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## The impact of vitamin and mineral supplements usage prior to COVID-19 infection on disease severity and hospitalization

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**Abstract:** The COVID-19 pandemic has caused a global public health emergency. Nutritional status is suggested to be related to the severity of COVID-19 infection. Herein, we aimed to explore the impact of using vitamin and mineral supplements prior to COVID-19 infection on disease severity and hospitalization. In addition, the prior use of aspirin as an anticoagulant on the disease severity was investigated. A cross-sectional, self-administered survey was conducted between March and July 2021. Recovered COVID-19 individuals (age  $\geq$  18 years, n = 2148) were recruited in the study. A multivariate logistic regression was used to evaluate the associations of supplements and aspirin use with COVID-19 disease severity and hospitalization status. Among the participants, 12.1% reported symptoms consistent with severe COVID-19, and 10.2% were hospitalized due to COVID-19. After adjustment for confounding variables (age, gender, BMI, cigarette smoking status, and the number of comorbidities), the multivariate logistic regression model showed that the consumption of vitamin D supplements prior to COVID-19 infection was associated with a significant decrease in disease severity (OR = 0.68, 95% CI 0.50 - 0.92; P = 0.01), and a lower risk of hospitalization (OR = 0.64, 95% CI 0.45 - 0.89; P = 0.01). On the other hand, there were no significant differences in the frequencies of severe illness and hospitalizations with the consumption of vitamin A, folic acid, vitamin B12, vitamin B complex, vitamin C, zinc, iron, selenium, calcium, magnesium, omega 3, and aspirin before COVID-19 infection. Among the investigated nutrients, the use of vitamin D prior to COVID-19 infection was associated with reduced disease severity and hospitalization. However, more studies are required to confirm this finding.