TECHNICAL BRIEF

Nutritional Composition and Labelling Practices of Growing-up Milks (GUMs) in Indonesia

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Many Indonesian infants and young children are not being fed optimally

Breastfeeding is one of the most effective ways to ensure child health and survival (Victora et al., 2016). Despite strong recommendations from the World Health Organization (WHO) and Indonesian Ministry of Health, only 52% of children under six months of age in Indonesia are exclusively breastfed (BKKBN, BPS, Kemenkes, & USAID, 2018). Similarly, only half (55%) of children continue breastfeeding at two years of age (BKKBN, BPS, Kemenkes, & USAID, 2018; Kementerian Kesehatan Republik Indonesia, 2018). Inadequate breastfeeding contributes to an estimated 15,000 child deaths each year in Indonesia (Alive & Thrive, 2020). In 2014, stunting among Indonesian children under the age of 5 was 30 percent, the second highest in South East Asia (Development Initiatives, 2017). This means that many Indonesian infants and young children are not being fed optimally or in accordance with global guidance at a critical time in life.

Use of breastmilk substitutes among children 1-3 years old is growing

A possible driver of malnutrition among this age group is displacement of continued breastfeeding as new varieties of breast-milk substitutes (BMS) become increasingly available and promoted. Between 2011 and 2016, there was a 40 percent volume growth of BMS sales in Indonesia – with the greatest increase in products intended for children 1-3 years old, referred to in this research as growing-up milks (GUM) (Euromonitor International, 2016). The World Health Organization and other experts have concluded that these BMS products specifically marketed for young children (rather than infants) are unnecessary and may be nutritionally unsuitable (WHO, 2013).

The World Health Assembly's Resolution 69.9 calls on member states to implement the WHO Guidance on Ending the Inappropriate Promotion of Foods for Infants and Young Children (WHA,2016). This Guidance clarifies that BMS products for children up to three years of age fall under the scope of the International Code of Marketing of Breast-milk Substitutes (WHA, 2016). While GUMs are globally recognized as BMS, Indonesia allows these products to be promoted. Characterising their composition and nutrient profiling would therefore be useful to further understand their suitability for inclusion in the diets of young children 12-36 months of age.

This brief summarizes research undertaken by the Assessment and Research on Child Feeding (ARCH) Project of Helen Keller International. This research assessed the declared mono- and disaccharide, excluding lactose, content, nutritional composition information and nutrient content claims provided on product labels of GUMs available in Indonesia. Guidance from Codex Alimentarius and the United Kingdom Food Standards Agency (UK FSA) was consulted to determine if the content and nutrient profiles of these products were appropriate for inclusion in the diets of infants and young children.

Study objectives

This study had four objectives:

1. Assess using the label information the mono- and disaccharide, excluding lactose, composition and content of GUMs against 2018 global guidance, specifically the Codex Alimentarius draft 2018 Revised Standard for Follow-up Formula (CXS 156-1987).[1]
2. Undertake nutrient profiling using the United Kingdom Food Standards Agency (UK FSA) Nutrient Profiling Model to assess the healthiness of GUMs.
3. Assess, using the label information, the frequency and types of nutrient content claims made on these products.
4. Compare the cost of GUMs compared to whole cow's milk.

This study used a database of GUMs purchased from Innova Market Insights, a market research company (www.innovamarketinsights.com). Data was captured from product labels of GUMs launched in different cities across Indonesia between January 2017 and May 2019. GUMs that were cow milk-based were included, while non-cow milk-based products were excluded; 100 GUMs products were assessed in this study.

Findings and implications

Over a third of the GUMs that could be assessed had a mono- and disaccharide, excluding lactose, content higher than that recommended by Codex.

The Codex Alimentarius draft 2018 Revised Standard for Follow-up Formula (CXS 156-1987) states that the mono- and disaccharide, excluding lactose, content of products for children 12-36 months of age should be less than 2.5g/100kcal, and that countries can restrict this to even less than 1.25g/100kcal. Twelve GUM products did not provide the information necessary to determine the mono- and disaccharide, excluding lactose, content. Figure 1 shows the overall results. Of the 88 GUM products that did provide the necessary information on their labels, 38.6 percent (n=34/88) had a mono- and disaccharide, excluding lactose, content greater than 2.5g/100kcal and therefore did not comply with the draft 2018 Codex recommended mono- and disaccharide, excluding lactose, content, while 61.4 percent (n=54/88) were found to be compliant. Compliance of products with the draft 2018 Codex mono- and disaccharide, excluding lactose, content recommendations are presented in Table 1.

[1] The Codex Alimentarius is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission. The Commission was established by FAO and WHO to protect consumer health and promote fair practices in food trade. The Codex Alimentarius Standard for Follow-Up Formula (CXS 156-1987) is currently under revision and compositional requirements for products for children 12-36 months of age have been updated.

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Figure 1: Compliance of GUMs with draft 2018 Codex mono- and disaccharide, excluding lactose, requirement of ≤2.5g per 100 kcal (n=100)

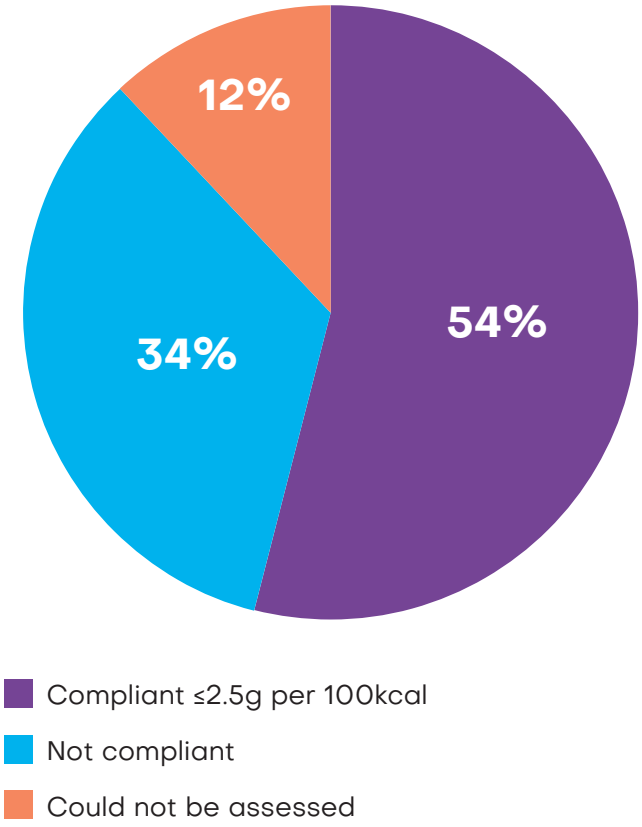

Table 1: Compliance of GUMs with mono- and disaccharide, excluding lactose, requirement of the draft 2018 Codex Revised Standard for Follow-up Formula (n=88)

Assessed GUMs compliance with draft 2018 Codex mono- and disaccharide, excluding lactose, content of ≤ 2.5g/100kcal	Number of products (%)*
Total that complied:	54 (61.4%)
Compliant: > 1.25g to ≤ 2.5g/100kcal	28 (31%)
Prudent: ≤ 1.25g/100 kcal	25 (28%)
Total that did not comply:	34 (38.6%)

* Among products whose mono-and disaccharide, excluding lactose, content could be assessed based on label information.

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Almost all GUMs contained added sugars/sweeteners

The Codex 2018 draft Standard also states that GUM products should not contain added fructose or sucrose. Despite this, 77 percent of the GUMs assessed contained sucrose. In total, 98 percent (n=98/100) contained one or more sugars/sweeteners, with some containing as many as 10 different added sugars/sweeteners (Table 2).

Table 2: Types of sugars/sweeteners listed in the ingredients of GUMs as a percentage of the total sample in descending order (n=100)

Added sugar	Number of products (%)*
GUMs with added sugars/sweeteners:	98 (98%)
Sucrose	77 (77%)
Lactose	70 (70%)
Honey derivatives:	34 (34%)
Honey Powder	20 (20%)
Honey	11 (11%)
Natural Honeycomb	3 (3%)
Fructooligosaccharide	31 (31%)
Galactooligosaccharide	30 (30%)
Solid Glucose Syrup	23 (23%)
Inositol	11 (11%)
Oligofructose	7 (7%)
Polyfructose	5 (5%)
Fructose	4 (4%)
Solid Corn Syrup	3 (3%)
Isomaltulose	2 (2%)
GUMs with no added sugars/sweeteners	2 (2%)

* As the number of products included in the analysis was 100, the numbers and percentages are the same.

Based on the findings that assessed the mono- and disaccharides, excluding lactose, composition and content of the GUMs against the draft 2018 CODEX STAN (CXS 156-1987), very few of the products meet the requirements both for the level of mono- and disaccharides, excluding lactose, and the non-addition of fructose and sucrose. The current sugar/sweetener composition and content make growing-up milks inappropriate for inclusion in the diets of young children.

Most GUMs that could be assessed had 'less healthy' nutrient profiles

This study used the UK FSA Nutrient Profiling Model to assess products and classify them as either 'healthy' or 'less healthy' (FSA, 2009). This model was selected in lieu of any existing model for young children specifically because it has been validated and can be used for any given food or drink.

Almost three quarters (71/100 products) of GUMs failed to provide sufficient information to be assessed against the UK FSA Nutrient Profiling Model. Of those that could be assessed, one third (34%; n=10/29) were not considered to be healthy, based on their energy density, saturated fat, total sugar, and sodium content.

The study also used the UK FSA Front of Pack (FoP) Algorithm to assess sugar content. This algorithm is designed to assess different components of a product (including fat, sugars, and salt) and scores each component into low (green), medium (amber), and high (red) levels (Department of Health, FSA, administrations in Scotland, Northern Ireland and Wales, & British Retail Consortium, 2016).

[13] Sugars means all mono-saccharides and di-saccharides present in food (Codex, 2017).
[14] The words sugar and sucrose both refer to table sugar and therefore will both be referred to as sucrose in this study. In objectives 1.2 and 1.3, consider all products that used the word sugar to be sucrose.


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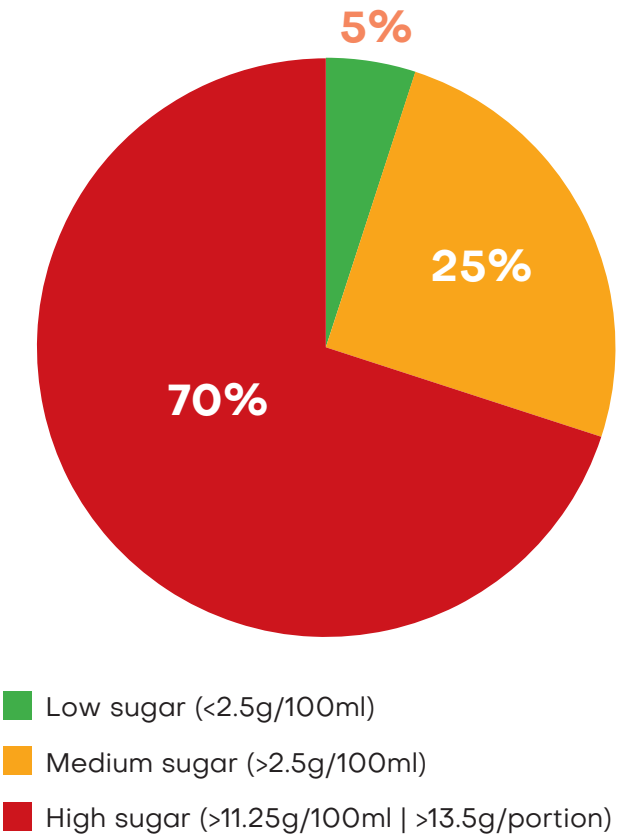
Of the 93 products with sugar content information on the labels, almost three quarters (70 percent) had high sugar levels that would warrant a red warning label, and only five percent had low enough total sugar levels to warrant a green label (Figure 2).

Figure 2: UK FSA FoP Algorithm total sugar results of GUMs that could be assessed (n=93)



Nutrient content claims are made on almost all GUMs regardless of how unhealthy they are when nutrient profiled

For this study, nutrient content claims on GUMs were also assessed. This type of nutrition claim includes messages that a product is "high in" or a "source of" a certain desirable nutrient.

Nearly all (97%) GUMs made a nutrient content claim. "Source of" claims were made most frequently for inulin (18%) and vitamin A (17%), while "High in/rich in" claims were most commonly made for zinc (18%).

Of the GUMs that made nutrient content claims, only 29 provided sufficient label information to determine their overall healthiness according to the UK FSA Nutrient Profiling Model. In one third (34 percent; n=10/29) of cases with sufficient information to review, the GUMs making nutrient content claims were, in fact, not considered to be healthy overall when assessed against the UK FSA Nutrient Profiling Model (Table 3).

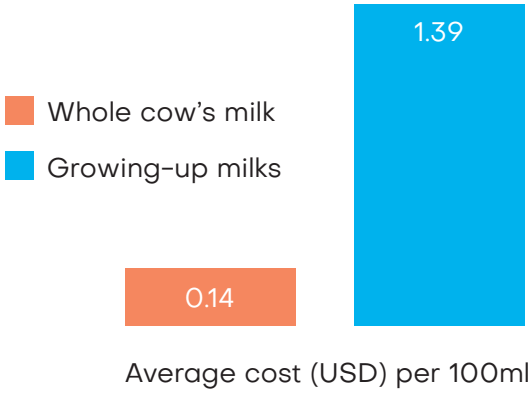
Table 3: GUMs making nutrient content claims, stratified by their nutrient profile using the UK FSA NPM (n=29).

GUMs making nutrient content claims stratified by nutrient profile	Number of products (%)*
Nutrient Profile: Healthy	19 (66%)
Nutrient Profile: Less healthy	10 (34%)

GUMs are approximately nine times as expensive as whole cow's milk

Figure 3 shows that the average cost per 100ml of GUMs (n=100) was USD 1.39, while the cost of whole cow's milk per 100ml was USD 0.14. Whole cow's milk is recognized as an appropriate nutrient-dense beverage for children over one year of age. The high cost of GUMs combined with their undesirable nutrition profiles raises serious concerns about whether they are appropriate for feeding young children in Indonesia.

Figure 3: Average cost per 100ml of GUMs vs whole cow's milk



Conclusion

This study showed that the composition of GUMs in Indonesia fails to comply with the Draft Codex Standard for Follow-up Formula or to meet many of the criteria of the UK FSA Nutrient Profiling Model. Assessed against global guidelines, the current sugar composition and content makes GUMs inappropriate for inclusion in the diets of young children. Insufficient label information, use of nutrient content claims, and the high cost of GUMs in Indonesia also raise concerns.

It is clear many GUMs are sold as being suitable for children aged 12-36 months and make nutrient content claims when their overall nutrient composition is not considered to be healthy. This may mislead consumers to believe that the product offers a health benefit.

Indonesian policy makers should assess the appropriateness of GUMs in the diet of children aged 12-36 months, and given these findings, consider strengthening national infant and young child feeding regulations, policies and even programmes. Strong political commitment is needed to ensure optimal infant and young child feeding in Indonesia and reverse the current high levels of stunting. The existing outdated Indonesian infant and young child nutrition regulations should be aligned with new global guidance to protect, promote and support breastfeeding and healthy complementary feeding.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