

Research Article

Risk Factors for Acute Myocardial Infarction in Young Adults: Literature Review

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Abstract.

Myocardial infarction is the leading cause of death worldwide. Deaths from cardiovascular disease each year have increased due to higher levels of stressors, unhealthy lifestyles and others. In addition, according to the World Health Organization, there is usually one death from cardiovascular disease every two seconds, and a heart attack every five seconds. This research used a literature study design and assessed the quality of journals using a JBI cohort, cross-sectional, and case-control studies with the aim of obtaining quality journals in accordance with the research topic. 16 journals were obtained, consisting of six journals from Google Scholar, four journals from Science Direct, five journals from Pubmed, and one journal from Proquest. There are factors that influence myocardial infarction in young adults, namely comorbid factors, psychological factors, lifestyle factors, and gender factors. The comorbid factors that often occur are hypertension, diabetes, dyslipidemia, and obesity, while the genetic factors include a family history of myocardial infarction. Lifestyle factors consist of smoking, alcohol consumption, poor diet, and less activity. Men are more susceptible to myocardial infarction at a young age.

Keywords: factors, associated, myocardial infarction, young adults

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1. INTRODUCTION

Myocardial infarction is the leading cause of death worldwide. (1) Deaths from cardiovascular disease each year have increased due to higher levels of stressors, unhealthy lifestyles and others. In addition, the fact that according to WHO itself states that there is usually a death from cardiovascular disease every two seconds, and a heart attack every five seconds. (2) Strengthened by the WHO 2017 states that there is an increase in the number of deaths caused by cardiovascular, namely 17.7 million deaths and covers 13% of the total deaths in the world with 6 million deaths caused by myocardial infarction. (3) Research evidence from the 2018 Indonesian basic health survey where the lowest prevalence of heart disease is 0.70% while the highest prevalence is 2.20%. Meanwhile, the residents themselves who have unhealthy living habits, such as consuming fatty

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foods, high cholesterol and fried foods once per day range from 10.30% to 58.1%. (4) In addition, the 2013 health research stated that more than 1 million (0.5%) of the total population in Indonesia were diagnosed with coronary heart disease, including myocardial infarction. In 2016, cardiovascular disease, including myocardial infarction, was the number one cause of death in Indonesia, compared to other non-communicable diseases. In the United States alone adults aged >20 from 2011 to 2014, reaching 7,900,000 (3.0%) had myocardial infarction. (5)

Based on data it has been found that the incidence of myocardial infarction has increased, namely in young adults. (6) While South Asians themselves represent about a quarter of the world's population with a very young age, namely younger than 35 years. (7) According to Krittanawong (2020) in America alone there is a population of 5,765,755 young individuals who are hospitalized, aged (<55 years), of which 1,149,185 (19.9%) were found to have acute myocardial infarction. (8) According to Zasada (2021), more than 230,000 thousand patients in Poland with a diagnosis of acute myocardial infarction were under 40 years of age, the number of young patients with myocardial infarction increased from year to year by 1.2% in 2014 and to 1.3% in 2017. (9) Meanwhile, according to Gulati (2020) in the United States alone, every year more than 30,000 women who are younger than 55 years are hospitalized with a diagnosis of myocardial infarction. Compared to men, younger women alone represent 25% of infarctions, myocarditis, and also had very high comorbidities, a longer hospital stay, and also had a higher hospital mortality rate during hospitalization. (10) Meanwhile, myocardial infarction patient which is classified as young adults, namely 20-30 years, is known to have a smoking percentage of 27 (78.5%) patients, obesity 437 (39.1%) patients, physical inactivity 432 (38.2%). (11) For the prevalence of myocardial infarction at a young age in South Asia, especially India, it reached 11.7% with age < 40 years, 33.9% < 50 years, and 22.2% aged 50 years. (7) In addition, myocardial infarction does not only occur in the elderly or elderly, in fact 1 in 5 people (20%) who have a heart attack are young, namely under 40 years old, 40% between 40-45 years old, and 40% over 50 years old.

In addition, myocardial infarction in young adults has a very bad impact both in terms of health, productivity levels, and the future of the nation, especially at a young age, they cannot do the same activities as people of the same age with a healthy body. (12) Myocardial infarction itself can be considered a disease that is very damaging and detrimental, especially when it occurs in young individuals. This is related to very significant morbidity, psychological, and of course financial barriers for patients and families. (9) Myocardial infarction at a young age is very impactful for unmarried individuals who are also very at risk of not having children, because young adulthood

is a period of productive age, where at this age is a suitable period for having children because reproductive organs are very reproductive in producing new individuals. (13)

2. MATERIALS AND METHODS

The results of data analysis in this study using research methods using library research methods or literature review by collecting and analyzing the essence of previous studies that have been written by researchers through several references from Google Scholar, Science Direct, Pubmed, Proquest. The researcher conducted a journal search using 4 English keywords, namely the English keywords used ((Factor) OR (Risk Factors) OR (Predisposition) OR (Precipitation)) AND ((Myocardial Infarction) OR (Heart Attack) OR (Heart disease) OR (IMA)) AND ((Young Age) OR (Young Adult Age) OR (Young) OR (Mature Age)). stage screening is the stage to select the appropriate criteria in this study. This study conducted a screening by reading repeatedly related to the topic in this study to find criteria that were in accordance with the study. The next stage is the research quality stage, at this stage a quality test of selected journals is carried out using JBI (Cross Sectional Studies, Cohort Studies, Case Studies) with the aim of obtaining quality journals and according to the research topic. Thus, 16 journals were obtained consisting of 6 journals from Google Scholar, 4 journals from Science Direct, 5 journals from Pubmed, and 1 journal from Proquest.

3. RESULTS AND DISCUSSION

There are factors that influence myocardial infarction in young adults, namely comorbid factors, lifestyle factors, gender factors and genetic factors. The comorbid factors that often occur are hypertension, diabetes, dyslipidemia, and obesity. While the genetic factors include a family history of myocardial infarction. Lifestyle factors consist of smoking, alcohol consumption, poor diet, and low activity. As for gender, which explains that men are more susceptible to myocardial infarction at a young age compared to women, it is influenced by the hormone protectors that women have so that the heart's work system is more awake.

Comorbid factors influence myocardial infarction in young adults. From the 16 journals analyzed, there are 16 journals that discuss comorbid factors, one of which is Venkateshwarlu's (2013) study. (14) In this study, the average age was 22 years where many patients had myocardial infarction due to physical factors. Gender or gender factors influence myocardial infarction in young adults. Of the 16 journals analyzed,

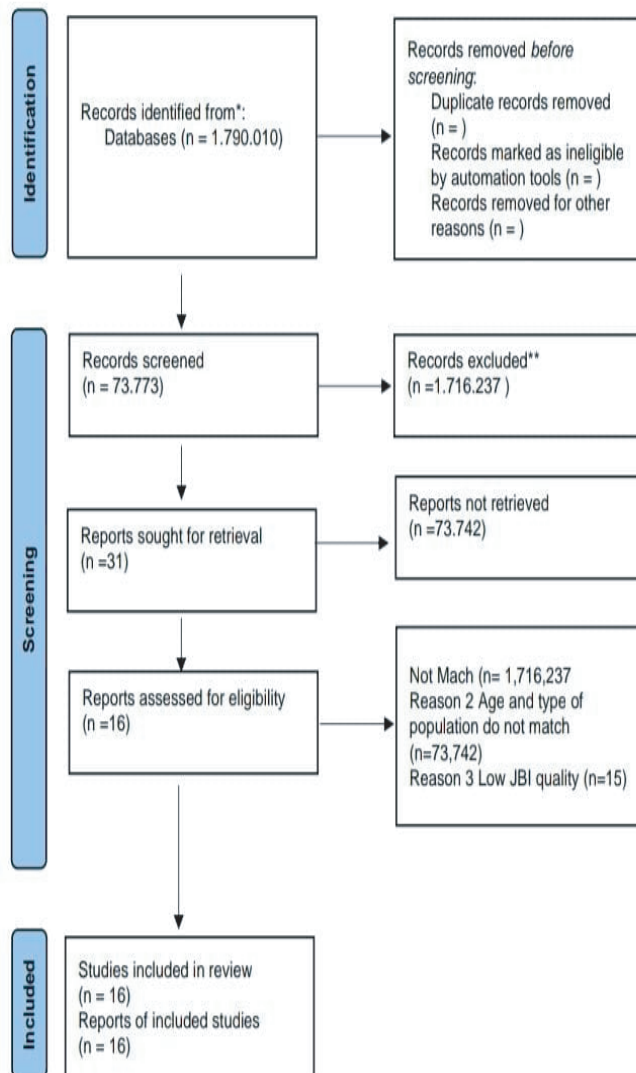


Figure 1: Identification of studies via databases and registers.

it was found that 9 journals discussed gender, one of which was in Sinha's research (2017) that in this study the gender factor greatly influences the incidence of myocardial infarction in young adults, where the male sex tends to be more prone to myocardial infarction. Lifestyle factors or lifestyle factors affect myocardial infarction in young adults. From the 16 journals analyzed, it was found that 15 journals discussed lifestyle, one of which was in the research of Bhardwaj (2014), the study explained that lifestyle factors are very influential related to the incidence of myocardial infarction in young adults, because young individuals very rarely pay attention to their lifestyles that are not healthy. (15) Genetic factors influence myocardial infarction in young adults. Of the 16 journals analyzed, 10 journals discussed genetic risk factors, one of which was the study by Venkateshwarlu (2013) which stated that family history greatly influences the incidence of myocardial infarction in young adults.

4. CONCLUSION

There are factors that influence myocardial infarction in young adults, namely comorbid factors, lifestyle factors, gender factors and genetic factors. The comorbid factors that often occur are hypertension, diabetes, dyslipidemia, and obesity. While the genetic factors include a family history of myocardial infarction. Lifestyle factors consist of smoking, alcohol consumption, poor diet, and low activity. As for gender, which explains that men are more susceptible to myocardial infarction at a young age compared to women, it is influenced by the hormone protectors that women have so that the heart's work system is more awake.

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