

# Frequency of underlying diseases, symptoms and mortality rate of COVID-19: a systematic review and meta-analysis

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## Abstract:

Coronavirus disease 2019 (COVID-19) is known to be affected by underlying diseases of the respiratory system. In this meta-analysis, the keywords of COVID-19, underlying diseases, symptoms, and mortality were searched in national and international databases to obtain the related studies. The inclusion criteria were as follows: interventional, clinical, descriptive and cross-sectional, and studies focusing on COVID-19. This study was conducted based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses protocol. Eighteen studies were selected to be finally analyzed. The mean percentage of mortality was 14% (I<sup>2</sup> = 98.9, P < 0.001). The most common symptoms were fever (91%, I<sup>2</sup> = 88.5, P < 0.001) and cough (71%, I<sup>2</sup> = 84.5, P < 0.001), and the most frequent underlying diseases were hypertension (41%, I<sup>2</sup> = 98.9, P < 0.001), diabetes mellitus (18%, I<sup>2</sup> = 88.7, P < 0.001) and cardiovascular disease (11%, I<sup>2</sup> = 87.7, P < 0.001). Findings of present study suggest that individuals with underlying diseases have a higher rate of mortality following COVID-19 infection.

**Keywords** COVID-19, meta-analysis, SARS-CoV-2, underlying diseases