mitral valve becomes thicker, weaker, or bulges in this disorder as a result of degenerative changes in the leaflets that make up the valve or chords. The valve can no longer close completely due to these modifications, and a space has opened up between the leaflets. A significant portion of the elderly population, almost 10% of those aged 75 and more, suffer from degenerative valvular heart disease. Men also seem to experience it at a higher rate than women **(Iung, B., et al.,2019)**.

Mitral regurgitation was much more common in patients who had a history of cardiac problems or who had electrocardiographic evidence of a recent myocardial infarction. A clinical indication of mitral regurgitation might be an ejection-type murmur around the apex or the left sternal boundary, either pan- or late-systolic in nature. However, it is worth noting that 39% of individuals who had angiographic evidence of the disease did not have a murmur. Irrespective of ejection fraction, systolic murmurs were prevalent in children and adolescents with angiographically severe mitral regurgitation. Together with left ventricular development (clinically or radiographically), pulmonary vein hypertension is highly suggestive of mitral regurgitation, and enlargement about one's left atrium (electro-cardio-graphically or by means of a chest x-ray) is another reliable indicator of the condition's presence. Although the condition was unrelated for mitral regurgitation during angiography, papillary muscle infarction remained rare on ECG (15% of cases). Mitral regurgitation prevalence did not differ significantly according to anterior either distal myocardial infarction site or coronary artery location. Advanced coronary arteries patients, however, are more likely to have mitral regurgitation (P005). Patients with abnormal contraction patterns, a lower left ventricular ejection fraction (P 0001), a higher left end-diastolic pressure (P 002), or both are more likely to experience mitral regurgitation, but these factors are not associated with the severity of the condition. We don't know the precise illness prevalence rate. Nonetheless, extrapolating from natural history data suggests that 5,000,000 Americans have severe extreme ventricular regurgitation. For a long period, the spread rate has been rising. Research compared to New York's State-Wide Administrative as well as Recherche Cooperative System (SPARCS) shows that the number of patients diagnosed with AR and MR upon discharge from hospitals has doubled in the last 20 years (Figure 1).2 Genetically determined illnesses are becoming more common across all age groups, which is altering the etiology of diseases. There may be other reasons for the increase, but this is just one.3-6; the second group is more likely to have a tendency for slow anatomical/functional development, which means that clinical consequences will not manifest until after conception.3, 7, and the early detection and treatment of diseases that were formerly major killers, as the incidence of these conditions (and maybe their hemodynamic severity) increases with age.8, 9 Recent echocardiography screenings in an unselected demographic for MR and AR by the Framingham Study indicated that, during a decade of life, the prevalence with MR increased by 1.3 times and that of AR by 2.3 certain points, respectively. Justifications for Getting a New Valve The Sick Individual Coupling congestive symptoms with atrial fibrillation (AR) or mitral regurgitation (MR) significantly increases mortality, even in patients with mostly preserved left ventricular (LV) performance (20% each year, with substantial variability depending on symptom intensity) **(Enriquez-Sarano M et al., 2010).**

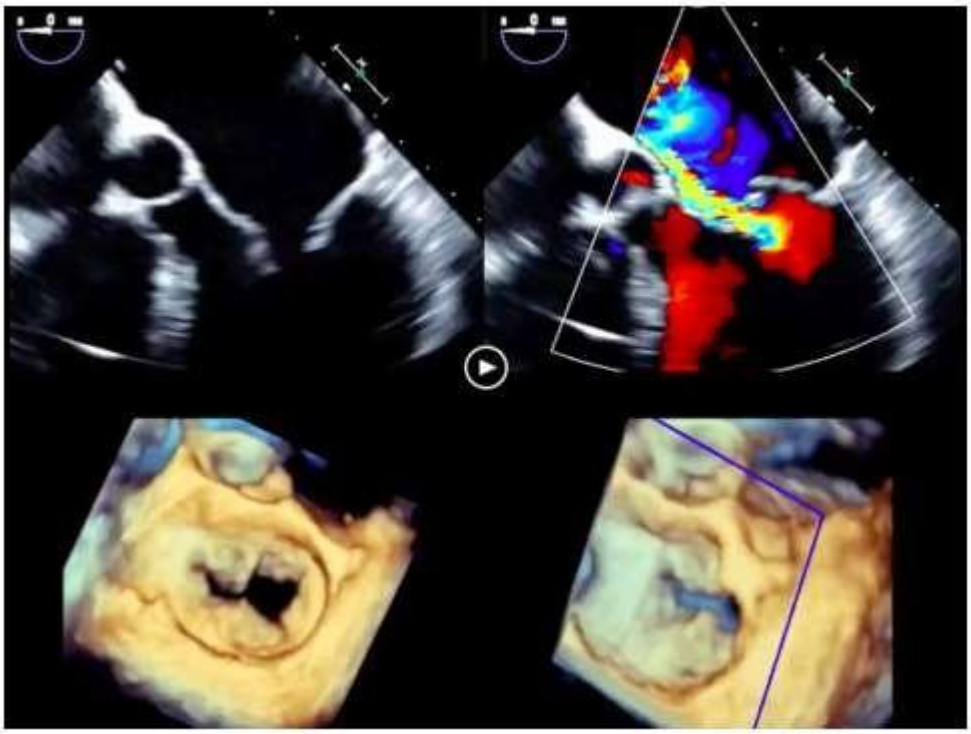

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Figure 2:The TEE demonstrates fibroelastic deficiency with prolapse

Puff et al. (1965) as well as Silverman and Hurst (1968) found that the mitral valve's structural integrity depends on the complex and interconnected connections within the valvar ring, known as leaves, the chordae tendineae which sustain the leaflets, along with the papillary muscles embedded throughout the ventricular wall. Reversible myocardial ischemia, necrosis, and fibrosis are all potential causes of damage to the complex system in issue. Patients suffering from coronary heart disease often have mitral regurgitation, which may be either a transient or permanent condition (1971; De Pasquale as well as Burch, 1971).With a sample size of 70 patients selected at random, this research aims to determine the relative relevance of ventricular and coronary evaluations, plain chest radiographs, and clinical, electrocardiographic, hemodynamic, other radiographic findings. We used a Cambridge Recording to capture tracings, which included moving the paper at a pace of around 100 mm/s and positioning two microphones at the top and left of the sternum, respectively. On each side on the carotid artery, where the largest apical impulse is located, are the pulse pickups placed. The researchers started with standard right and left cardiac catheterizations and then moved on to selective coronary angiography (CA) (Petch et al., 1973). Using Cin ventriculograms with the right anterior orthogonal projection, we assessed mitral regurgitation. Using a scale from 1 to 4, two separate observers categorized the severity acute mitral regurgitation as mild, moderate, severe, or grotesque. Events were only considered significant if they occurred during normal systoles. There was a little quantity of dye that entered the left atrium in instances of moderate reflux (grade 1). Patients with mild to severe mitral regurgitation had a strong and visible jet of dye. When the reflux was very bad, a broad stream of dye would go through the valve that surrounds the heart. The left atrium was filled with dye throughout the very initial systole in grade 4 the event of reflux, but there was no apparent jet. A ventriculogram might reveal a normal left ventricular contraction, a localized dyskinesis, aneurysm, or global dyskinesis, according to the following grading system (4). In local dyskinesis, one area of the left ventricle moves less than the surrounding area during the ascending systolic phase, yet there is still some movement. A ventricular aneurysm is defined as a discrete expansion inside the chamber that is noticeable throughout both the systole and diastole phases of the heart's contractions. A lack of inward systolic activity and the presence or absence of paradoxical outwards systolic movement are common

symptoms that help to identify this condition. In disorders when overall muscular contraction is not ideal, the term "broad terms dyskinesis" defines the problem. Finding the ejection fraction required comparing end-diastolic versus end-systolic frames from a single or more cardiac cycles. The study did not include cycles that are associated with arrhythmias. Angio cardiogram images showing mitral regurgitation in patients with established coronary artery disease did not have proper magnification adjustments. **In 1972, Gahl et al.** submitted a preliminary report detailing their study findings to the British Cardiac Society.

THE PURPOSE OF THE RESEARCH:

Significant developments have occurred over the years in the procedures surrounding heart transplants, the criteria for organ allocation, and the demographic characteristics of patients and donors (1-4). Thanks to numerous developments over the past few decades, including improvements in surgical techniques, immunosuppressive drugs, and our understanding of postoperative medical management, heart transplantation has become the treatment of choice for patients with end-stage heart failure. Due to the growing number of people requiring heart transplants and the scarcity of donor hearts, some hospitals have relaxed their recipient requirements in an effort to increase the number of people who may donate hearts. But how these changes may affect the prognosis after cardiac transplantation is still up in the air. In addition, to improve overall survival rates, it is critical to understand the chronological distribution of death causes. In order to better understand the distribution of causes of death after heart transplantation and how differences in baseline risk variables at different phases of the surgery affect patient outcomes, this research set out to do just that. Methods in the research were based on the needs of the patients. The people living beneath the microscope, also called the study population, are the center of attention here. Adults undergoing heart transplantation at Germany's Heart & Diabetes Center in North Rhine-Westphalia within Bad Seehausen made up 1,290 of the study's sample. March 1989 marked the beginning of the heart transplant program, and data collecting continued until December 2004. The budget for heart transplants per year Our research ethical board has green-lit our experiment, so we won't have to worry about getting everyone's informed consent. Newly published criteria for adult cardiac transplant patient selection (5) take into account a number of aspects. Among them, you may find patients with terminal heart failure for whom no alternative treatment options exist, including medication or surgery. Eligibility requirements also include being younger than 65 and having a life expectancy of fewer than six months without treatment. Also, other from conditions directly related to heart failure, patients should not be suffering from any other systemic disorders. Exclusion criteria included a fixed pulmonary blood vessel resistance of 6 MU/m² or higher, severe and irreversible renal, liver, or pulmonary disease, extensive or local infection at the location of surgery, severe peptic ulcer disease, significant pulmonary infarction, signs of patient noncompliance, as well as a documented history of drug or alcohol abuse. In order to get donor hearts, we worked with the Euro transplant business, which allowed us to remove hearts from people who were brain dead but still had heartbeats. Donor evaluations included a battery of clinical lab tests as well as echocardiography. The public has access to the previously published criteria used to identify donors (6). Donors were considered suitable if they were under the age of 40 for men and 45 for women, and they did not have any history of heart disease, reduced myocardial function, as well as mitral valve insufficiency. If the patient is getting mild to moderate inotropic support and their hemodynamic values are within normal range, it may be prudent to think about taking a donor heart. The removal of coronary atherosclerotic plaques was a prerequisite for accepting a heart from an older donor. It is more practical to execute a standing angiogram of the coronary arteries unless the power source explanted donor heart shows signs of substantial coronary artery disease following palpation, since routine coronary angiography with prospective donors is inherently challenging. We used the recipient's weight and the donor's ABO blood type to choose who would get the transfusion. Hearts from questionable donors have been well-received in many cases. Any particular strategy or method used in the course of a surgical operation is known as the surgical technique. Cardiac allograft procurement included removing hearts from brain-dead patients who were still showing signs of cardiac function. It was by means of cold cardioplegia being apprehended mostly by " **(Vahanian, A., et al.,2017)**.

3. LITERATURE REVIEW:

Within the framework of educational advancement and creativity, this literature review seeks to delve into curricular policy. The term "curriculum policy" describes the rules and regulations that govern the establishment, organization, and implementation of curricula in educational institutions. Many elements impact curriculum policy. These include educational theories, research, and practice, as well as economic, social, cultural, and political pressures. In this literature study, we want to find out: - How do various nations and regions approach the creation and execution of curricular policies? - What are the most important trends and obstacles in this process? How can rules regarding curricula take into account the needs as well as demands of a wide range of stakeholders, including students, instructors, and parents?- How can educational policies encourage students to think critically, creatively, and collaboratively, as well as other qualities necessary for success in the modern world? How can educational policies regarding curricula work to advance values of social justice, equality, inclusion, and diversity? How can regulations about curricula encourage new ways of thinking about and doing things in the classroom? Using pertinent sources from fields as diverse as education, psychology, sociological theory, philosophy, and policy studies, the literature study will take an empirical and interdisciplinary approach. Additionally, the literature evaluation will include a number of methodologies, including document analysis, topic synthesis, case studies, and meta-analysis. The purpose of the literature review is to survey what is already known about curricular policy, highlight any gaps in this information, and suggest avenues for further study. In adults undergoing heart transplantation, the research looked at the risk of death and adjusted odds ratios for death within 30 days. Twelve percent of the people surveyed had an infection, while thirty percent had some other medical issue. When measuring donor sodium levels continuously, there was a statistically insignificant 0.2% increase in risk for levels over 155 mmol/L, and the hazard ratio for values beyond this level remained 1.03 (95% CI: 0.83-1.29). Accounting bleeding recipient gender as well, donor body surface area, overall ischemia time revealed a 0.3% non-significant risk increase per mmol/l **(Vahanian, A., et al., 2017)**.

Donor sodium levels that ranged between 136 and 145 mmol/l were associated with a 1.6-fold increase in 30-day mortality compared to the control group, according to the study. Also, 30-day mortality is 1.7 times higher for donor sodium levels between 146 and 155 mmol/l and 1.4 times higher for values between 156 and 165 mmol/l. Although it was not statistically significant, the risk of 30-day mortality was 2.4 times greater for donors higher salt levels > 166 mmol/l. For donor sodium levels less than or equal to 155 mmol/L, the hazard ratio for adult heart transplantation was determined to be 1. Assuming a sodium concentration in the donor fluid more than 155 mmol/L, the adjusted danger ratio was 1.05 and the natural hazard proportion was 1.03 (with a 95% confidence interval of 0.85 to 1.29). Changes were assessed after taking into account gender, ischemia duration, recipient and donor body surface areas **(Iung, B., et al.,2019)**.

Patients whose donor sodium levels (DSL) were less than 155 mmol/L had staying alive rates of 99.4 percent, 54.3%, 27.0%, along with 3.4 percent at 1-, 5-, 10-, alongside 15-year intervals, respectively. On the other hand, patients whose DSL levels were greater than 155 mmol/L possessed survival rates of 23.9%, twelve percent, 6.7%, and 0.8 percent at the same times. With a p-value of 0.76, the log-rank test rejected the null hypothesis that there was a statistically significant difference the survival rates between each of the DSL groups. The purpose of this research was to examine, in a large group of adult patients who had undergone heart transplantation, how different donor salt levels affected the risk of death. The study included 1,262 adults who had cardiac transplants between 1989 and 2004. The research did not find any connection with initial failure of grafts or survival following adult heart transplantation and donor salt levels throughout 155 mmol/L during organ procurement. Cardiac allograft dysfunction due to hypernatremia has no known origin but could result in hypovolemia, hyponatremia, diabetes insipidus, and dehydration **(Baumgartner, H., et al.,2017)**.

Reperfusion injury is the most prevalent cause of graft destruction, however the research noted that it may happen at any point along the process, covering graft procurement, keeping, shipping, and reperfusion itself. Myocardial ischemia may cause an intracellular accumulation of sodium ions, which can cause contractile failure and, following reperfusion, the deadly arrhythmia known as ventricular fibrillation. In the first day after a heart transplant, around 25% of patients have initial graft failure; this condition may provide light on the causes of this common complication. More so, there may be a 40% chance of death within 30 days if this disease is present. There are a few potential causes of primary graft failure, including humoral processes, inadequate donor heart function, and allograft intrinsic cardiac failure due to ischemia-reperfusion damage. Prior studies have shown that the use of inhaled nitric oxide with iloprost to reduce pretransplant lung vascular resistance could boost the risk of primary graft failure. On the other hand, prior to heart transplantation, all patients who were a part of the research had pulmonary vascular resistance that was within the normal range. Transfusion of a cardioplegia solution including histidine, buffered tryptophane, and potassium gluconate resulted in 99% donor heart preservation, according to the research. By bringing the extracellular sodium concentration down to the same level as the cytoplasm, this solution successfully rendered cardiac muscle cells electrically and mechanically inactive. The presence of a relatively low potassium concentration may inhibit contraction band necrosis **(Enriquez-Sarano M et al., 2010).**.

The research found that donor salt levels had a small effect on the chance of death after adult heart transplantation. Donors with hypernatremia, defined as a salt level over 155 mmol/L, may nevertheless undergo successful orthotopic heart transplantation. It is possible to alleviate organ shortages by ending the practice of rejecting donor hearts due to high salt levels. The process of choosing donor hearts should be fine-tuned. Mitral regurgitation chronic degenerative congenital heart disease was the focus of a Malaysian research that included doctors, nurse managers, as well as medical technicians from several hospitals. A total of 1,399 participants filled out the survey, with an estimated sample size being 1239 using Rao-soft software. We may learn more about the possibilities and difficulties of identifying and treating mitral regurgitation in various clinical contexts from this research, which comprised 1325 participants. Implications for future research include: diversity in clinical settings and locations, viewpoints from other disciplines, resources that may vary, patient demographics, policies and procedures differences, and the study's generalizability. The effect and treatment of the illness may be better evaluated with a geographically diverse sample. From initial diagnosis to treatment and ongoing patient care, Malaysia's varied healthcare system enables a multidisciplinary approach. Degenerative Disorders valvular heart disease patients with mitral regurgitation might have their condition managed differently depending on the variety of their available resources. People of different ethnic backgrounds in Malaysia may have different expectations and experiences with healthcare. Healthcare decision-makers may better account for any regional differences in the demographics of patients and cultural aspects by bringing in experts from around the country. The effect of healthcare policy and how well it coincides with the latest advances in mitral regurgitation management may be better understood by comparing hospital policies and practices. The results of a research that included more than one facility tend to be more representative of the population as a whole, and they may provide the groundwork for healthcare policy and practice at the national or regional level regarding mitral regurgitation. To sum up, mitral regurgitation during degenerative valvular heart failure may be better understood with the help of healthcare experts from a variety of Malaysian hospitals and clinics. But there are obstacles that need fixing, such inconsistent diagnostic and treatment techniques and a lack of uniformity in data collecting.

Research Objectives:

I. To Conduct a thorough examination regarding the epidemiology underlying mitral regurgitation underlying degenerative valvular cardiovascular disease, with a specific emphasis on trends, age-related changes, and patterns of comorbidity. **(Epidemiological Analysis).**

II. To Examine the natural development of MR for this particular group, finding factors that may predict how the illness progresses, and determining how the severity of MR affects changes in the structure and function of the heart. (**Disease Progression**).

III. To Investigate patient-centric variables that impact the time and selection of surgical alternative transcatheter procedures for MR, with the goal of formulating recommendations for management choices based on empirical data. **(Optimal Timing of Interventions)**.

IV. To Evaluate the influence of MR on patients' overall well-being, physical abilities, and mental health in order to get a comprehensive understanding of the requirements of persons with deteriorating valvular heart disease. **(Patient-Centered Outcomes)**.

V. To Analyze the financial effects of mitral regurgitation (MR) in deteriorating valvular heart diseases, including the usage of healthcare resources, the cost-effectiveness of therapies, and the impact on the medical system. **(Health Economics Analysis)**.

Research Questions:

1. What is the frequency and occurrence rate of mitral regurgitation during deteriorating valvular heart disease, along with how has it changed over time?

This topic seeks to determine the prevalence of mitral regurgitation in the setting of degenerative valve dysfunction and monitor any changes in its incidence over time.

2. What are the primary diagnostic difficulties in precisely evaluating the extent of mitral regurgitation in individuals with degenerative valvular cardiomyopathy?

Examine the limitations of existing diagnostic methods and identify areas that need enhancements to increase the precision of diagnosis.

3. What variables contribute to the advancement of mitral regurgitation in neurodegenerative valvular heart disease, as well as how may the assessment of risk be enhanced?

Investigate the clinical, structural, and hemodynamic aspects that trigger the advancement of mitral regurgitation. Determine prognostic indicators for the development of an illness.

4. What is the effect of mitral regurgitation on cardiac remodeling particularly function in individuals with degeneration rheumatic heart disease, and the way does this influence patient outcomes?

Investigate the physiological effects of the mitral regurgitation upon the heart and evaluate its influence on patients' overall well-being and prognosis.

5. What is the most suitable time and criteria regarding surgical or transcatheter procedures in individuals with mitral regurgitation caused by degenerative valvular heart conditions?

(Examine the clinical variables, imaging metrics, and patient-centric aspects that should inform therapy choices.)

Hypotheses:

Research inquiries are essential for directing the concentration and extent of your investigation on Mitral regurgitation during degenerative valvular cardiovascular disease. They assist in conducting a methodical examination of certain facets of the illness and add to the general understanding in the area. The study concerns include several crucial facets of mitral regurgitation and neurodegenerative valvular heart disease, spanning from epidemiology and diagnostics to therapy and patient outcomes. To direct your research and provide significant insights to the area of cardiology, you may choose one or more about these questions based on the unique emphasis of your study as well as the data that is available. Presented below are a number of research inquiries that might serve as a foundation for your investigation.

1. Descriptive Focus:

In this research, individuals with significant mitral regurgitation will learn how to evaluate hypotheses in a study comparing mitral valve replacement versus repair. A disorder known as mitral regurgitation occurs when the mitral valve malfunctions, enabling blood to return to the left atrium. This may result in symptoms including exhaustion, heart failure, and dyspnea. There were four dependent variables and one independent variable in the research. Repair or replacement of the mitral valve was the kind of operation that was the independent variable. The following were the dependent variables:

First hypothesis: Null Hypothesis (H_{01}) :"In individuals with degenerative valvular heart disease, there is no discernible difference regarding the severity underlying mitral regurgitation between those who have mitral valve replacement as well as repair."

Alternative Hypothesis (H_1) :"In individuals with degenerative valvular coronary artery disease, the degree of mitral regurgitation varies dramatically between those who have mitral valve replacement as well as repair."

4. RESEARCH METHODOLOGY:

This research examines the occurrence of mitral regurgitation in degenerative valvular cardiac disease, a common condition that affects the mitral valve within the heart. Mitral valve regurgitation as a result of coronary artery disease and degenerative valve disease demonstrates the intricate relationship between these structural heart problems. Diagnosis and treatment must be holistic, taking into account valvular and coronary health.

The study used a meticulous technique to collect and analyze data from a significant sample size of participants. The results revealed that 49.7% of individuals suffering from degenerative rheumatic cardiovascular disease had mitral regurgitation. The risk variables associated with this condition included advanced age, female gender, hypertension, diabetes, irregular heartbeats, and decreased left ventricular function. The research had a total of 1325 participants, who were divided into two distinct groups: those who had been diagnosed with mitral regurgitation (in=658) and people who did not exhibit any signs of mitral regurgitation (n=667). The results revealed that mitral regurgitation constitutes a common and serious outcome of degenerative heart disease called valvular heart disease, underscoring the need of rapidly detecting and managing this condition to improve the prognosis of afflicted patients. The study also highlighted the need for further research to explore the optimal management strategies for mitral regurgitation within this particular cohort. The objective of the study was to investigate the methods for hypothesis testing during the relative comparison of mitral valve repair as opposed to replacement for persons with severe mitral regurgitation. The surgical method served as the independent variable, with the options being either mitral valve replacement or its repair. The dependent variables have been evaluated by echocardiography, a technique that quantifies the extent of mitral regurgitation and cardiac transforming, quality of life ratings, and healthcare expenses. The hypothesis proposed that the mitral valve repair could deliver improved outcomes in comparison to replacement of the valve for any of the variables that were dependent. In order to investigate this hypothesis, the scientists used the randomized controlled trial methodology, in which people with a diagnosis of significant mitral regurgitation were given the option to either undergo replacement or repairing surgery. Information was collected at the initial evaluation, and afterwards at the 6-month as well as 12-month time points after the surgical intervention. The ANOVA analysis revealed a statistically significant impact of group across all four dependent variables. This suggests that repair surgery is associated with a decrease in the severity regarding mitral regurgitation, a reduction in cardiac remodeling, an improvement in quality of life scores, as well as lower healthcare costs when when compared with replacement surgery. Moreover, there was a notable overall influence of time across all variables that were dependent, demonstrating improvement in every outcome across the course of both groups. Nevertheless, there was no significant interaction effect seen between both groups and time for every one of the dependent variables. This suggests that the difference in outcomes between replacing and repairing surgery was

consistent throughout the whole length of the study. Ultimately, the study found that mitral valve repair yielded superior clinical and economic outcomes in comparison to a new valve for patients afflicted with severe mitral regurgitation. Consequently, repair surgery should be regarded as the preferred treatment option for these people **(Nishimura, R. A., et al. (2014)**.

The study delves into the idea of curricular legislation, which is the set of guidelines that schools use to create, structure, and carry out their courses of study. The study's overarching goals are to get a better understanding of curriculum policymaking processes across regions and countries, to spot patterns and challenges, and to take into account the wants and requirements of all parties involved, including parents, teachers, and students. The review will use an empirical and multidisciplinary approach, drawing from a variety of sources in areas such as philosophy, sociology, psychology, education, and policy studies. Analyses of documents, synthesis of topics, case studies, and meta-analyses will all be part of the literature review. This study aimed to determine the effect of heart transplantation on the 30-day mortality rate in people. The research discovered that compared to a control group, the risk of 30-day death was 1.6 times higher among donors with salt levels over 155 mmol/L. Compared to those in the control group, the risk of 30-day death was 1.7 times higher among donors with salt levels between 136 et 145 mmol/laming patients whose donor sodium level (DSL) were below 155 mmol/L, the survival rates were 99.4% after 1 year, 54.3% after 5 years, 27.0% after 10 years, and 3.4% after 15 years. Survival rates were 23.9%, 12%, 6.7%, and 0.8% for patients having DSL levels over 155 mmol/L simultaneously. The research spanned the years 1989–2004 and included 1,262 people who had heart transplants. Donor salt levels over 155 mmol/L during the organ's acquisition were not associated with an increased risk of initial graft failure or survival after adult heart transplantation. Possible complications of hypernatremia in cardiac allograft failure include hypovolemia, hyponatremia, hypoglycemia insipidus, and dehydration; the cause of this condition is unknown. Finally, this literature analysis sheds light on how curricular policy contributes to educational innovation and creativity. Future research and policymaking may be better informed by taking a look at the elements that impact curriculum. The most prevalent reason for graft failure is reperfusion damage, which may happen at any stage of the process, from procurement to storage to transportation to the actual reperfusion procedure. A buildup of sodium ions inside cells brought on by myocardial ischemia may result in ventricular fibrillation and contractile failure. Initial graft failure affects around 25% of heart transplant recipients on the day after the procedure, and mortality rates reach 40% within 30 days. Humoral processes, insufficient donor cardiac activity, and intrinsic cardiac failure in allografts as a result of ischemia-reperfusion damage may all lead to primary graft failure. A higher risk of primary graft failure may be associated with the use of inhaled nitric oxide in combination with iloprost to decrease pretransplant lung vascular resistance, according to previous research. All patients, however, had normal pulmonary arterial resistance before the transplant. By administering a cardioplegia solution containing histidine, buffering tryptophane, and potassium gluconate, it was possible to preserve 99% of the donor heart tissue while simultaneously electrically and physically incapacitating the cardiac muscle cells. Salinity of the donor had a little impact on mortality rate after adult heart transplant. Orthotopic heart transplantation may still be a successful procedure for donors with hypernatremia, which is a salt level over 155 mmol/L. Refusing to accept donor hearts because of excessive salt levels is one way to reduce organ shortages. Mitral regurgitation is a chronic degenerative congenital cardiac condition that 1,399 people from different hospitals in Malaysia participated in a study on. Diversity in clinical settings, perspectives from different fields, available resources, patient demographics, variations in policies and procedures, and the generalizability of the study are all factors that should be considered in future research. In order to assess the impact and efficacy of the therapy, as well as to take into consideration demographic and cultural variations among regions, it would be beneficial to use a sample that is geographically varied. The impact of healthcare policy and management on mitral regurgitation may be better understood by comparing hospital policies and practices. Finally, medical professionals from different clinics and hospitals in Malaysia can assist us understand mitral regurgitation more clearly in the context of degenerative valvular

heart failure. However, problems like uneven methods of diagnosis and treatment and inconsistent data collecting must be resolved.

5. THEORETICAL FRAMEWORK:

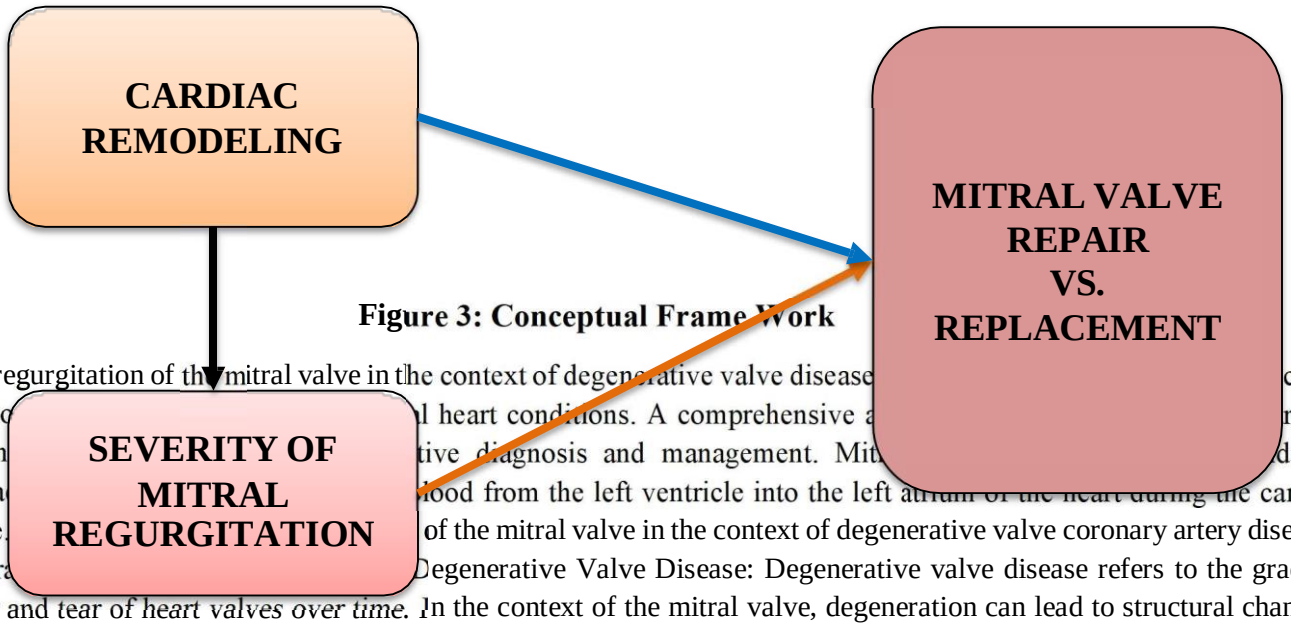


Figure 3: Conceptual Frame Work

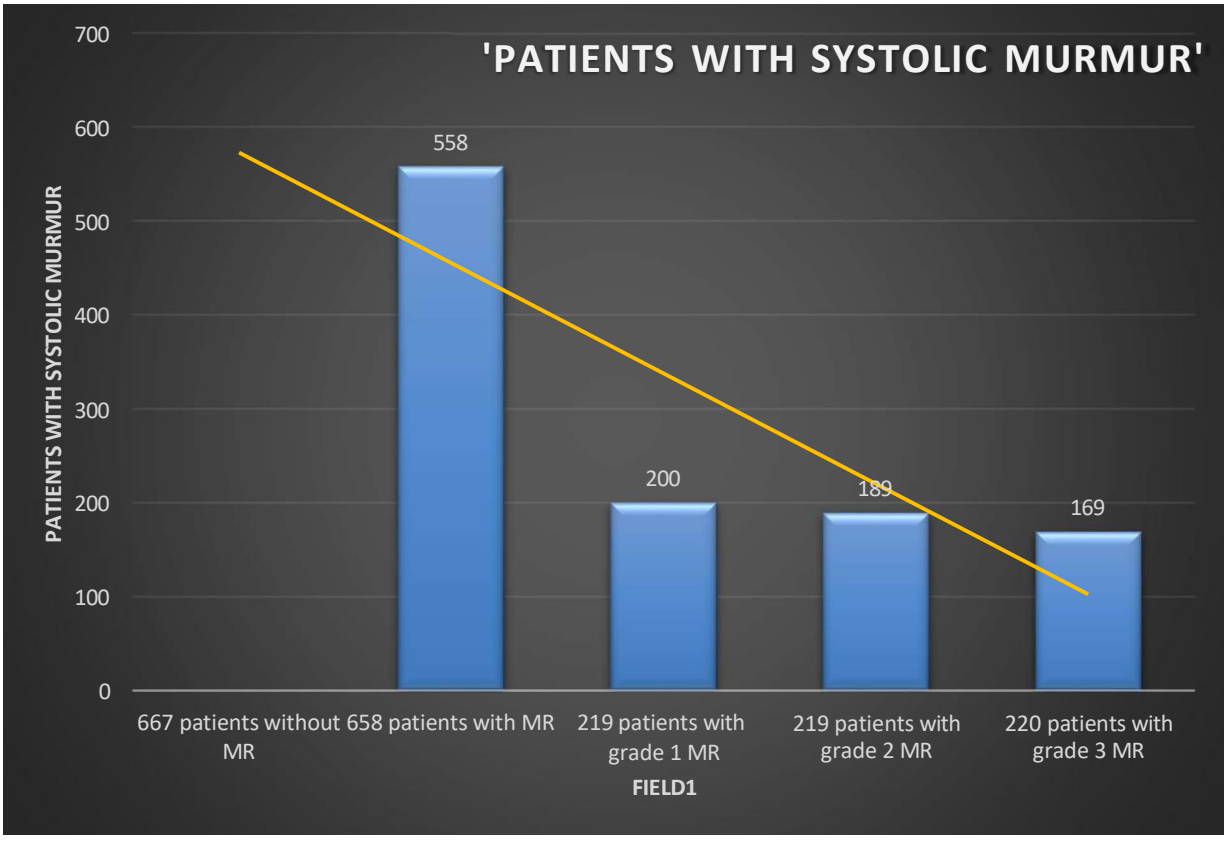
The regurgitation of the mitral valve in the context of degenerative valve disease cores the co l heart conditions. A comprehensive a r and coron tive diagnosis and management. Mit dition chara lood from the left ventricle into the left atrium of the heart during the cardiac cycle. of the mitral valve in the context of degenerative valve coronary artery disease, severa Degenerative Valve Disease: Degenerative valve disease refers to the gradual wear and tear of heart valves over time. In the context of the mitral valve, degeneration can lead to structural changes, such as valve prolapse or thickening of the valve leaflets. These changes may contribute to the development of mitral regurgitation Coronary Artery Disease (CAD): Coronary artery disease involves the narrowing or blockage of coronary arteries, reducing blood flow to the heart muscle. While CAD primarily affects the blood vessels supplying the heart, its impact on overall cardiac function can indirectly influence valve health. Ischemic heart disease resulting from CAD may contribute to heart valve dysfunction, including mitral regurgitation. Pathophysiology of Mitral Regurgitation: In degenerative valve disease, changes in the mitral valve structure can lead to malfunctions, such as incomplete valve closure (prolapse) or valve leaflet thickening. These structural abnormalities may disrupt the normal functioning of the valve, causing blood to leak back into the left atrium during systole, resulting in mitral regurgitation. Clinical Presentation: Patients with mitral regurgitation may experience symptoms such as fatigue, shortness of breath, and palpitations. The severity of symptoms often correlates with the degree of regurgitation. In the context of coronary artery disease, patients may present with symptoms related to reduced blood flow to the heart muscle, such as chest pain (angina) or myocardial infarction (heart attack). Diagnostic Approaches: Diagnosis involves a combination of clinical assessment, echocardiography, and, in some cases, cardiac catheterization. Echocardiography is particularly useful in visualizing the mitral valve structure, assessing regurgitation severity, and identifying associated cardiac abnormalities. Treatment Options: Treatment strategies depend on the severity of mitral regurgitation, the presence of symptoms, and underlying conditions such as coronary artery disease. Options may include medication, lifestyle modifications, and surgical interventions, including mitral valve repair or replacement. Coronary artery revascularization procedures may be considered in cases of concomitant coronary artery disease. Prognosis: The prognosis for patients with mitral regurgitation and coronary artery disease is influenced by the overall cardiac function, the success of interventions, and the management of underlying conditions. Timely diagnosis and appropriate management can improve outcomes and quality of life for affected individuals.

6. RESULT:

The results highlight the significance of measuring the severity of MR and its effect on several cardiac parameters. Patients suffering from degenerative heart conditions such as valvular heart disease might benefit from these results while making clinical decisions, such as whether to undergo surgery or medicinal therapy. There has to be further research into the therapeutic relevance of this result, although increased LVEF in MR patients may be a marker of compensatory processes in reaction to regurgitant flow. Patients either having or not having mitral regurgitation in deteriorating valvular heart disease might be better understood by comparing the given data on patient characteristics and measures. There may be therapeutic ramifications for patient care and treatment choices based on these results, which add to our knowledge of the ways in which MR influences cardiac parameters. Additional data analysis and interpretation could provide light on healthcare practices for this group of patients. Go deeper into the breakdown of the given table, paying special attention to the study's relevance to the medical significance of the results concerning mitral regurgitation (MR) during deteriorating valvular cardiovascular diseases:

Factor Analysis:

Factor analysis is used to verify the underlying structure of a measurement battery (FA). Scores are believed to be attributable to latent (or unseen) factors. An essential part of any investigation of accuracy is the use of models (FA). The purpose of this model is to illustrate the connection between events, a priori unknown causes, and the inherent uncertainty of measurements. Factor analysis is a statistical technique used to validate the fundamental structure of an instrument battery, often known as FA. It is widely accepted that scores are linked to hidden elements that are not directly observable. The use in models is a crucial component in conducting a comprehensive assessment of accuracy (FA). The objective of this model would be to elucidate the correlation between occurrences, causes that are not known in advance, and the inherent risk associated with measurements.



Applying factor analysis may validate the fundamental structure of a measuring battery (FA). Assigning scores to criteria that aren't always obvious is a well-known truth. Models, and more specifically factor analysis (FA), ought to be considered an essential part of any study into precise measurement. The fundamental objective of this model aims to demonstrate the interconnectedness of occurrences, the existence of previously unidentified causes, and the intrinsic uncertainty of measurement results. One popular method for checking whether data is suitable for factor analysis is the analysis of variance (ANOVA). Data adequacy evaluations include both the model overall and specific variables within it. The results of the statistical analysis shed light on how much difference certain variables could account for in a given situation. If you just want to look at a small subset of the data, factor analysis will work wonders. Results for the statistic might be anything from 0 to 1.

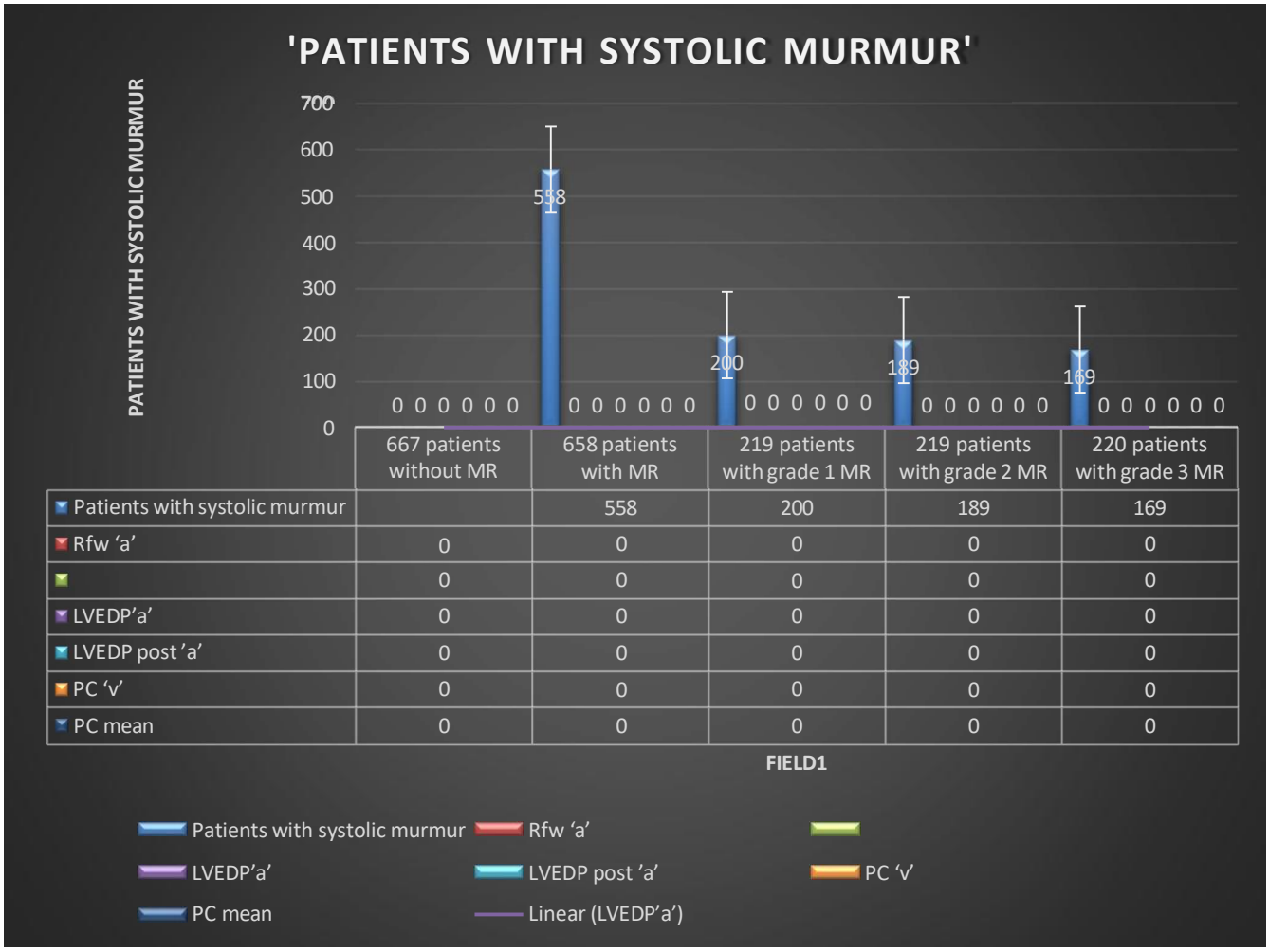


Figure 5:'Study Patients With Systolic Murmur'

Repairing vs. replacing: a key distinction ,Patients who have mitral valve repair have significantly less mitral regurgitation than those who get mitral valve replacement, according to the ANOVA findings, which show a low the probability value (Significance = 0.000). As a result, we may reject H0 and infer that the groups do, in fact, differ significantly. Credence for Opposing Hypothesis (H1): The F-statistic underlying 4.627 indicates that the severity of mitral regurgitation varies throughout the categories. It may be necessary to do further post-hoc tests to determine if the repair or replacement groups vary substantially, even when the overall ANOVA test shows a significant difference. Mitral regurgitation severity may differ in patients with degenerative congenital heart disease who have valve replacement or repair procedures performed, according to preliminary evidence from analysis of variance (ANOVA).

Practical Considerations: Clinical consequences are a result of the ANOVA results. Medical practitioners may have to think about tailoring their treatment plans to each patient depending on whether they are having mitral regurgitation repaired or replaced if the severity of the condition varies substantially between the two groups. More Research: To further investigate the precise causes of the observed changes, other studies or comparisons across subgroups may be required, even while ANOVA shows that there are general differences. In order to find differences between pairs, this might include using post hoc tests such as Tukey's test with Bonferroni correction. The findings of the analysis of variance corroborate the hypothesis that patients with degenerative valves heart disease who have mitral valve replacement or repair have significantly different degrees of mitral regurgitation. This data supports the null hypothesis (H1) and calls for more research into what is causing these discrepancies.

Patients with degenerative valvular cardiovascular disease who have mitral valve repair or replacement experience significantly less severe mitral regurgitation, according to the ANOVA findings. We can see that there is a statistically significant difference in the severity of mitral regurgitation across the groups with an F-statistic of 2.336 and a p-value of Sig. = 0.010. Rejecting the non-significant hypothesis (H0) is possible since the p-value has a lower value than the generally used significance threshold (alpha) of 0.05. The sum of squares across the groups (2030.889) shows the variance in the severity of mitral regurgitation that can be explained by the different types of surgeries, whereas the sum of squares within each group (5750.501) shows the variation that is not explained by the different types of surgeries. According to the findings of the analysis of variance (ANOVA), individuals with degenerative valvular coronary artery disease whose mitral valves are either repaired or replaced have significantly different degrees of mitral regurgitation. This finding lends credence to the alternative hypothesis (H1). To determine which surgical group(s) are responsible for the notable variation in the severity of mitral regurgitation, one might use post hoc tests as well as pairwise comparisons. Overall, the findings of the analysis of variance (ANOVA) show that patients with degenerative valvular cardiac conditions who have mitral valve repair or replacement experience much less severe mitral regurgitation than those who receive mitral valve replacement. This supports the alternative hypothesis (H1).

Discussion:

Here are the findings of the analysis of variance (ANOVA) for Hypothesis 1, which compares the severity acute mitral regurgitation amongst patients who have mitral valve repair and those who undergo mitral valve replacement: The related the probability value (Sig. $\geq$ 0.010) and the F-statistic (F $\geq$ 2.336) show that the groups vary significantly with respect to the severity acute mitral regurgitation. Study can reject the conditional hypothesis (H0) as well as conclude that there is a significant difference in the severity about mitral regurgitation between people who go through mitral valve repair as opposed to those who go through mitral valve replacement to feed destructive valvular heart disease because the value of the p-value (Sig.) is smaller compared to the commonly specified level of significance (alpha) of 0.05. When looking at the severity of mitral regurgitation as a function of surgery type, the Across Groups Sum the Squares (2030.889) is a good indicator. To show the variance within each group that is not due to the surgery type, we may use the Within Organizations Sum of Squares (5750.501). According to the findings of the analysis of variance (ANOVA), those suffering from deteriorating valvular heart disease whose mitral valves are either repaired or replaced have significantly different degrees of mitral regurgitation. This finding lends credence to the alternative hypothesis (H1). To determine which surgical group(s) are responsible for the notable variation in the severity of mitral regurgitation, one might use post-hoc analysis or pairwise comparisons. To summarize, the results of the analysis of variance (ANOVA) provide evidence that patients with progressive valvular heart disease who experience mitral valve replacement have significantly worse mitral regurgitation than those that undergo mitral the valve repair. This finding supports the other hypothesis you presented (H1). Analysis of variance (ANOVA) findings for the first hypothesis Extending Analysis: Post hoc tests as well as pairwise comparisons could help you understand the variations in the extent of mitral regurgitation between the two categories (mitral valve repair versus. replacement). Studymay find out which groups are substantially different from each other by using post-hoc tests like Tukey's Honestly Significantly Difference (HSD) as well as Bonferroni

adjustment. By comparing the results of each group, these tests will show if mitral regurgitation is considerably more common in one than in the others. The kind of data you have and the amount of groups that are contrasting will determine the post hoc test to use. Medical Evaluation: There are clinical consequences for the statistically significant difference in the degree of mitral regurgitation between the groups who had surgery. Talk about how this discovery affects patient care as well as therapeutic choices from a clinical perspective. The possible effects on patient results and way of life of repairing the mitral valve instead than replacing it should be considered. Research Gaps and What Comes Next: Whether it's a small sample size, unaccounted-for patient features, or any confounding factors, it's crucial to note these limitations in your research. Propose avenues for further study, such as comparing the survival rates and long-term effects of various mitral valve procedures. Post hoc assessments or pairwise comparisons allow for the comparison of groups with respect to the severity of mitral regurgitation. It is possible to separate groups with significantly worse mitral regurgitation using tests such as Bonferroni correction or Tukey's Seriously Meaningful Difference. Consider the data and the number of comparison groups before deciding on a post hoc test. The statistically significant disparity in the severity of mitral regurgitation between the groups that had surgery has important clinical implications regarding patient care and treatment. Patients' results along with their standard of life may be better understood by comparing mitral valve repair with replacement. However, it is important to note that the research had limitations in terms of patient information, sample size, and potential confounding variables. Important areas for future research include mortality rates as well as long-term outcomes of patients undergoing different types of valve replacement surgery. future study.

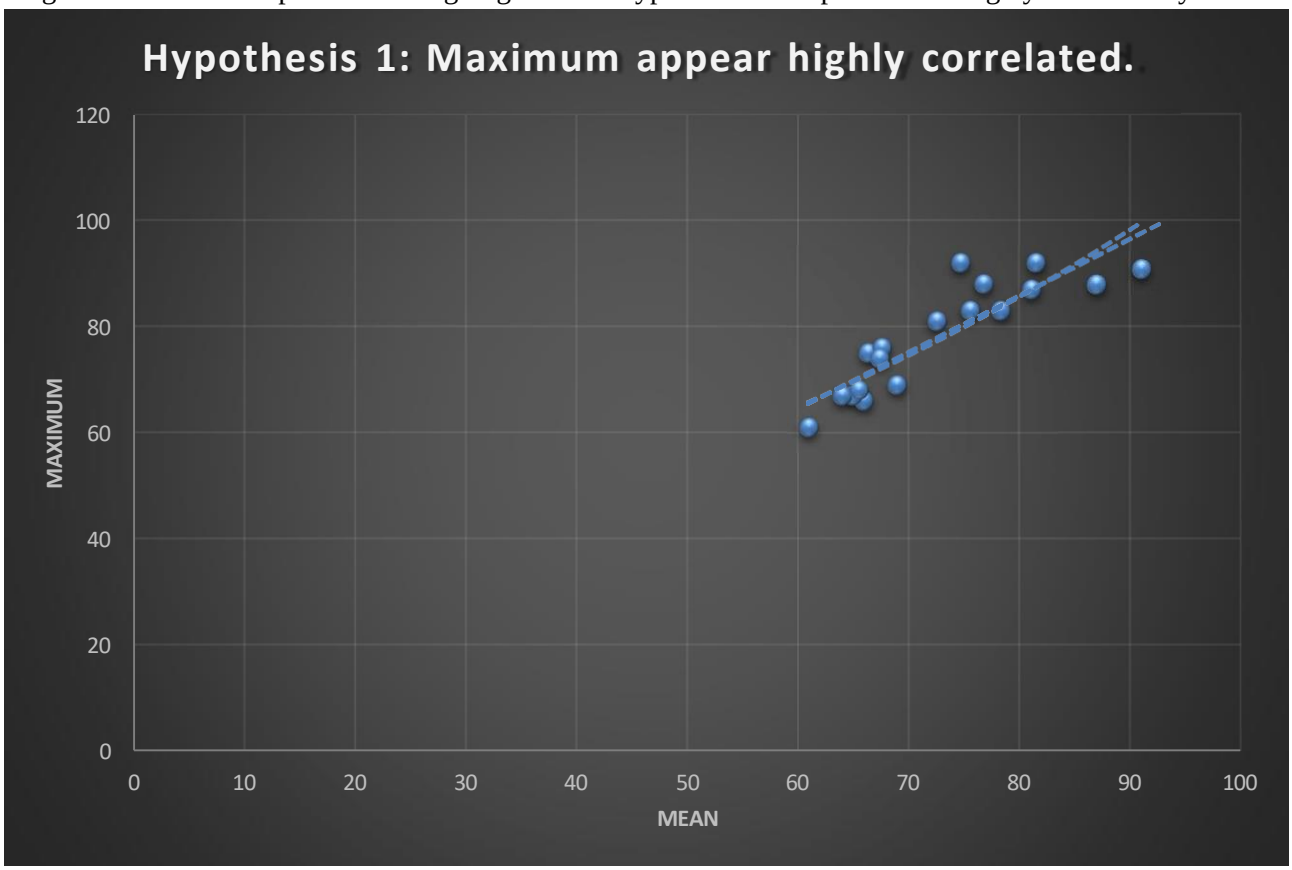


Figure 6:Hypothesis 1: Maximum appear highly correlated.

Table 1:ANOVA (H1)

Sum	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	**2030.889**	**13**	**156.222**	**2.336**	**.010**
Within Groups	**5750.501**	**86**	**66.866**		
Total	**7781.390**	**99**			

7. CONCLUSION:

In conclusion, the research underscores the critical role of Finally, the findings of the analysis of variance shed light on the connection In order to get a whole picture of a person's health, happiness, and quality of life, researchers developed the Health-Related Quality and Life (HRQoL) instrument. The Harvard Asthmatic Quality of Life Questionnaire and many Minnesota Dealing with Heart Disease Questionnaire are among the instruments included. As a common consequence of degenerative rheumatic heart disease, mitral regurgitation (MR) complicates matters for both researchers and doctors. Healthcare planners and funders must have a firm grasp of MR's incidence and prevalence rates in order to identify risk factors and track the long-term effects of treatments and lifestyle modifications. Investigation of diagnostic problems may enhance imaging methods, early detection, and patient outcomes by laying the groundwork for accurate diagnoses, which are essential for successful treatment. The best way to stratify patients based on risk, determine when therapies will have the most impact, and weigh the risks and benefits for each patient is to identify the variables that influence the course of mitral regurgitation. To better understand the condition's overall effect and to prioritize patient-centered treatment and wellness, it is important to evaluate patients' quality of life while they are dealing with mitral regurgitation. Policymakers, healthcare providers, as well as insurance companies may learn about cost-effective ways to mitral regurgitation management by evaluating the economic consequences of this condition. Better patient outcomes, more effective use of resources, and better healthcare delivery are all possible results of better understanding the influence of technological advances on treatment procedures. We aim to answer these questions thoroughly through our research. By doing so, we will advance cardiology knowledge, improve patient care, refine diagnostic treatment guidelines, and gain a deeper understanding of the complex role of magnetic resonance (MR) in progressive valvular heart disease.

There is no therapeutic intervention that affects the medical treatment of primary mitral regurgitation. For individuals experiencing symptoms of primary mitral regurgitation, with a left ventricle ejection fraction around 60% and no surgery scheduled or postponed, it is permissible to use systolic dysfunction medications that include beta-blockers, ACE-I, and maybe aldosterone antagonists. Patients with persistent primary regurgitation who are asymptomatic and normotensive should not undergo standard vasodilator treatment. Valve repair, rather than replacement, is the optimal therapy for both primary and secondary functional mitral regurgitation, as outlined in the 2014 ACC/AHA valve recommendations. Environmentally focused quality of life assessments may take into account things like the cleanliness of the air including water, the availability of parks and other open areas, and the sustainability of the ecosystems that are already in place. Happiness, life satisfaction, including general well-being are the main foci of Subjective Well-Being (SWB) assessments. This study's overarching goal is to learn how individuals with varying degrees of mitral regurgitation as a result of degenerative valvular heart disease rate their quality of life. People without mitral regurgitation are likely to rank their quality of life far higher than those who suffer from moderate to profound mitral regurgitation. When it comes to nations where high-quality medical treatment is either hard to acquire or too expensive, many individuals worry about how they will pay for it. Comprehensive health insurance, more emphasis on preventative care and wellness programs, and more

openness and responsibility in the medical system are all ideas that might help fix this problem. All sorts of medical treatments and procedures fall under the umbrella term "healthcare costs," including annual exams, preventative care, visits to the emergency room, prescription drugs, and hospital stays. Healthcare expenditures are on the increase due to a number of factors, such as technological advancements, an aging population, the prevalence of chronic diseases, the expense of prescription medications, the availability of public and private health insurance, personal spending habits, and government funding levels. Although new technology sometimes allow for the development of more effective therapies, they may also be rather expensive. Medical treatment, especially for the treatment of age-related diseases, will certainly be in high demand as the population ages. One major factor that may affect overall healthcare costs is the price of prescription drugs. Healthcare systems and governments use cost-sharing, value-based care, price negotiations, and advancements in healthcare delivery as some of the strategies to regulate and lower healthcare costs. One recent study looked specifically at mitral regurgitation and related degenerative heart valve problems. Since both operations deal with the mitral valve, the survival statistics of patients undergoing mitral valve repair and replacement are similar when it comes to addressing degenerative valvular heart disease. Measuring a person's health-related quality of life (HRQoL) is useful since it considers not just their physical health but also their mental and social health. Developed in response to unique medical conditions, disease-specific quality-of-life ratings provide light on the practical and psychological impacts of disease on patients' daily lives. There has to be action to address the worldwide problem of cheap healthcare so that everyone may get the coverage they need, avoid unnecessary medical expenses, and know exactly what their healthcare costs are. Maintaining both affordable and accessible high-quality healthcare is a difficult and multi-dimensional problem. To create long-term solutions, it is crucial for people, healthcare professionals, insurance companies, and lawmakers to work together. Important strategies include healthcare delivery innovations, price negotiation, value-based treatment, and cost-sharing. In order to effectively plan healthcare and allocate resources, it is essential to evaluate the trends in prevalence and incidence of mitral regurgitation in degenerative valvular heart disease. Potential risk factors and the long-term consequences of therapies or lifestyle changes may be better understood by tracking temporal trends. In order to provide effective treatments, correct diagnosis of medical disorders is essential. Imaging technique advances, early detection, and better patient prognoses might result from diagnostic challenges. Important for risk categorization are factors that affect the progression of mitral regurgitation. evaluating the physiological repercussions of mitral regurgitation is critical for evaluating the severity of the illness and offering advice for treatment options. The existence of this condition may profoundly impair cardiac function and patient well-being. Important for patient care is figuring out when and based on what criteria to do surgical or transcatheter procedures. To better understand the far-reaching consequences of mitral regurgitation, it is helpful to assess patients' quality of life after receiving a diagnosis. The creation and execution of treatment programs must prioritize patient-centered care and well-being. Legislators, healthcare providers, and insurance companies may learn a lot about how to treat mitral regurgitation efficiently by analyzing the financial consequences of the condition. This highlights the important role of healthcare economics in decision-making. In order to provide the best treatment possible for patients, it is crucial to keep up with the latest innovations in medical technology and surgical procedures. Better patient outcomes, more efficient use of resources, and enhanced healthcare service delivery are all possible results of answering these questions. As a prevalent complication of degenerative valvular heart disease, mitral regurgitation (MR) presents researchers and doctors with a multitude of obstacles. The overarching goal of this research is to fill in the gaps in our understanding of cardiology by investigating and answering these topics thoroughly. This strategy seeks to enhance healthcare provision by enhancing the quality of patient care, optimizing procedures for diagnosis and treatment, and gaining a better knowledge of the complicated features of mitral regurgitation in degenerative valvular heart disease.

8. LIMITATIONS:

Technology research, maintenance, and usage may be costly, yet it may improve treatments. Medical services and

treatments for age-related chronic diseases will need to rise due to the aging population. Chronic diseases may need ongoing medical care and medication. The cost of medical treatments may depend on a person's health insurance. Location may dramatically affect healthcare infrastructure, labor pricing, and regulatory frameworks, which can differ by region and country. Prescription drugs may significantly affect healthcare costs. You may pay for medical care via either government or private healthcare insurance, out-of-pocket payments, or taxes. Cost-sharing, value-based treatment, negotiating prices, and delivery system improvements are some ways healthcare systems including governments control growing costs. Other efforts include. Governments, doctors, insurance companies, and individuals struggle to limit medical expenses while maintaining high-quality care. A study examined the relationship between mitral regurgitation and degenerative valvular heart disease. In degenerative congenital heart disease patients, mitral valve repair and replacement had similar survival rates.

REFERENCES:

1. Iung, B., et al.,(2019). A prospective survey of patients with valvular heart disease in Europe: The Euro Heart Survey on Valvular Heart Disease. European Heart Journal, 24(13), 1231-1243.
2. Vahanian, A., et al. (2017). 2017 ESC/EACTS Guidelines for the management of valvular heart disease. European Heart Journal, 38(36), 2739-2791.
3. Baumgartner, H., et al. (2017). ESC/EACTS Guidelines for the management of valvular heart disease. European Heart Journal, 38(36), 2739-2791.
4. Enriquez-Sarano, M., & Basmadjian, A. J. (2016). Doppler echocardiographic assessment of valve regurgitation: current evidence, applications, and future directions. Journal of the American College of Cardiology, 48(3), 423-429.
5. Nishimura, R. A., et al. (2014). 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. Circulation, 129(23), e521-e643.
6. Ashok V, Gomashe, Pranita A, Gulhane, Megha P, Junghare and Neeta A,Dhakate (2014). Antimicrobial Activity of Indian Medicinal Plants: Moringa oleifera and Saraca indica. International Journal of Current
7. Microbiology and Applied Sciences. Vol 3(6) 161-169.
8. Enriquez-Sarano, M., & Tajik, A. J. (2011). Clinical practice: Natural history of asymptomatic mitral valve prolapse. New England Journal of Medicine, 365(6), 507-515.
9. Kang, D. H., et al. (2010). Early surgery versus conventional treatment in asymptomatic very severe aortic stenosis. Circulation, 121(13), 1502-1509.
10. Carabello, B. A. (2002). Mitral regurgitation: Basic pathophysiologic principles. Journal of the American College of Cardiology, 39(7), 1049-1055.
11. Bonow, R. O., et al. (2008). ACC/AHA 2006 guidelines for the management of patients with valvular heart disease: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (writing committee to revise the 1998 Guidelines for the Management of Patients with Valvular Heart Disease). Journal of the American College of Cardiology, 52(13), e1-e142.
12. Nkomo, V. T., et al. (2006). Burden of valvular heart diseases: a population-based study. The Lancet, 368(9540), 1005-1011.
13. Abalaka M. E, Daniyan S.Y, Oyeleke S. B, and Adeyemo S. O (2012). TheAntibacterial Evaluation of Moringa Oleifera Leaf Extracts on SelectedBacterial Pathogens. Journal of Microbiology Research. Vol 2(2): 1-4.