Association between Added Sugars and Decreasing Intake of Iron and Zinc Among Children Aged 24-59 Months in Central Java

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ABSTRACT

Background : The trend of high sugar food consumption among children was found in Indonesia. Meanwhile, excessive intake of added sugars showed a negative potential effect on compromising micronutrients intake such as iron and zinc, called micronutrient dilution.
Objective : This study aimed to examine the association between added sugars and intake of iron and zinc.
Methods : This study was a secondary data analysis of the 2014 Total Diet Study in Central Java Province. The subjects were 394 children aged 24-59 months. Dietary intake and sociodemographic data were assessed using the 24-hour food recall and household questionnaire. Added sugars variable showed as the percentage of total energy (%E) of added sugars and categorized into six cut-offs (C) : C1 (<5%E), C2 (5%E - <10%E), C3 (10%E - <15%E), C4 (15%E - <20%E), C5 (20%E - 25%E), and C6 (>25%E). Kruskall wallis, dun bonferroni post hoc, and logistic regression tests were performed to analyze the data.
Results : 48% subjects have added sugar intake exceeding the WHO recommendation, which tend to be children aged >3 years (85,5%) and children with working parents (91,7%). As the added sugar intake increased, the intake of iron and zinc decreased significantly ($p<0,05$). This study found significant decreasing intake of iron occurred at added sugar intake ≥20%E (C5 and above), while decreasing intake of zinc at added sugar intake ≥15%E (C4 and above) ($p<0,05$).
Conclusion : Intake of added sugars has an inverse association with iron and zinc intake among children aged 24-59 months, which showed the occurance of micronutrient dilution.
Keywords : children, micronutrient, micronutrient dilution, sugar intake

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