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# How Do Non-Communicable Diseases Increase COVID-19 Deaths?

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Coronavirus 2019 (COVID-19) is a novel respiratory viral disease which has caused a worldwide emergency due to its rapid spread and high mortality rate causing severe disorders (1). According to the latest reports by World Health Organization (WHO), as of May 2, 2021, 151.8 million people have been infected and 3.2 million deaths have been reported worldwide, most of which occurred in the United States, India, Brazil, France and Turkey respectively. In Iran, 2.5 million people have been infected and 72,000 deaths have been reported (2).

According to a study conducted by the WHO in 155 countries around the world, the prevention and treatment of non-communicable diseases has been severely disrupted since the beginning of the Covid-19 pandemic(3). (53% of services for hypertension disease, 49% of services for diabetes, 42% of services for cancer and 31% of services cardiovascular disease). This condition is inducing a considerable concern because people with non-communicable diseases are at higher risk of severe form of COVID-19 and deaths caused by it (4).

With increasing average of life expectancy, the number of elderly in countries has increased which has led to an increase in the prevalence of non-communicable diseases and its following problems (5). According to the WHO, 41 million people die from non-communicable diseases (NCDs) annually worldwide, which is about 71% of all world's deaths, and more than 15 million people aging between 30 to 69 die each year with the cause of non-communicable diseases. 85% of all premature deaths and 77% of all deaths caused by non-communicable diseases occur in low- and middle-income countries (6). Cardiovascular diseases, cancer, chronic respiratory diseases and diabetes are the most common non-communicable diseases. Non-communicable disease mortality has increased dramatically in most countries lately (7) as cardiovascular diseases show the highest mortality due to NCD (17.9 million per year), followed by cancers (9.3 million), chronic respiratory diseases (4.1 million) and diabetes (1.5 million). These four groups of diseases account for more than 80% of all premature deaths due to NCD (6).

Previous studies have shown that people who has at least one underlying disease are at higher risk for severe form of COVID-19, its complications, and death (8), given that 60 to 90% of deaths due to Covid-19 is attributed to co-





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occurrence of NCDs, especially diabetes, hypertension and cardiovascular diseases (9, 10). Chinese Center for Disease Control and Prevention has stated that the mortality rate of people with cardiovascular disease due to COVID-19 is 10.5% higher than people with chronic respiratory disease or cancer (11). Patients with diabetes are more likely to get infected with COVID-19 and die from it, and also to be hospitalized and transferred to the intensive care unit (ICU) (12).

COVID-19 is a disease which has caused a worldwide emergency. The people with non-communicable diseases are at higher risk of severe form of COVID-19 and deaths caused by it. The prevalence of non-communicable diseases and associated mortality is increasing worldwide. As well as the deaths due to Covid-19 is attributed to co-occurrence of NCDs, especially diabetes, hypertension and cardiovascular diseases. So NCDs and comorbidity could be impact on increasing COVID-19 deaths.

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## Conflict of interest

All authors declared no conflict of interest.

## Authors' contribution

All authors contributed to the study conception and design.

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