



ABSTRACT

## Safety drinking water and risk of stunting in children: Is it related ?

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**Background and objectives:** Slum areas are identical with nutritional problems in children including stunted children. Incidence of stunted can be caused by various factors, one of which is dysbiosis. This study aims to analyze the microbiota composition of stunted and non-stunted children in Jakarta slum areas and related contributing factors.

**Methods:** This study is a comparative cross-sectional study to analyze association between gut microbiota and stunted incidence among children in Jakarta slum area and related contributing factors, included WASH (Water, Sanitation and Hygiene) such as sources of drinking water. The study has been conducted in the Hamlet No 9 and No 11 of the Kebon Bawang Urban Village, North Jakarta. The research was conducted in November 2021 – June 2022. Gut microbiota analysis was carried out at the Human Cancer Research Center-Indonesia Medical Education and Research Institute (HCRC-IMERI) and PT. Genetica Science.

**Results:** There was an association between the composition of the gut microbiota and the incidence of stunting in children in Jakarta slum area. In general, the abundance of pathogenic microbiota in stunted children was higher than in the non-stunted children. These are influenced by many factors including the source of drinking water. In this study it was found that in the stunted group more of the sources of drinking water were refilled water. Differences in the composition of microbiota are influenced by sources of drinking water.

**Keywords:** drinking water, safety, stunted children

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