



How COVID-19 pandemic affect nutritional status

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The outbreak of COVID-19, a disease caused by SARS-CoV-2, has subsequently forced partial lockdowns in many countries. In the past two years, most preschool, school-aged, and young adults have to do online classes, courses, colleges, jobs and meetings, which may alter their daily life. This include changes in nutritional intakes and physical activities. These changes may result in either increased of obesity or malnutrition. It is well known that obesity and malnutrition may worsen the outcomes of COVID-19 infection. If not infected, they may also worsen quality of life.

Many studies have been done in the past year regarding nutritional behaviors during the COVID-19 lockdowns. A study in Germany to 1964 young adults reported 31.2% of participants had increased the amount of food intakes.¹ In Spain, a study resulted that people consumed 539 kcal more than the recommendation during lockdown.² Similar to these studies, a study in Poland showed that 43% and 52% of the participants reported eating and snacking more, respectively.³

In Indonesia, COVID-19 has primarily affected food access and causes drop of income. The poor and vulnerable groups have difficulties in affording

high nutritional value food thus resulting in, not only decline of food intake, but also lower dietary quality.⁴

Regarding physical activity, a survey study showed 45.6% of 90 participants had low physical activity during the quarantine.⁵ On the contrary, a comparative study to 147 Malaysian and 107 Indonesian students showed increased of physical activities in 79.6% Malaysian and 77.6% Indonesian.⁶

In relation to Indonesian children's nutritional status, COVID-19 pandemic disturbs *Posyandu* (small integrated healthcare center for mother and children) activities. This results in delay in detection of malnutrition in children.⁷⁻⁹ There is also concern regarding the increased of micronutrient deficiencies among children, mainly iron.

Currently, it is still a long journey until the end of COVID-19 pandemic. Global strategy of intervention may be required to combat detrimental nutritional status due to the quarantine.

Conflict of Interest

Authors declared no conflict of interest regarding this article.

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