COVID-19 Outbreak, Lockdown and Impact on Pediatric Nutritional Status: A Preliminary Observation

To the Editor: We would like to share ideas on the impact of COVID-19 outbreak and lockdown on pediatric nutritional status. Lockdown can influence health status. During a school closure, the parental care is very important. The effect might be different in different settings. A report from an area with highly educated and rich population might show a possibility of adjustment to problem by parents. For example, Strisciuglio et al (1) showed that there was a short period of problem in caring children during the first month before improvement. The effect of COVID-19 and lockdown might be totally different in areas with high poverty rate. Socioeconomic background of the family of the children is an important parameter in the analysis on the effect of lockdown. For example, the lockdown might result in underweight among children from poor communities and the parents have no money and ability to care their children. In contrast, a problem of obesity might be detected in children from rich families (2).

Here, the authors would like to share our preliminary observation from an area that COVID-19 has been attached since early 2020 and there are already more than 1 million cumulative confirmed COVID-19 cases at present. The area is a rural area in Indochina (GPS location 14.874786541289744, 102.83783914044895) where pediatric undernutrition is an important local public health problem (3). Local public data (http://healthkpi.moph.go.th/kpi2/kpi/) from routine annual pediatric health survey (ages 6–14 years, overall population 823,853) are retrospectively analyzed. Regarding primary data collection, the standard pediatric anthropometric examination is done by the village primary health center, which is run by a village primary health care officer, who is a governmental worker of Ministry of Public Health and has a degree of Bachelor of Public Health or higher degree. In each year, the pediatric anthropometric survey is done and recorded in each village during July. During COVID-19 outbreak, full function of the village primary care center still remained. The regular monitoring of pediatric nutritional status in the village was regularly done, similar to the previous period without COVID-19 outbreak.

Prevalence of pediatric nutritional problem is shown in Table 1. During the 4-year period, 2018, 2019, 2020, and 2021, overall coverage rate of children examination are equal to 65.22%, 61.43% and 64.4% of the overall pediatric population, respectively. From the 4-year data, the effect of COVID-19 outbreak is observed. When the disease starts in early 2020, the prevalence of abnormal pediatric nutritional status did not increase in the year 2020; however, the pediatric underweight and overweight problems significantly increase in the year 2021. When COVID-19 has existed for a long time, a significant impact occurs. During COVID-19 outbreak, school has been closed for a long time and outdoor sport or exercise activities are prohibited. Some children might be in poor families and cannot receive sufficient food. On the other hand, some children from rich families might experience different situation. The complexity of pediatric nutritional problem in rural area of developing countries can be repeatedly demonstrated (3). COVID-19 outbreak and lockdown can have an impact on pediatric nutritional status; however, a local socioeconomic background can play important role in modifying the direction of effect. 

REFERENCES
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Unusual Long Absence of Isolated Biliary Atresia in COVID Lockdown: Coincidence or Association?

To the Editor: Isolated biliary atresia (IBA) is a rare cholangiopathy of unknown origin. IBA is hypothesized to be caused by exposure to an unidentified external agent, with subsequent immune-mediated destruction of bile ducts (1). During the COVID-19-related lockdown, early 2020, a decrease in pediatric infections (eg, otitis media and gastroenteritis), was observed in the Netherlands (2). Simultaneously in this period, we observed an unusual gap length between subsequent new IBA cases; the gap length between birth-dates of two subsequent IBA patients was 174 days. We determined the dates of two subsequent IBA patients was 174 days. We determined the probability of every gap length occurring, assuming a Poisson distribution of IBA cases and a negative exponential distribution of gap length (3). The probability that a gap length of 174 days was 2.6%, thus below the standard accepted level of significance.

Between 2000 and 2020, a gap length of at least 174 days between subsequent IBA patients had occurred another four times (Fig. 1); however, the essence and uniqueness of our current observation is that a long gap length occurred simultaneously with a lockdown that contributed to a decreased number of paediatric infections. One can therefore speculate that the increased gap length of subsequent IBA significantly

Table 1. Data on pediatric nutritional status

| Pediatric nutritional status | 2018   | 2019   | 2020   | 2021   |
|------------------------------|--------|--------|--------|--------|
| Normal                       | 66.5   | 61.5   | 65.7   | 58.07  |
| Underweight                  | 33.5   | 38.5   | 34.3   | 41.93  |
| Overweight                   | 11.8   | 13.6   | 12.5   | 14.5   |
| Total number of children     | 521,252| 537,317| 506,092| 530,561|
| measured per year            |        |        |        |        |

[*]Underweight: weight for age <-2 standard deviations (SD) of the WHO Child Growth Standards median; overweight: weight for height >+2 SD of the WHO Child Growth Standards median (according to WHO Interpretation Guide, https://www.who.int/nutrition/nils_interpretation_guide.pdf).