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Viewpoint

Technological Innovation is Needed to Accelerate Stunting Reduction in Indonesia

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The WHO defines stunting as a low height for age condition in which toddlers have short height due to suboptimal health quality due to inappropriate quantity and quality of food intake (1). In 2019, Indonesia's number of children with stunting is still relatively high at 27.67% (2). This situation is still far from the expectation that the national stunting rate will be below 14% by 2024. Geographically, in Indonesia - stunting in children under five is spread across the province, although the number among the area varies.

The Indonesian government has implemented programs to reduce stunting by targeting several groups, including: pregnant and maternity mothers, toddlers, school-age children, adolescents, and young adults (3). The actions include interventions and efforts to increase knowledge among the related subject – mostly among women. These efforts must still have been carried out until recently. However, along with the development of the digital era, stunting prevention needs to involve technology as an innovation to predict the possibility of a toddler becoming stunted in the future when their intake is insufficient.

In Indonesia – through the Integrated Service Post (Posyandu) – toddlers receive regular monthly check-ups, including their height and weight since birth. This program collects cohort data at the individual level, which is essential to see trends and for developing predictions. Considering the magnitude of the benefits of this data, technological innovation is needed to utilize this data further and encourage the sustainability of data input. This innovation should provide alerts for early stunting detection so that program targets can be more accurate. The digitized cohort data can be used as capital to estimate the possibility of a child becoming stunted in their development. Thus, prevention efforts can be carried out early if it is known that a toddler is indicated to be suffering from Stunting. Of course, this innovation cannot be run alone but supports the existing prevention program.

The increasing trend of artificial intelligence technology (4) and the Internet of Things (IoT) (5) usage is an opportunity to support stunting prevention. Conventional measuring tools commonly used to record the condition of toddlers are transformed into digital instruments as data feeders to be stored in cloud storage by utilizing IoT. Machine Learning learns this data

to make predictions as early detection of Stunting (6–9). In addition, data in cloud storage can also be processed to become a decision support system in making public policies.

Keywords: Stunting; Internet of things; Innovation; Cohort data, Artificial intelligence

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