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# A Narrative Literature Review Addressing Causal, Risk, and Treatment of Paroxysmal Atrial Fibrillation

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**Abstract**
This study analyzes the causal and risk factors as well as different ways of treating paroxysmal atrial fibrillation to inform healthcare professionals and physicians in order to save many lives from Atrial fibrillation related death. Factually, it is estimated that 12.1 million people in the United States will have Atrial fibrillation in 2030. In 2019, Atrial fibrillation was mentioned on 183,321 death certificates and was the underlying cause of death in 26,535 of those deaths. Also, people of European descent are more likely to have Atrial fibrillation than African Americans. Because the number of Atrial fibrillation cases increases with age and women generally live longer than men, more women than men experience Atrial fibrillation. The study adopted a narrative literature review and Boolean search technique to identify 22 researches and review articles that are related to causal and risk factors as well as different ways of treating paroxysmal atrial fibrillation. As part of the study's findings, out of the twenty-two articles, five of the researchers, thus 22%, revealed in the literature that Heart palpitation or flutter in the chest is one of the symptoms of Atrial fibrillation. Researchers of 4 articles—thus 18% -- clearly stated in their research that one of the symptoms of Atrial fibrillation (AF) is "patient's chest pain/pressure". The study further revealed that some of the causes and risk factors of Symptomatic Paroxysmal Atrial Fibrillation include the following: Advancing age, High blood pressure, Obesity, Diabetes, Heart failures, European Ancestry, patient's lifestyles such as smoking and alcohol intake, as well as Chronic kidney disease, and Hyperthyroidism. Above all, this study revealed that Medications, Heart Rate Controls, Heart Rhythm Control, Blood Clots and Stroke Prevention, Electrical Cardioversion, Cardiac Ablation, Catheter Ablation, Surgical Ablation, and Maze Procedure are some of the different options of treating or curing Symptomatic Paroxysmal Atrial Fibrillation identified in the literature. Therefore, in order for healthcare professionals and physicians to help minimize mortality rate caused by Atrial fibrillation, they should pay more attention to patients' symptoms, the AF risk factors, and to also align them with appropriate treatment options to help save many lives across the globe.
**Keywords:** Atrial, Fibrillation, Symptomatic, Treatment, Risk-Factors, Heart, Stroke, Paroxysmal, Cardiac, Arrhythmia, Ablation, Surgical, Maze
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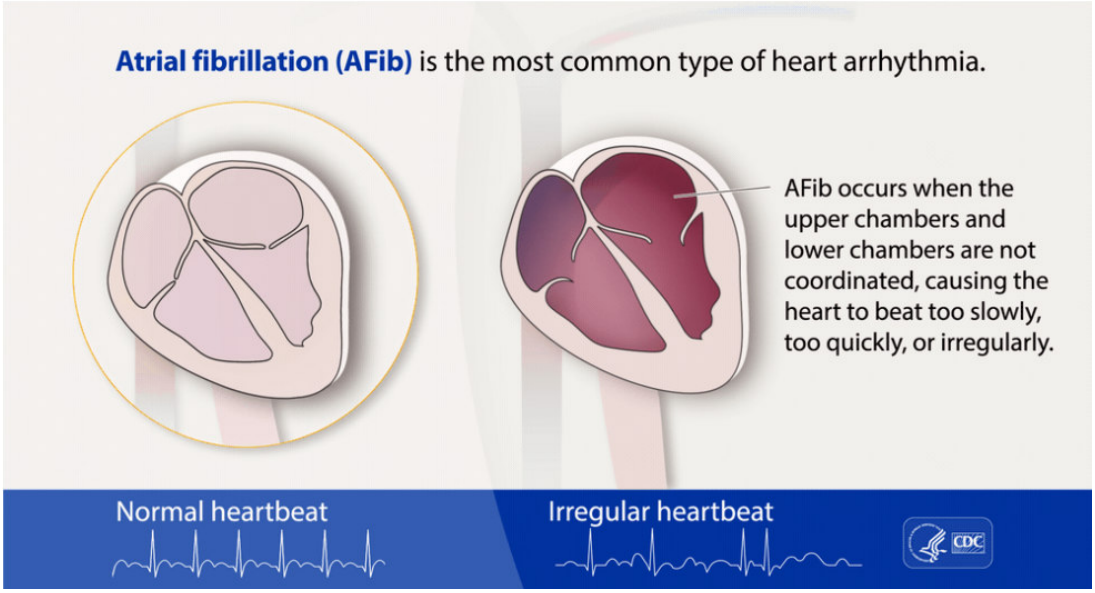
## INTRODUCTION

Atrial fibrillation is one of the major public health and medical science issue across the globe. Statistically, Atrial fibrillation is the most common serious abnormal heart rhythm and, as of 2020, affects more than 33 million people worldwide (Munger, Wu, & Shen, 2014; Anumonwo, & Kalifa, 2014). As of 2014, it affected about 2 to 3% of the population of Europe and North America (Zoni-Berisso et al., 2014). Additionally, Zoni-Berisso et al. (2014) further argued in the literature that this was an increase from 0.4 to 1% of the population around 2005. In the developing world, it was also observed that about 0.6% of males and 0.4% of females are affected (Zoni-Berisso et al., 2014). The percentage of people with Atrial fibrillation increases with age with 0.1% under 50 years old, 4% between 60 and 70 years old, and 14% over 80 years old being affected (Zoni-Berisso et al., 2014). Very sadly Atrial fibrillation resulted in 193,300 deaths in 2015, up from 29,000 in 1990 (GBD 2015 Mortality and Causes of Death Collaborators, 2016; GBD 2013 Mortality and Causes of Death Collaborators, 2014). Also, Hassan et al. (2022), Morillo et al. (2017), and Kornej et al. (2020) concurrently underscored in the literature that Atrial fibrillation (AF) is one of the most common cardiac arrhythmia expected to affect 6-12 million individuals in the United States by 2050.

Fundamentally, Atrial fibrillation is discussed in the medical literature as an abnormal heart rhythm that is characterized by rapid and irregular beating of the atrial chambers of the heart (Center for Disease Control and Prevention, 2015). According to Zoni-Berisso et al. (2014), Atrial fibrillation often begins as short periods of abnormal beating, which become longer or continuous over time. Additionally, Atrial fibrillation may also start as other forms of arrhythmia such as atrial flutter that then transform into Atrial fibrillation (Sok-Sithikun et al., 2015). Additionally, Center for Disease Control and Prevention (2020) also argued in the literature that Atrial fibrillation, which is often called AFib or AF, is the most common type of treated heart arrhythmia. Meanwhile, an arrhythmia is said to occur when the heart beats too slowly, too fast, or in an irregular way (see Figure 1 for more details).

**Figure 1:** A Diagram Showing Results of an Electrocardiogram (ECG) for Normal and Irregular Heartbeat

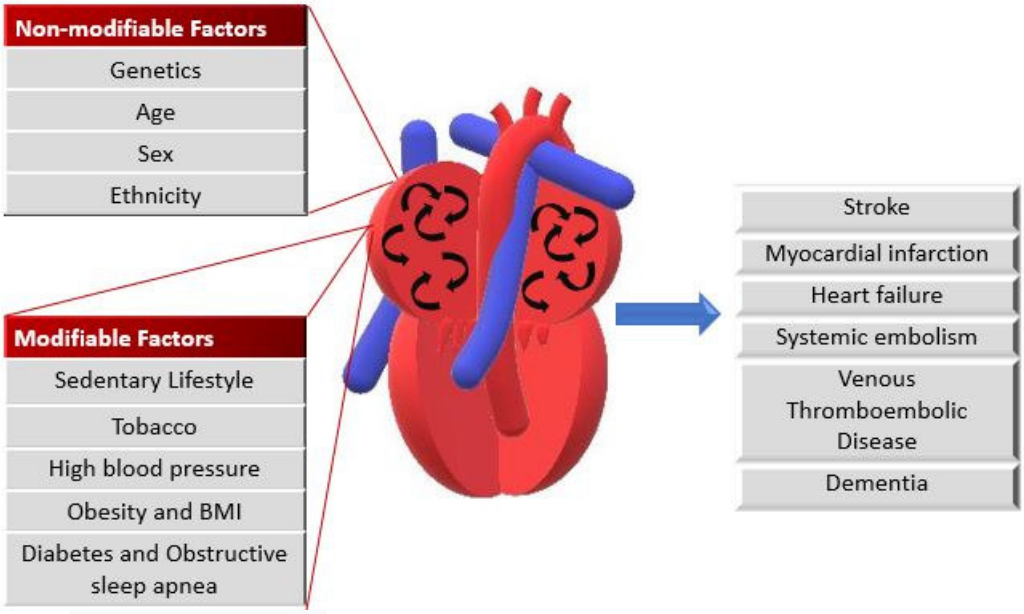



**Source:** Atrial Fibrillation | cdc.gov

By inspection of Figure 1, anytime a person has Atrial fibrillation (AFib), the normal beating in the upper chambers of the heart (the two atria) is irregular, and blood does not flow as well as it should from the atria to the lower chambers of the heart (the two ventricles). By it nature, according to CDC (2020), AFib may happen in brief episodes, or it may be a permanent condition. Very importantly, such episodes can be asymptomatic (Munger, Wu, & Shen, 2014). According to the literature, asymptomatic is an adjective categorizing the medical conditions that patients carry but without experiencing their symptoms, despite an explicit diagnosis. Meanwhile, symptomatic episodes (which is in contrast with asymptomatic episodes) may involve heart palpitations, fainting, lightheadedness, shortness of breath, and chest pain (Gray, 2010).

Figure 2 below displays some of the risk factors associated with Atrial fibrillation issue Gray (2010), and Munger, Wu, & Shen (2014), spoke about it in the literature. Atrial fibrillation is associated with an increased risk of heart failure, dementia, and stroke (See Figure 2 for more details). Additionally, it is quite obvious from Figure 2 that high blood pressure and valvular heart disease are the most common modifiable risk factors for Atrial fibrillation (Anumonwo, & Kalifa, 2014; Nguyen, Hilmer, & Cumming, 2013). Also, according to Anumonwo, and Kalifa (2014), other heart-related risk factors include heart failure (see Figure 2), coronary artery disease, cardiomyopathy, and congenital heart disease.

**Figure 2:** Atrial Fibrillation Risk Factors

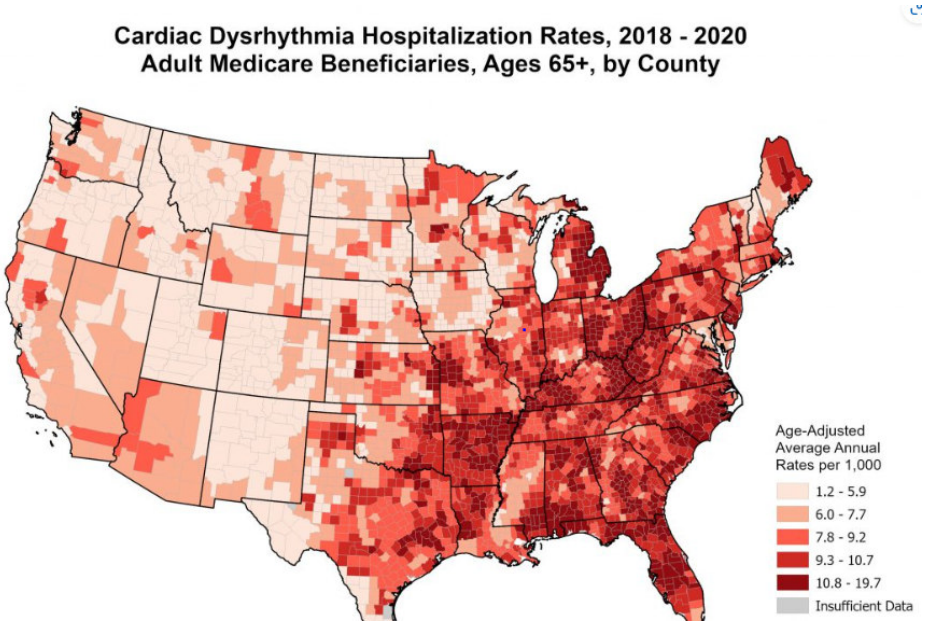



**Source:** Yaiza Rodriguez Garcia (2018) Diagram for Atrial fibrillation Risk Factors

Very uniquely, in low- and middle-income countries, valvular heart disease is often attributable to rheumatic fever (Mischke, Knackstedt, Marx, & Vollmann, 2013) , while lung-related risk factors are attributed to to the following Chronic obstructive pulmonary disease (COPD), obesity, and sleep apnea (Munger, Wu, & Shen, 2014). Other risk factors include excess alcohol intake, tobacco, smoking, diabetes mellitus, and thyrotoxicosis (Munger, Wu, & Shen, 2014; Staerk et al., 2017; Mischke, Knackstedt, Marx, & Vollmann, 2013). However, Munger, Wu, and Shen (2014) also noted in the literature that about half of cases of Atrial fibrillation are not associated with any of these aforementioned risks. Meanwhile, in many instances healthcare professionals might suspect Atrial fibrillation after feeling the pulse and confirm the diagnosis by interpreting an electrocardiogram (ECG) (Ferguson et al., 2013). A typical ECG in Atrial fibrillation shows irregularly spaced QRS complexes (Ferguson et al., 2013) without P waves (see Figure 1 for more details).

Despite the critical nature of the Atrial fibrillation disease, certain lifestyle changes can help reduce and/or maintain the situation. According to Chung et al. (2020), healthy lifestyle changes, such as weight loss in people with obesity, increased physical activity, and drinking less alcohol, can lower the risk for Atrial fibrillation and reduce its burden if it occurs. Also, it was observed in the literature by Anumonwo, and Kalifa (2014) that Atrial fibrillation is often treated with medications to slow the heart rate to a near-normal range (known as rate control) or to convert the rhythm to normal sinus rhythm (known as rhythm control). Additionally, Oishi, and Xing (2013) also argued that electrical cardioversion can convert Atrial fibrillation to normal heart rhythm and is often necessary for emergency use if the person is unstable. Other strategies for prevention include Ablation, prescription of Aspirin or anti-clotting medication (Amerena et al., 2013; Freedman, Potpara, & Lip, 2016). Notwithstanding the preventive measures the disease has continued to persist, and grow leading to several consequences (see Figure 3 for more details). As noted earlier, as part of the consequences Atrial fibrillation increases a person's risk for stroke. When standard stroke risk factors were accounted for, Atrial fibrillation was associated with an approximately fivefold increased risk of ischemic stroke (Tsao et al., 2022). Also, Atrial fibrillation causes about 1 in 7 strokes (Heart Rhythm Society, 2019). Strokes caused by complications from AFib tend to be more severe than strokes with other underlying causes. Strokes happen when blood flow to the brain is blocked by a blood clot or by fatty deposits called plaque in the blood vessel lining. More than 454,000 hospitalizations with Atrial fibrillation as the primary diagnosis happen each year in the United States (Benjamin et al., 2019). The condition contributes to about 158,000 deaths each year (Centers for Disease Control and Prevention, & National Center for Health Statistics, 2019). The death rate from Atrial fibrillation as the primary or a contributing cause of death has been rising for more than two decades (Heart Rhythm Society, 2019).

**Figure 3:** A Map Showing Concentrations of Counties with the Highest Cardiac Dysrhythmia Hospitalization Rates




**Source:** Center for Disease Control and Prevention (2022).

Figure 3 above shows concentrations of counties with the highest Cardiac Dysrhythmia Hospitalization Rates – meaning the top quintile – are located primarily in Florida, Georgia, Alabama, Arkansas, Kentucky North Carolina, West Virginia, Ohio, and Michigan. Additionally, pockets of high-rate counties also were found in Texas, Louisiana, Oklahoma, Nebraska, Missouri, Illinois, Tennessee, South Carolina, Indiana, Virginia, Pennsylvania, New Jersey, New York, Vermont, and Maine (see Figure 3 for more details). Therefore, in order to assist healthcare professionals, and physicians to improve upon the treatment of Atrial fibrillation, this study

tends to contribute to the medicine literature by analyzing the causal and risk factors as well as different ways of treating paroxysmal atrial fibrillation to inform healthcare professionals and physicians to help save many lives from Atrial fibrillation related death. This study will create awareness about the consequences, and some preventative practices, and further serves as a springboard for medical students' research, practitioners, physicians, and healthcare professionals.

## METHOD AND MATERIALS

This study follows a narrative literature review analysis. According to Petticrew and Roberts (2008), narrative literature review referred to as a systematic review that synthesizes the individual empirical studies—by systematically extracting, checking, and narratively summarizing information on their methods and results. In relation to narrative research studies, an in-depth search and inclusion criteria are explicitly explained and underscored. Narrative research inquiry is a group of approaches that rely on the written or spoken words or visual representation of individuals (Lichtman, 2013, p.95). These approaches emphasize the lives of individuals as told through stories. The emphasis, in these approaches, is on the studies, and documents related to Atrial fibrillation. Narrative can be both a method and the phenomenon under study (Lichtman, 2013, p.95). These definitions are pertinent to this particular review study because "narrative methods of research consider, "real world measures" that are appropriate when "real life problems" are investigated" (Lieblich et al., 1998, p.5). In addition, narrative reviews are beneficial in providing conclusions for researchers who examine topics that do not have one optimal way of measuring outcomes (Baumeister, 2003). The narrative nature of this systematic review allowed the researcher to examine and describe a wide range of outcomes of research designed to address the challenges, and importance of animatronic humanoid production within the robotic space.

### *Data Collection*

*Selection of articles.* All randomized controlled trials (RCTs) and observational cohort studies (OCS) were considered. Only studies that reported patients older than 18, had symptomatic Atrial fibrillation with at least one episode detected on electrocardiography (ECG) and were treatment naïve were considered. The researcher further considered studies conducted in the last ten years, from 2012 to 2022; studies were considered if they had sufficient data with more than ten patients. Also, based on the definition of Atrial fibrillation, Causes, and risk factors, treatment strategies of Atrial fibrillation, the researcher used the following criteria to select articles for the purposes of the review: (a) Study content included a focus on Causes and treatments of Atrial fibrillation. (b) Study content included also focus on risk factors, consequences, and preventative measures as well as treatments of Atrial fibrillation within and outside United States of America. (c) Researcher reported findings from empirical research designs (i.e. qualitative, quantitative, survey, or mixed methods designs, particularly in randomized controlled trials (RCTs) and observational cohort studies). (d) All Atrial fibrillation discussions, and symptomatic paroxysmal Atrial fibrillation related articles published in peer-reviewed journals. (e) Whole books, book chapters, dissertations, and theoretical manuscripts were excluded based on the lack of peer-review in such publications.

As part of the literature search, the data collection procedure took into account the first and second authors of the completed simultaneous electronic and ancestral searches for peer-reviewed articles by using the online database, MEDLINE, EMBASE, Cochrane, EBSCO, CINAHL, SCOPUS, Web of Science, PubMed, and Cochrane as well as Google scholar and advanced Google scholar. In fact, by using the Boolean indicators, "or", "and" and "not" the following search terms were entered into databases, Atrial fibrillation, symptomatic paroxysmal Atrial fibrillation, symptomatic paroxysmal AF, causes of symptomatic paroxysmal Atrial fibrillation, consequences of symptomatic paroxysmal Atrial fibrillation, risk factors of symptomatic paroxysmal Atrial fibrillation, different strategies to prevent symptomatic paroxysmal Atrial fibrillation, and treatments of symptomatic paroxysmal Atrial fibrillation. It is important to note that the initial search results yielded about 3,012 relevant articles on MEDLINE, EMBASE, and EBSCO, 200 on CINAHL, and SCOPUS, 150 on Web of Science, PubMed, and Cochrane, and 2,200 on both Google scholar and advanced Google scholar.

Based on the large number of authors using the terms like "Atrial fibrillation", "symptomatic paroxysmal", and "symptomatic paroxysmal Atrial fibrillation" in numerous ways, an abstract filter was also applied to the selection criteria. The study further widens the scope of the search to minimize the sampling of the selected articles by focusing on the causes, risk factors, and possible treatment strategies of Atrial fibrillation. This particular search yielded about 150 articles through the help of abstract filters. After the abstract filtration to reduce the size of the articles' selections, the researcher uses the two concepts, "symptomatic-paroxysmal" and "Atrial- fibrillation" to determine whether those remain articles meet the inclusion criteria, and 45 articles were chosen for inclusion. The researcher gave the 45 articles to two different Atrial fibrillation treatment experts/specialists, and Medical school professor with knowledge in Atrial fibrillation at Lagos State University to further review the 45 articles independently in order to ensure the reliability and validity of the analysis (or results). As a result of the three independent reviews by experts in the field, and a completed total of three

ancestral searches resulted in 22 articles for final inclusion. Therefore, a total sample of 22 articles which met the inclusion criteria were used for the purposes of review analysis.

## DATA ANALYSIS AND DISCUSSIONS

As part of the analysis of the selected articles of this study, both deductive and inductive coding of the concepts were used for the search. In relation to the experts' views and readings of the 22 articles, deductive codes were developed but were later observed to be insufficient in capturing all the concepts relevant to the estimation of the results or the findings. In view of the gap in estimation, the researcher further develops an inductive coding to strengthen the analysis. The analysis is organized into symptoms of Atrial fibrillation, causes and risk factors of Atrial fibrillation, and several possible treatment options for Atrial fibrillation among patients across the globe.

### *General Findings from Atrial Fibrillation Articles*

**Table 1:** Symptoms of Atrial Fibrillation

| **Symptoms of Atrial Fibrillation** | **Percentage (%)** | **Number (*n*)** |
|---|---|---|
| Heart Palpitations (i.e. Flutter in the Chest) | 22 | 5 |
| Chest Pain/Pressure | 18 | 4 |
| Extreme Fatigue | 14 | 3 |
| Shortness of Breath | 14 | 3 |
| Lightheadedness | 18 | 4 |
| Irregular heartbeat | 14 | 3 |

*Note: Twenty-two total articles.*

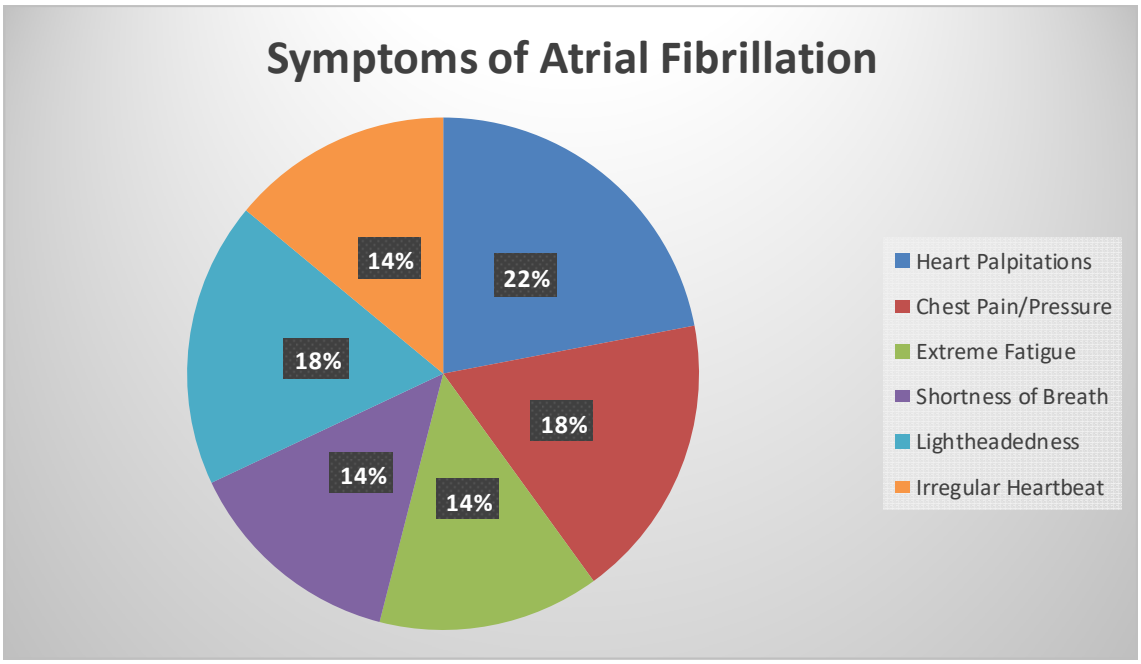



**Figure 4:** Symptoms of Atrial Fibrillation

Researchers of 5 (22%) articles explicitly stated that Heart Palpitations (i.e. Flutter in the Chest) is one of the symptoms of Atrial fibrillation (AF). Four (18%) researchers (**Smith, 2022;** Sok-Sithikun et al., 2015; Staerk et al., 2017; Munger et al., 2014) explained in their research that one of the symptoms of Atrial fibrillation (AF) that seems to be evidenced in patients is "Patient Chest Pain/Pressure". Additionally, three (14%) other research works (**Heart and Stroke Foundation, n.d.; Gray 2010;** Anumonwo & Kalifa, 2014) vividly stated that one of the symptoms of Atrial fibrillation (AF) seen among patients is "Extreme Fatigue". Also, three (14%) researchers (Colilla et al., 2013; Johns Hopkins Medicine, 2023; Abbott & Kannel, 1991) arguably discussed that "Shortness of Breath" is one of the symptoms of Atrial fibrillation (AF) seen among patients across the globe. Again, four (18%) researchers (Focus Medica, n.d.; Guitierrez & Blanchard, 2011; Center for Disease Control and Prevention, 2020; Kornej et al., 2010) provide detailed discussion in the literature about the fact that "Lightheadedness" is one of the symptoms of Atrial fibrillation (AF) seen among patients globally. Toward this end, three (14%) researchers (Chung et al., 2020; Ferguson et al., 2013; GBD 2015 Mortality and Causes of Death Collaborators, 2016) provide a discussion about the fact "Irregular heartbeat" is one of the symptoms of Atrial fibrillation (AF) seen among patients (see Table 1 and Figure 4 for more details).

**Table 2:** Causes & Risk Factors of Symptomatic Paroxysmal Atrial Fibrillation

| **Causes & Risk Factors of Symptomatic Paroxysmal Atrial Fibrillation** | **Percentage (%)** | **Number (*n*)** |
|---|---|---|
| Smoking | 27 | 6 |
| High Blood Pressure | 18 | 4 |
| Obesity | 18 | 4 |
| Diabetes | 14 | 3 |
| Heart Failures | 18 | 4 |
| Advancing Age | 14 | 3 |
| European Ancestry | 14 | 3 |
| Chronic Kidney Disease | 14 | 3 |
| Moderate to heavy Alcohol Use | 27 | 6 |
| Hyperthyroidism | 14 | 3 |

*Note: Twenty-two total articles.*

**Figure 5:** Causes & Risk Factors of Symptomatic Paroxysmal Atrial Fibrillation

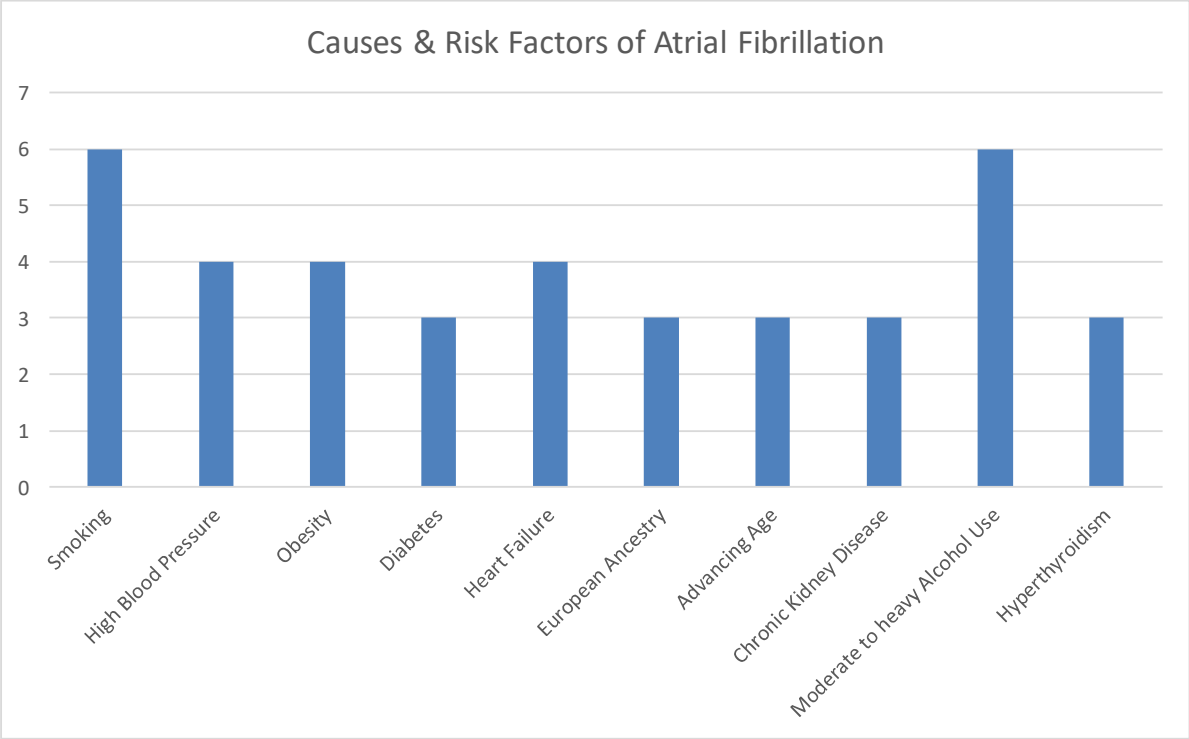



Figure 5 and Table 2 discuss some causes and risk factors of Symptomatic Paroxysmal Atrial Fibrillation across the globe. Figure 5 reveals that some of the causes and risk factors of Symptomatic Paroxysmal Atrial Fibrillation include the following: Advancing age (Benjamin, Levy & Vaziri, 1994; Benjamin et al., 2019), High blood pressure (Tsao et al., 2022; Center for Disease Control and Prevention, 2022), Obesity (Colilla et al., 2013; Center for Disease Control and Prevention, 2022), Diabetes (Smith, 2022; Center for Disease Control and Prevention, 2022), Heart failures (Center for Disease Control and Prevention, 2022; Anumonwo, & Kalifa, 2014; Benjamin et al., 2019), European Ancestry (Center for Disease Control and Prevention, 2022), patient's lifestyles such as smoking and alcohol intake (Center for Disease Control and Prevention, 2022; Heart Rhythm Society, 2019), Chronic kidney disease, and Hyperthyroidism (Center for Disease Control and Prevention, 2022). Both Table 2 and Figure 5 concurrently revealed that both smoking, and moderate to heavy use of alcohol are the leading cause of Atrial fibrillation based on the literature search.

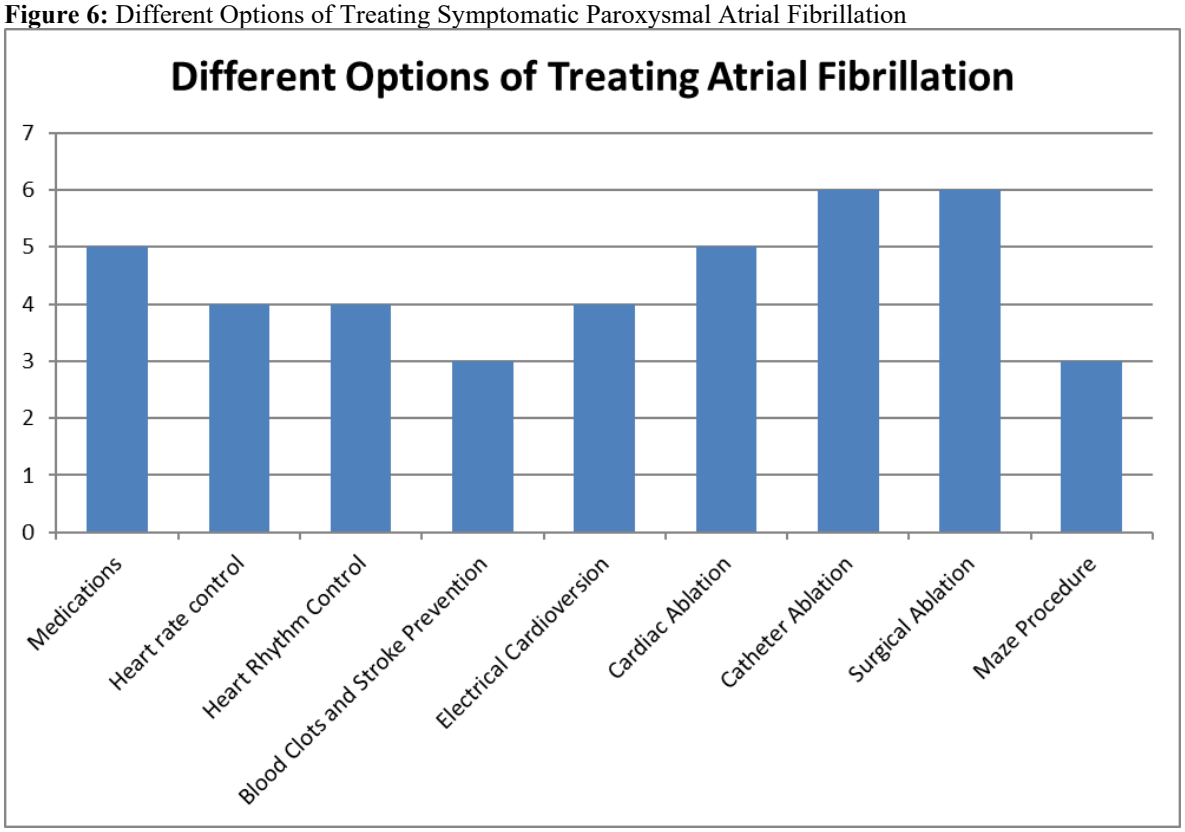
**Table 3:** Different Options of Treating Symptomatic Paroxysmal Atrial Fibrillation

| Different Options of Treating Symptomatic Paroxysmal Atrial Fibrillation | **Percentage (%)** | **Number (*n*)** |
|---|---|---|
| Medications | 22 | 5 |
| Heart Rate Control | 18 | 4 |
| Heart Rhythm Control | 18 | 4 |
| Blood Clots and Stroke Prevention | 14 | 3 |
| Electrical Cardioversion | 18 | 4 |
| Cardiac Ablation | 22 | 5 |
| Catheter Ablation | 27 | 6 |
| Surgical Ablation | 27 | 6 |
| Maze Procedure | 14 | 3 |

*Note: Twenty-two total articles.*

Both Table 3 and Figure 6 present the discussion about the different options of Symptomatic Paroxysmal Atrial Fibrillation treatments. By inspection, Table 3 and Figure 6 revealed that Medications, Heart Rate Controls, Heart Rhythm Control, Blood Clots and Stroke Prevention, Electrical Cardioversion, Cardiac Ablation, Catheter Ablation, Surgical Ablation, and Maze Procedure are some of the different options of treating or curing Symptomatic Paroxysmal Atrial Fibrillation identified in the literature.

**Figure 6:** Different Options of Treating Symptomatic Paroxysmal Atrial Fibrillation




Clearly, Smith (2022) argued in the literature that medication is one of the several options of treating Atrial fibrillation among patients (see Table 3 and Figure 6 for more details). Smith further argued that if a patient problem comes from condition like an overactive thyroid gland or high blood pressure, then a physician or doctor is more likely to give a patient medication to control the issues or problem (i.e. Atrial fibrillation). Generally, a physician/doctor will try to keep a patient heartbeat steady and prevent problems like blood clots. According to Smith (2022), the most common way to treat fibrillation is with drugs that control your heartbeat, and the rhythm of the heartbeat. Most people take a medication called digoxin (Lanoxin), or Flecainide, Propafenone, Quinidine, etc. to control both the rate and rhythm of heartbeats.

Additionally, 'blood clots and stroke prevention' is one of the several options of treating Atrial fibrillation (Smith, 2022; Heart and Stroke Foundation, n.d.). These medications thin your blood to lower your chance of having these conditions. These can make you bleed more easily, though, so you might have to cut back on some activities that can lead to injuries. The most common are: Aspirin, Clopidogrel, Heparin, Apixaban, etc. It was also observed from the medical literature that if medications do not get a patient Atrial fibrillation problem under

control, the doctor/physician might recommend one of these: electrical cardioversion, cardiac ablation, and maze procedure (Smith, 2022; Heart and Stroke Foundation, n.d.). Under 'Electrical cardioversion' the physician/doctor gives the patient's heart a shock to regulate his/her heartbeat. In this instance, the physician/doctor uses paddles, or stick patches called electrodes to the patient's chest or sometimes at the patient's back. This approach or option of treatment gives the patient's a mild electrical shock to get his/her heart's rhythm back to normal.

Another option of treating Atrial fibrillation is cardiac ablation (see Figure 6 and Table 3 for more details). According to Smith (2022), Cardiac Ablation has two major options- catheter ablation, and surgical ablation. Catheter ablation, also called radiofrequency or pulmonary vein ablation, is not surgery, and it is the less invasive of the two options. Here, a doctor puts a thin, flexible tube into a blood vessel in the patient leg or neck. Then the doctor guide it into the patient's heart. When it reaches the area that is causing the arrhythmia, it sends out electrical signals that destroy those cells. The treated tissue helps get the patient's heartbeat regular again. There are two main types of Catheter ablation (i.e. Radiofrequency ablation, and cryoablation) (Smith, 2022; Heart and Stroke Foundation, n.d.). For the case of Radiofrequency ablation, the doctor uses catheters to send radiofrequency energy (similar to microwave heat) that creates circular scars around each vein or group of veins, while for the case of Cryoablation, a single catheter sends a balloon tipped with a substance that freezes the tissues to cause a scar (Smith, 2022; Heart and Stroke Foundation, n.d.).

Above all, the second option of Cardiac Ablation is the Surgical Ablation (Smith, 2022; Heart and Stroke Foundation, n.d.). Surgical ablation involves cutting into the patient's chest. There are three kinds of surgical ablation: maze procedure, mini- maze, and convergent procedure (Smith, 2022; Heart and Stroke Foundation, n.d.). In relation to Maze procedure, this usually done while you're having open-heart surgery for another problem, like a bypass or valve replacement. The surgeon makes small cuts in the upper part of the heart. They are stitched together to form a maze of scar tissue that stops abnormal signals. While for the case of mini-maze, most people with Atrial fibrillation do not need open-heart surgery. That is where this minimally invasive option comes in. The doctor makes several small cuts between your ribs and uses a camera to guide catheters for either cryoablation or radiofrequency ablation. Some hospitals offer robot-assisted surgery that uses smaller cuts and allows for greater precision. Your doctor will put a video camera or tiny robot into your chest to guide the creation of scar tissue that may help keep your heartbeat at the right pace (Smith, 2022; Heart & Stroke Foundation, n.d.). Lastly, convergent procedure is the third kind of surgical ablation (Smith, 2022; Heart and Stroke Foundation, n.d.). Convergent procedure pairs catheter ablation with a mini maze. The doctor/physician uses radiofrequency ablation in the pulmonary vein, and a surgeon makes a small cut under the patient's breastbone to use radiofrequency energy on the outside of the patient's heart. Toward this end, both radiofrequency ablation (RFA) and cryoballoon ablation (CBA) are considered safe options for the treatment of Atrial fibrillation (Shi et al., 2022; Santangeli et al., 2016). The underlying triggers for paroxysmal Atrial fibrillation are assumed to originate in the pulmonary and thoracic veins (Bunch & Cutler, 2015; Santangeli et al., 2016). Therefore, the role of CBA which electrically targets the pulmonary vein has been considered promising (Scala et al., 2020 cited in Hassan et al., 2022).

## CONCLUSION

In conclusion, it was observed from the literature that most people with atrial fibrillation show no symptoms. Also, most of the Atrial fibrillation patient's have no idea about the causal and risk factors that led to AF issues. The lack of awareness thereof made it very hard for individuals to take precaution against the Atrial fibrillation problem by visiting the doctor regularly, maintaining a healthy, and nutritious diet, quitting smoking and alcohol intake, monitoring blood pressure and cholesterol levels, and above all learning to manage stress. As a result of the perceived observations from the systematic review, there is the need for more campaign and education to create massive awareness about the complications, symptoms, and risk related factors that are associated with Atrial fibrillation (AF) problem. Also, healthcare professionals and physicians should pay more attention to patients' symptoms, the AF risk factors, and to also align them with appropriate treatment options to help save many lives across the globe.

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