

## Analysis article about effectiveness of ramadhan fasting on hypertension: a review article

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### Abstract

*Hypertension is a risk factor for cardiovascular disease and atherosclerosis. The purpose of this review is to investigate the role of Ramadan fasting in hypertension. This research is a type of literature review. Data from articles were gathered by searching "Ramadan fasting and hypertension" in Google Scholar, Bio-med, and Pub-med. The researchers have six articles that developed in the synthesis table and utilize as the foundation for our discussion after identifying the articles that support our research purpose. As fact, we found that fasting throughout Ramadan had no effect on blood pressure, hypoglycemia, or ketonemia in hypertensive patients. Lastly, fasting throughout Ramadan help hypertension patients lower their blood pressure as well.*

**Keyword:** Ramadan, fasting, hypertension

### Abstrak

Hipertensi merupakan faktor risiko untuk masalah kardiovaskular dan aterosklerosis. Tinjauan pustaka ini bertujuan untuk mendapatkan analisis tentang peran puasa Ramadhan pada kondisi hipertensi. Penelitian ini merupakan jenis studi kepustakaan. Kami mengumpulkan artikel menggunakan *search-engine* dari *google-scholar*, Bio-med, Pub-med menggunakan kata kunci "Puasa Ramadhan dan Hipertensi.", Setelah menyaring artikel yang sesuai dengan kriteria penelitian literatur kami, kami mendapatkan enam artikel yang kami kembangkan dalam tabel sintesis dan menjadi dasar pemikiran dalam diskusi kami. Hasilnya kami menemukan Puasa Ramadhan tidak meningkatkan tekanan darah, hipoglikemia, dan ketonemia bagi individu dengan hipertensi. Puasa Ramadhan dapat membantu menurunkan tekanan darah pada penderita hipertensi.

**Kata kunci:** Puasa, Ramadhan, hipertensi

### Introduction

Hypertension is a risk factor for cardiovascular disease and atherosclerosis. The development of hypertension has reached a very alarming stage globally, with the number of sufferers of 331 million in women and 317 million in men in 1990 to 626 million in women and 652 million in men in 2019. Hypertension prevalence shows that the distribution of the proper anti-hypertensive treatment is still not reachable by all groups. Likewise, those who received treatment were only 47% of women and only 38% from men (1). Similarly, in Indonesia, the problem of hypertension has also increased from 2007 to 2018, from 31.7% to 34.1% on a national scale. This magnitude shows the magnitude of the problem of hypertension in the focus of public health. If left, it will get bigger (2).

One practice to suppress the problem of hypertension and use pharmacology is lifestyle modification. Lifestyle modifications that can bind for a whole month are Fasting during Ramadan, which is an obligation for Muslims. Fasting this Ramadan is a condition that can regulate the consumption time for a whole month (3). Fasting in Ramadan can help in diet modification or lifestyle modification in a whole

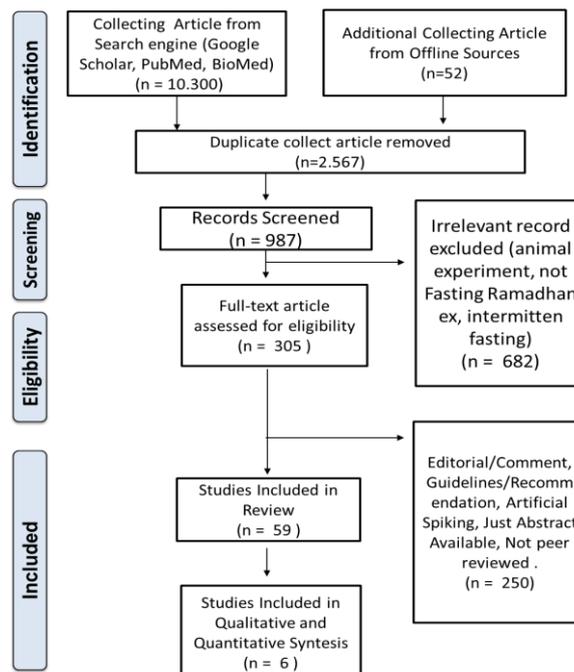
month. Fasting in Ramadhan month can support the process to help relieve health problems that arise, including blood pressure, cholesterol, and blood sugar (4).

Fasting in Ramadan can be an alternative solution used as an anti-hypertensive treatment. The anti-hypertensive treatment itself has not been reached for various reasons. Therefore, this study is urgently needed to meet these needs. This literature review aims to obtain an analysis of the role of Ramadan fasting in conditions of hypertension. By examining the role of Ramadan fasting on hypertension, our idea is expected to be the scientific basis for anti-hypertensive treatment with a religious approach in the Muslim majority group.

## Method

This research is a type of literature study. We collect articles using search engines from Google Scholar, bio-med, Pub-med using the keyword "Ramadan Fasting and hypertension." We found about 10,352 articles containing this keyword. After screening articles that match our literature research criteria, we got six articles that we developed in a synthesis table and became the foundation of thinking in our discussion. Furthermore, specifying an article is feasible because we want to see the effect of the variables we examine in several timescales. In selecting the article, we selected the type of research used. We accept the types of research: Cross-sectional, Case-Control, and Cohort research types.

The articles that we use to form our synthesis table have gone through a screening process from the criteria we have set. In making PRISMA flowcharts, we use semi-manual techniques. We use the N-vivo application for some extensive databases, and some articles we carry out manual processes, and the processes we have done are not listed in Prospero.



**Table 1.** PRISMA Flowchart

### **Vaccination Policy**

The Covid-19 vaccination will be required for doing Hajj and Umrah, worshipping at Masjidil Haram, and pilgrimages to Masjid Nabawi for pilgrims from the kingdom [19]. Tawakalna's implementation of the three vaccination categories (immunity for pilgrims who have received two doses of the Covid-19 vaccine, or who have been vaccinated for 14 days after receiving the first dose of vaccine, or vaccinated people who recover from infection) for all age groups vaccinated for Umrah pilgrims from within the kingdom [20].

Candidates for Umrah pilgrims from outside the kingdom must provide a vaccination certificate that has been validated by a licensed official in their own country. Furthermore, there is a need for acknowledgment of the integrity of information, as well as a commitment to institutional quarantine processes for pilgrims who arrive at the kingdom through a system sanctioned by the appropriate authorities [21].

The Indonesian government is still negotiating with Saudi Arabian authorities for Umrah. Saudi Arabia has not yet to implement a new policy for Indonesian Umrah pilgrims. Saudi Arabia's most recent policy is to lift the previously suspended ban on direct flights from some nations. Unfortunately, the suspension is only lifted for foreigners with resident permission in Saudi Arabia, including Indonesian people. Although the ban has been removed, Saudi Arabia has imposed many restrictions, including the completion of a full vaccination (two doses) of the vaccine licensed by Saudi Arabia. Furthermore, vaccination must be given out in Saudi Arabia before the foreigner returns to his country of origin. When they arrive in Saudi Arabia, they must obey the Saudi Arabian government's health protocols [22].

### **Vaccination Challenge**

Time restrictions make it difficult for the government to speed up Covid-19 and meningitis vaccines for the candidates' Hajj and Umrah pilgrims. Furthermore, the sequence of vaccines, inspections, and quarantines required of Covid-19 patients will very probably increase the costs of future Hajj and Umrah [23]. Meanwhile, the Saudi Arabian Aviation Authority (GACA) required that all Umrah pilgrims have a complete vaccine certificate (two doses) suggested by Saudi Arabia government [24].

Saudi Arabia's government recognizes four types of vaccines: Pfizer, AstraZeneca, Moderna, and Johnson & Johnson. Before entering the holiest city, candidates of pilgrims from India, Indonesia, Pakistan, Turkey, Egypt, Argentina, Brazil, South Africa, and Lebanon must complete a 14-day quarantine in a third country [25]. Furthermore, the candidates of pilgrims who have received the Sinovac vaccine are required by Saudi Arabia to receive a booster vaccination with the vaccine suggested by the Saudi Arabia government [26].

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