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## Effect of natural products use prior to infection with COVID-19 on disease severity and hospitalization: A self-reported cross-sectional survey study

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**Abstract:** Background: Managing coronavirus disease 2019 (COVID-19) using available resources is essential to reduce the health burden of disease. The severity of COVID-19 is affected by nutritional status. In this study the effect of natural product use prior to infection with COVID-19 on disease severity and hospitalization was explored. Methods: This was a cross-sectional study. Between March and July 2021, a self-administered survey was conducted in Jordan. Individuals who recovered from COVID-19 and were  $\geq 18$  years old were the study population. Study measures included the use of natural products, COVID-19 severity, and hospitalization status. A multivariate regression model was used for statistical analysis. Results: The mean age (mean  $\pm$  SD) of the study sample (n=2,148) was 40.25  $\pm$  15.58 years old. Multivariate logistic regression showed that the regular intake of carnation (OR [0.56], CI [0.37-0.85]), onion (OR [0.69], CI [0.52-0.92]), lemon (OR [0.68], CI [0.51-0.90]), and citrus fruits (OR [0.66], CI [0.50-0.89]) before infection were associated with a substantial reduction in COVID-19 severity ( $P < 0.01$ ). Also, the consumption of carnation (OR [0.55], CI [0.34-0.88]), lemon (OR [0.57], CI [0.42-0.78]), and citrus fruits (OR [0.61], CI [0.44-0.84]) were associated with a significant decrease in the frequency of COVID-19-induced hospitalization ( $P < 0.01$ ). Conclusions: Regular consumption of carnation, lemon, and citrus fruits before infection was associated with better outcomes for COVID-19. Studies on other populations are required to confirm these findings.