Bibliometric Analysis of Factors Associated with the Incidence of Rehospitalization in Congestive Heart Failure Patients Using Vos-Viewer

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ABSTRACT

Congestive heart failure is a condition where the heart pumps blood inadequately so that the body's needs such as nutrition and oxygen are not fully met. One of the complications that occurs is excess fluid or hypervolemia which is characterized by edema, increased body weight and shortness of breath. The aim of this study was to identify patterns or trends in scientific publications regarding factors that cause re-hospitalization in congestive heart failure patients. This study uses bibliometric methods to examine overall research regarding factors that influence rehospitalization rates in congestive heart failure patients. VOSviewer is used to extract search results after the Publish or Perish application is used to search the database. The findings show that the terms have been characterized as the number of basic terms that are expected to utilize VOS-watcher. After investigation, there are 5 groups (red, blue, purple, yellow, and green) which describe the relationship between different subjects. The VOS viewer offers three different visualizations to demonstrate bibliometric mapping: network visualization, overlay visualization, and density visualization. Keywords such as "heart failure," "hospitalization," "cardiovascular," "risk factors," and "readmission" were most frequently used. I searched for a number of scattered articles about examining factors related to rehospitalization in patients with congestive cardiovascular disease using VOS-Watcher, and I found 10 Rankin concentrations related to this, no one of which came from Indonesia. This bibliometric technique is very important for determining uniqueness when conducting additional research because it highlights key themes in each field of science or previous research related to the analysis of factors associated with re-hospitalization in congestive heart failure patients.
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KEYWORDS: Analysis; Factor; CHF; Rehospitalization

ARTICLE DETAILS

INTRODUCTION

Congestive cardiovascular disorder is a condition in which the heart does not draw enough blood so that the body's needs, such as nutrients and oxygen, are not fully met. One of the discomforts that occurs is excess fluid or hypervolemia which is characterized by edema, weight gain, and shortness of breath (Purnama Sari et al., 2023). Patients with congestive heart failure are known to be at risk of dying from a number of conditions. It is common knowledge that people with congestive heart failure are more likely to die than those who do not have the condition. This is consistent with the deterioration of the quality of life of people with congestive heart failure as they age. Based on research, female congestive heart failure patients have a lower risk of death than male congestive heart failure patients. But other studies have shown that female congestive heart failure patients have a worse prognosis (Lilik & Budiono, 2021). Congestive cardiovascular disorders, among other problems of the cardiovascular system, remain a serious medical condition. The Community for Infectious Disease Prevention and Prevention estimates that about 5.7 million adults in the U.S. are adversely affected by cardiovascular disorders, and most of those patients will die within five years or less. According to World Health Organization (WHO) data in 2021, cardiovascular disease will be the leading cause of death worldwide, accounting for about 17.9 million deaths in 2019,

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or 32% of all deaths worldwide. One of the most common health problems in the world, heart failure affects about 26 million people worldwide. 2 The prevalence of cardiovascular disease in Asia is recorded at 1.26-6.7%, while in the US the death rate reaches 5.8 million people/year (Pratama et al., 2024). Based on data from the Global Prosperity Data Exchange (GHDx) in 2020, the number of cases of congestive cardiovascular disease in the world reached 64.34 million cases with 9.91 million deaths (Lilik & Budiono, 2021). Based on a 2020 report by the Indonesia Welfare Office, stroke is the leading cause of death in Indonesia, followed by congestive cardiovascular disorders. In 2018, according to data from Basic Health Research (Ministry of Health of the Republic of Indonesia, 2018), there were around 1,017,290 Indonesia residents who were diagnosed with congestive heart failure. The cumulative incidence rate or proportion of new cases of congestive heart failure has decreased from 9.82 percent in 2018 to 1.90 percent in 2019 according to data from the Central Java Provincial Health Office (Central Java Provincial Health Office, 2019, 2020). But (Lilik & Budiono, 2021) observed that this figure is much higher than the overall prevalence rate of congestive cardiovascular disorders in Indonesia. In 2013, the prevalence of cardiovascular disease according to doctors' conclusions was 0.13 percent or around 229,696 people, according to data from the Basic Welfare Survey (Health Office of the Republic of Indonesia, 2013). According to the Ministry of Health of the Republic of Indonesia (2019), this number increased to 1.5% or around 1,017,290 people in 2018. An increase in the prevalence of cardiovascular diseases also occurred in South Sumatra district from 0.07% or around 3,836 people in 2013 to 1.2% or around 33,566 people (Wellbeing Administration, 2019). Patients with congestive heart failure are known to be at risk of dying from a number of conditions. It is known that people with congestive cardiovascular disorders are more likely to die than people who have not experienced the disease. This is consistent with the deterioration of the quality of life of people with congestive heart failure as they age. Based on research, female patients with congestural cardiovascular disorders have a lower risk of death than male patients with congestive cardiovascular disorders. But other studies have shown that female congestive heart failure patients have a worse prognosis (Lilik & Budiono, 2021). Congestive cardiovascular disease, also called CHF, is a condition in which fluid accumulates in the interstitial and intravascular spaces due to the failure of the kidneys to eliminate salt and water, leading to an increase in heart pressure. Increased diastolic end tension of the left ventricle is another term for side effects of cardiovascular disorders such as dyspnea, pneumonia, and edema (PERKI, 2020). According to the Global Health Data Exchange (Lippi et al., 2020), there will be 64.34 million cases of congestive heart failure and 8.52 people diagnosed with heart failure for every 1,000 people

worldwide in 2020. Cardiovascular disorders, according to Savarse et al. (2017), add to the expansion of overall well-being administration funding and have high mortality and severity rates. Cardiovascular disorders were the next leading cause of death in Indonesia in 2019 after a stroke, according to the Worldwide Weight of Sickness (GBD 2019 Illness and Wounds Partners, 2020). Based on Riskesdas 2018, the overall prevalence of CHF is 1.5%, with a prevalence of 4.6% in the long-term age group and a prevalence of 1.2% in the Lampung Region. The occurrence of cardiovascular disorders increases in the event of severe heart damage, so that it can develop into a prolonged cardiovascular disorder (Health Office of the Republic of Indonesia, 2021). The Banjarnegara Islamic Clinic in the Banjanegara Regime, Central Java, ranked third in cases of congestive cardiovascular disorders over the past three years, from 2016 to 2018, with accompanying frequencies: 440 cases in 2016, 681 cases in 2017, and 506 cases in 2017. 2018 (until October 2018). The rate of improvement of a person with cardiovascular disorders slows down over time. In fact, after the patient has been hospitalized for a long time, this condition worsens the patient's condition and the patient often complains of infection. As shown by (Suci Khasanah, Amin Susanto, 2020), as happened at the Banjarnegara Islamic Hospital, the patient was forced to be retreated because of the alleged complaint. On average, more than half of the cases require rehospitalization in the hospital (Clinical Records of RSI Banjarnegara, 2018). Patients with cardiovascular disorders who do not comply with recommended therapy, for example, people who are unable to take the right prescriptions, ignore dietary restrictions, neglect clinical development, participate in unreasonable active work, or are unable to feel the side effects of regression, as a rule cause rehospitalization opportunities. Advances in past research results have shown that dietary consistency, medication use and hypertension basis are related to recurrence rates in patients with congestive cardiovascular problems (Syahrir et al., 2022). Research also shows that taking prescriptions on time can reduce side effects that lead to readmissions (Suci Khasanah, Amin Susanto, 2020). The effect of this concentration also suggests that the autonomic factors associated with increased readmissions in patients with congestive cardiovascular disorder (CHF) over a period of about 30 days are advanced age, CHF (NYHA) levels, and post-hospitalization drug use: beta blockers, diuretics, thiazides, and nitrates. Meanwhile, the free factors associated with a decrease in hospitalization of at least 30 days were length of hospitalization, BMI levels, and use of Master inhibitor or ARB (Angiotensin Receptor Blocker) drugs, calcium channel blockers, and spironolactones (Rudiati, Suci Khasanah, 2020). Coordinated with the Banjarnegara Islamic Center, data was obtained that of nine patients with congestive cardiovascular problems, five patients stated that they were diligent in taking prescriptions, and two patients

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followed a low-salt diet with a low readmission rate. Meanwhile, four patients stated that they did not regularly take medication and had a free meal routine, two patients had low re-hospitalizations and two patients had high re-hospitalizations. Based on meetings with patients and families, it was found that of the nine patients, five patients said they did not know anything about what diets were allowed and what were not recommended for them. The uniqueness above is the reason to focus attention on the elements that have an impact on the recurrence of CHF patients at the Banjarnegara Islamic Emergency Clinic who return to the health clinic. In addition, to achieve this goal, an organized methodology is expected to be able to plan research data sets with a bibliometric approach through the VOS-watcher application. In the field of bibliometrics, research using a bibliometric approach has been widely carried out in Indonesia; However, there has not been a single article that uses bibliometrics to examine variables associated with rehospitalization in congestive heart failure patients.

METHOD

This exploration utilizes Google Researcher information from 2020 to 2024 and bibliometric investigations with the Distribute of Die and VOS-Watcher applications. Bibliometrics, or statistical and quantitative methods, are used to analyze academic influence and the characteristics of scientific output. As shown by (Ilham Muhammad, 2023), creative design and information visualization are combined in

the process of bibliometric mapping, namely the visual presentation of bibliometric data. Each article is collected from the Google Schoolar database and Google Schoolar is one of the largest collections of peer survey journal information in general, and the data is taken as far as the entire investigation. According to the standard "title, tagline, and dynamic (subject area)", a web-based search was initiated on April 6, 2024, with the tagline "investigation, factors, rehospitalization, congestive cardiovascular disorders". Articles are exported in "ris" format to improve the database. The final article was entered into VOS-Watcher for understanding and checking examples as a bibliometric map. VOS-Watcher allows creating slogan maps based on bibliometric organizations and deciphering distribution guides, countries or diaries based on organizations (Co-citation). The repetition of the slogan can be changed keeping in mind the desire to discard immaterial slogans. In accordance (Van Eck NJ, 2020), VOS-Watcher programming can also be used to carry out information mining, planning and ordering articles taken from data collection sources.

DISCUSSION AND RESULTS

There must be at least two terms for the VOS-Viewer display term to be used. The test produces five groups – red, purple, yellow, blue, and green – each of which describes the relationship between two subjects. Three unique visuals that VOS-Watcher can use to show bibliometric layout are the hierarchical depiction (figure 1) and the saw thickness.
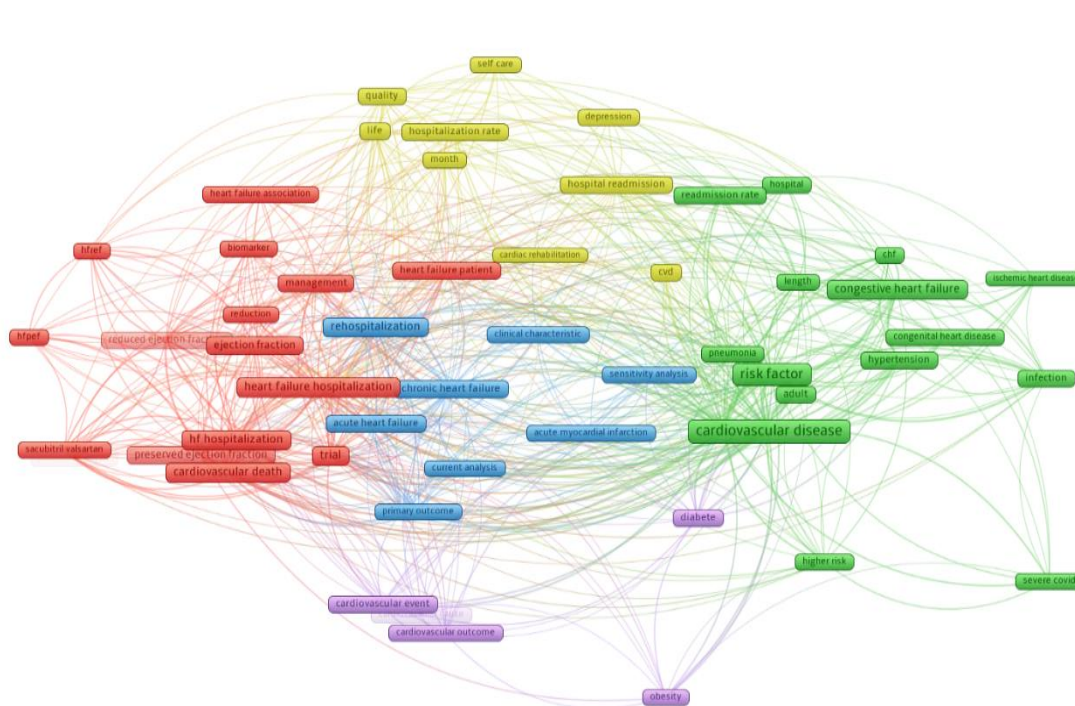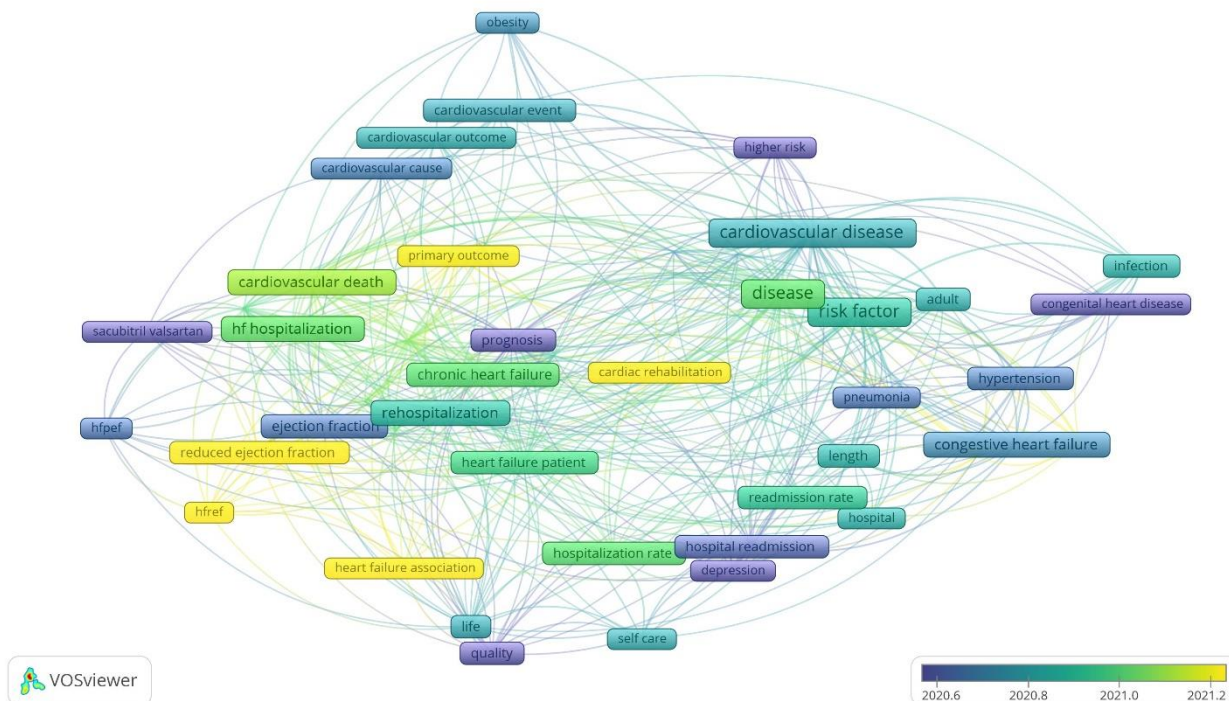

Figure 1. Visualization Topic Area Using VOS-Viewer Using Network Visualization (Source: VOSViewer)
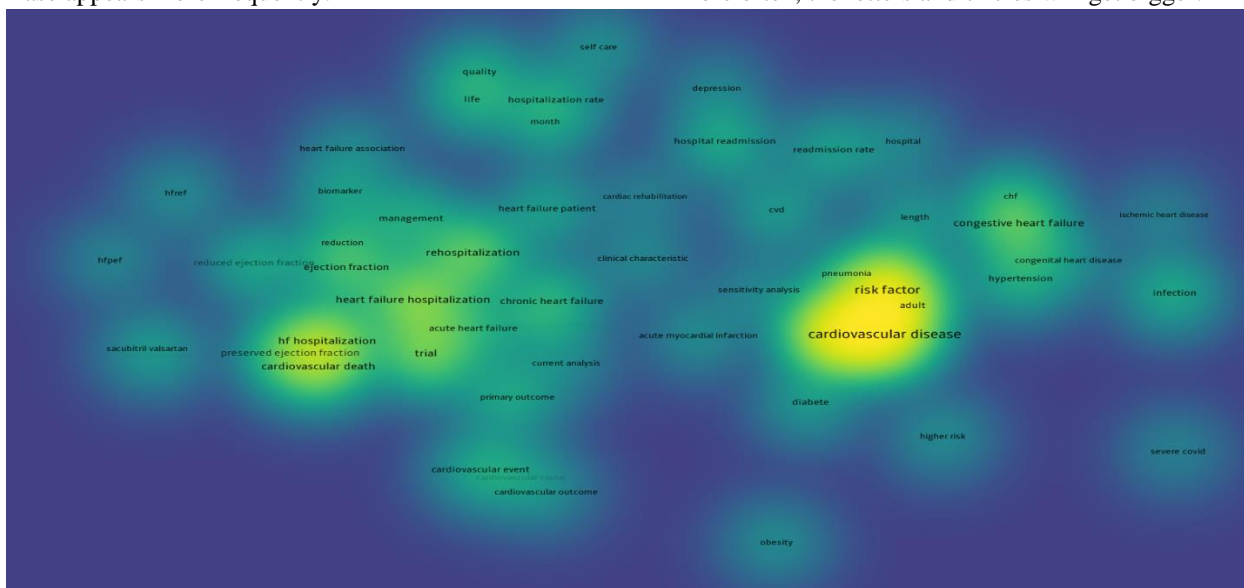
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Figure 2. Topic Area Visualization Using VOS-Viewer Using Overlay Visualization (Source: VOSViewer)

Keywords are denoted by colored circles. When the slogan appears in the title and is unique, there is a positive relationship between the size of the circle and the slogan. So, the appearance of letters and circles affects their size. The letters and circles will increase in size assuming the catchphrase appears more frequently.

From the picture above, 5 clusters were found, cluster 1 consists of motto words separated by colored circles. The number of keywords in the title and abstract is correlated with the size of the circle. As a result, the size of letters and circles is affected by how often they appear. If the motto appears more often, the letters and circles will get bigger.

Figure 3. Topic area Visualization Using VOS-Viewer Using Density Visualization (Source: VOSViewer)

Figure 3 above represents image point regions using thickness perception using VOS-Watcher (Source: VOSViewer) title, keywords, and abstract were used to extract 910 articles. The number of articles distributed in 2024 will be 16 articles, in 2023 there will be 29 articles, in 2022 there will be 136 articles, in 2022 there will be 305

articles, and in 2020 there will be 486 articles. Because it is collected while following the share or die app, all the information collected is in the research diary design.

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DISCUSSION

Figure 1 shows the meetings at each point in the districts analyzed. Catchphrase: Component investigations, readmissions, and congestive cardiovascular disorders. This condition still occurs even though they are in different groups. It is known for certain that these third trademarks generally have a regular relationship; for example congestive cardiovascular problems were associated with taking care of oneself and writing less was associated with pollution. From a visualization perspective, it can be seen that in Indonesia there has been no research regarding self-care in congestive heart failure patients. In contrast, the flow research design depicted in Figure 2 shows that, with the exception of 2015–2020, there has been no new exploration of self-care, personal satisfaction, or gloom in patients with congestive cardiovascular disorders. Meanwhile, Figure 3 illustrates the depth of exploration, the more dangerous the variety, the more inspections are carried out. We can decide whether component examination, rehospitalization, or congestive cardiovascular disorders are necessary based on this information. Based on the data collected, Figures 1 to 3 show that the terms "variable examination", "rehospitalization", and "congestive cardiovascular disorders" are frequently used, despite the fact that the keyword "congestive cardiovascular disorders" remains ambiguous. Based on these data, we can determine the importance of assessment, especially the assessment of harmful variables in adult patients with congestive cardiovascular problems. Consequently, the findings of this study highlight the novel nature of research in adult patients with bibliometric risk factors for congestive heart failure. Some emerging research patterns and examples in the field of Component Examinations, Readmissions, and Congestive Cardiovascular Disorders include: The first makes society more aware of how important it is for people working in the field of the cardiovascular system to provide care for patients who have problems with their cardiovascular system and need safe and prompt treatment. Both work on tolerable outcomes and model cooperative deliberation between cardiovascular medics, physicians, and other clinical groups. All three advances development and new applications to assist cardiovascular clinical faculty in calm and board assessments. The fourth includes consideration of patient safety issues and the well-being of cardiovascular clinical nurses in often stressful and stressful work environments. The development of more effective models of care when cardiovascular nurses, physicians, and other medical teams collaborate is the first area of factor analysis, readmission, and congestive heart failure research that requires additional investigation. both patient and board risk assessment in the congestive heart failure care setting. Third, increase the information and capacity of cardiovascular medical nurses to offer safe and appropriate types of assistance through creating instructions and preparing programs. All four advance new developments and customizable applications to assist cardiovascular clinical medical nurses in patient assessment and management quickly and on an equal footing. Research that utilizes the RCT (randomized controlled trial) research strategy, as indicated by (Emily C. Zabor, Alexander M. Kaizer, 2020), can be an outline. This research provides evidence that there is still no examination that examines components such as obesity, individual satisfaction, misery, self-care, serious work on re-hospitalization rates in patients with congestive cardiovascular disorders. Although there is no conscious collection of information, especially in Indonesia, this research aims to configure, describe, and disassemble a precise piece of writing using a bibliometric approach. This bibliometric approach is very important for determining the novelty of conducting additional research because it can identify important themes in each study, field of science, or research that has been carried out so far.

CONCLUSION

There is a need for research on self-care, individual satisfaction, and suffering in patients with congestive cardiovascular problems in clinical settings. Hypothetically, this study would help cardiovascular medical nurses to better understand the variables that drive readmission of patients with congestive cardiovascular disorders and hypothetically help. Through this research, it is hoped that cardiovascular nurses can improve their ability to care for congestive heart failure patients.

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