MCSP Nutrition Brief

Junk Food Consumption is a Nutrition Problem among Infants and Young Children: Evidence and Program Considerations for Low and Middle Income Countries

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BACKGROUND

Consumption of junk foods[1] has been observed with increasing frequency in low- and middle-income countries and has been implicated in the rising rates of overweight, obesity, and diet-related non-communicable diseases, including heart disease and diabetes. Junk food consumption can contribute to the 'double burden of malnutrition', which is defined as the 'dual burden of undernutrition[2] and overnutrition[2] occurring simultaneously within a population' (Shrimpton & Rokx, 2012). Countries experiencing a 'nutrition transition' are characterized by increasing consumption of junk foods, and a growing number of meals purchased and/or consumed away from home. Families in both urban and rural areas are affected by nearby market developments, with the prevalence of child overweight increasing with rising incomes.

Junk foods are defined as foods that are unhealthy, which contain added sugar, are high in fat, and/or high in salt. These foods are low in nutrient content.

Processed foods are any food which is not in its raw and natural state, and can include healthy foods, such as fortified complementary foods.[1] Foods fried in oil or other fats, i.e. fried potatoes, are considered " minimally processed" and "moderately processed "foods can contain additional flavor additives (i.e. sweeteners, salt, flavors, or fats)-such as, canned fruits in syrup. "Highly processed" foods such as margarine and "highly processed stand-alone" foods such as cookies, biscuits, chips/crisps, candy, sugar sweetened beverages (juice, flavored water), soft drinks, and refined-grain breads are also in this category of foods.

A 2016 analyses of DHS data indicate that child undernutrition is declining. Since 2000, the prevalence of stunting (height/length-for-age (HAZ) <-2SD)[3] globally has declined by 0.41 percent per year, and the prevalence of wasting (weight-for-height/length (WHZ) <-2 SD) has plateaued (Tzioumis, 2016). However, overweight is rising among children under five years of age, with average annual changes of 0.08 percent per year during the same period of time. These data also indicate that the double burden of malnutrition –

[1] Healthy fats are not included in this definition. See Poti et al, 2015, in References for further detail.

[2] Undernutrition is the result of insufficient intake, poor absorption, and/or poor biological use of the nutrients, which can result in impaired growth and underweight. Overnutrition is the result of excess or imbalanced nutrient intakes, which can result in overweight and/or obesity. See Shrimpton et al, 2012.

[3] All growth measurements are in reference to the 2006 WHO Growth Standard.

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defined in this study as the presence of both stunting and overweight (weight for height/length (WHZ) >2 SD) in the same child – ranges from 3.0 to 37.8 percent in USAID Ending Preventable Child and Maternal Death (EPCMD) and Feed the Future (FtF) countries[4] (Tzioumis, 2016). Results of the study demonstrate that both forms of malnutrition, defined as the percentage of stunted children who are also overweight, are notable in several sub-Saharan African countries, such as Rwanda (8.7 percent), Mozambique (11.7 percent), Zambia (12.6 percent), and Nigeria (14.9 percent) (Tzioumis, 2016). Because of this phenomenon, the 2015 Global Nutrition Report calls for "double" actions to address all forms of malnutrition, including stunting, wasting, and underweight, as well as overweight and obesity (IFPRI, 2015).

SCOPE OF THE PROBLEM

Is consumption of junk foods a feeding problem for children under two years of age?

Yes, DHS data and several studies reveal that complementary feeding of junk foods is common in children under two years of age, especially in urban areas.

Analyses of available Demographic Health Survey (DHS) data[5] reveal that up to 32 percent of infants and children, 6-23 months of age, are fed sugary foods, largely in sub-Saharan African countries (Figure 1). This feeding problem is emerging in countries with moderate to high levels of child stunting, and rising child overweight. In several countries—including Malawi, Nigeria, and Zambia— the prevalence of child overweight is greater than 7 percent, which is the global target set by the World Health Organization (WHO) (WHO, 2014). This target is based on the global prevalence of child overweight in 2012 (7 percent) with the goal of halting the rise in child overweight and achieving "no increase in childhood overweight" by 2025. Consumption of junk foods likely play a role in contributing to varying forms of malnutrition, i.e. overweight and stunting, though the extent of which has not been sufficiently explored.

Huffman et al. 2014 showed that sugary food intake among toddlers was prevalent in 13 sub-Saharan African countries (11–40 percent). Higher intake of junk foods has been found among young children (12–23 months of age) versus infants (6-8 months of age) and among children in households of higher versus lower wealth quintiles, and in urban in comparison to rural areas (Huffman, 2014). Other studies reported that sweets and sugary food items were fed to 15 and 7 percent of children 2–5 years of age in Burundi and DRC, respectively, while fat and oil containing foods were consumed by about 60 percent of children in both settings (Ekesa, 2011). Condensed and flavored milks, soft drinks, and biscuits were reported to be commonly fed foods given to children 5 years of age in urban and wealthier households in southwest Nigeria (Olojugba and Lennon, 1990).

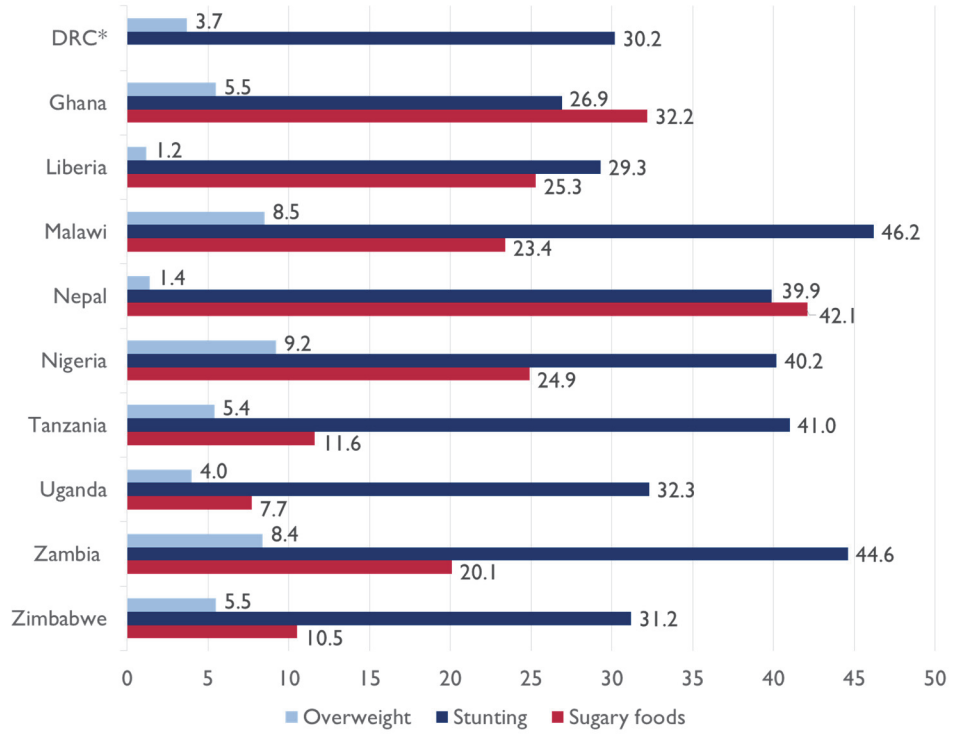
In a few countries, sugary food consumption among children has risen over time: Uganda DHS data reveal an increase between the last two surveys from 8.4 percent in 2006 to 18.0 percent in 2011, a 114 percent increase ($p < 0.001$). An increase was also noted in Egypt DHS data from 24.5 percent in 2005 to 52.7 percent in 2008 ($p<0.001$) (Kavle, 2015). High fat foods, as defined by DHS survey, including oils, fats and butter or products made from them, are consumed by 15.4–87.2 percent of children less than five years of age, in the countries listed in Figure 1. In the first two years of life, children have higher energy needs to support rapid growth and development, as breastfed children require 200 kcal of energy per day at 6-8 months of age, which doubles to 550 kcal /day by 12–23 months of age. Unhealthy high fat foods should not be fed to children as energy sources, and likely play a role in inadequate infant and young child feeding

[4] EPCMD Countries: Afghanistan, Bangladesh, Democratic Republic of Congo, Ethiopia, Ghana, Haiti, India, Indonesia, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Nepal, Nigeria, Pakistan, Rwanda, Senegal, South Sudan, Tanzania, Uganda, Yemen and Zambia. FtF Focus Countries: Bangladesh, Cambodia, Ethiopia, Ghana, Guatemala, Haiti, Honduras, Kenya, Liberia, Malawi, Mali, Mozambique, Nepal, Rwanda, Senegal, Tajikistan, Tanzania, Uganda, Zambia.

[5] DHS data on junk food consumption was only available for certain countries and years of the survey, therefore a limited number of countries is shown below, which were analyzed by MCSP.

practices. Further examination and disaggregation of data, as to types of sugary foods and high fat foods consumed, including healthy (i.e. unsaturated oils, vegetable-based oils) vs. unhealthy fats (lard, margarine, butter), is needed in future surveys.

Figure 1. Prevalence of junk food consumption, stunting and overweight among infants and young children—DHS 2006-2010*¥



Demographic Health Surveys (DHS) define sugary foods as chocolates, sweets, candies and pastries

*latest growth data < 5 years of age, DHS (Tzioumis et al 2016, growth data only) analyses of available DHS child food consumption

¥ DRC and Liberia data analyzed using DHS child dataset, no available sugary food data for DRC

Several studies reveal that complementary feeding of junk foods is common among the urban poor

In Bangladeshi slums, only half of mothers fed home-made complementary foods to children 6–23 months of age (Saleh, 2014), while in Nigeria, 65 percent of urban mothers fed biscuits and 16 percent gave soft drinks to their 6-18 month old children (Olojugba and Lennon, 1990). In Kenyan slums, 41 percent of infants received sweetened water or sweetened flavored water in the first 6 months of life (Kimani-Murage 2011). Data also indicate that among slum-dwelling families in India, 80 percent of mothers fed ready-made snacks, such as chips, puffed rice, and biscuits to their children, 6–36 months of age (Palwala, 2009). Another study in the urban slums in India showed that giving tea and biscuits to children was "convenient," and often young children are given money to buy junk foods, which habituates them to eating "outside" food (Kaushik, 2011).

IMPACT OF JUNK FOOD ON FEEDING PRACTICES AND MALNUTRITION AND KEY DRIVERS

How can junk food impact infant and young child feeding practices and contribute to all forms of malnutrition, including stunting and overweight?

Incorporating low-nutrient, high-fat, and/or high-sugar foods—commonly known as "junk foods"—into the diet may displace exclusive breastfeeding, if introduced prior to 6 months of age, or nutritious foods, if given

after 6 months of age. This contributes to excess energy intake, nutrient deficiencies, and poor growth and development of infants and young children. Other evidence from studies indicates:

- Junk foods have been consumed with greater frequency than fortified infant cereals, eggs and vitamin-A rich fruits among children 6–23 months of age (Huffman et al, 2014).
- In some settings in Asia, Africa, and the Middle East, early introduction of these junk foods and liquids is common during the first six months of life, often as an answer to mothers' perceptions of breastmilk as insufficient in quality and/or quantity, impeding exclusive breastfeeding. Repeated exposure to sugary and salty foods can familiarize infants and young children to "sweetness" and salt early in life, which can develop into a preference for these foods later in life. (Ventura and Mennella, 2011, Adair, 2012, Stein et al., 2012).
- Ready-made junk foods fed to young children are frequently softened and consumed with sweetened liquids, such as juice or teas, and are often prepared with unhygienic food practices (Kavle et al, 2015).
- Consumption of sugar-sweetened beverages, including juice and tea, increases daily energy intake, provides temporary and incomplete satiation, and can contribute to weight gain and excess abdominal fat among infants and young children (Stanhope et al, 2009).

What are the factors that have played a role in this feeding problem of junk foods for infants and young children?

- Globally, **urbanization and economic growth** have been key components in shaping the food system, availability of and access to junk foods, provision and opening of channels and outlets for purchasing junk foods (i.e. kiosks, small stores), as well as venues for marketing and advertising of foods to children (Akpan, 2013, WHO, 2004 & 2006).
- **Drivers of food choices and cultural considerations:** Convenience, ease in preparation, perceptions of the status and healthfulness of these foods, limitations on mothers' time for preparing nutritious foods, as well as women's return to work following childbirth can influence junk food consumption. These foods are often within reach of families' economic means. One study in Kerala, India observed that mothers chose to spend household resources on junk foods, which varied from as little as 1 to 25 rupees (~$0.02–0.38) for snacks to 100 to 300 rupees (~US $1.50–4.50 dollars) per month for commercialized complementary foods (Daivadanam, 2015).
- **Local food environments:** Proximity of homes and schools to food outlets, kiosks, and small stores increases access and availability of these foods (Akpan, 2013, WHO, 2004 & 2006).
- **Changes in food systems:** Changes in the global food systems and trade brought about a 60 percent increase in oil crop production from 1990 to 2003, as production is reflective of the increased demand for and consumption of oil. Exports of junk food, totaling US $150 billion (27 percent of world food exports), are thought to contribute to the increase in caloric and dietary fat intakes in India, Brazil, and China (Hawkes, 2006).
- **Marketing targeted to young children** plays a pivotal role in stimulating consumption of junk foods (Hawkes, 2007, WHO 2006). In Thailand, a WHO report revealed that 67 snack products were advertised during weekend morning children shows. Advertising of junk foods promotes a "modern diet as high status," "tasty," and "desirable," which can encourage a loss of cultural traditions (Hawkes, 2007). Traditional diets are seen as outdated and low-status, and nutritious local foods are replaced with junk foods (Feely 2016, Pries, 2016a, Pries, 2016b).

GLOBAL POLICIES AND COUNTRY ACTIONS

How have global actions, strategies, guidelines, and policies addressed junk food consumption?

In 2015, the WHO set forth guidelines on dietary sugar intake, recommending reduced intake of "free sugars to less than 10 percent of total energy intake" and has published guidance on ending inappropriate promotion of foods for infants and young children (WHO, 2015a, 2015b, 2016). In countries where overweight and obesity is rising, marketing foods to children may increase preference, purchase, and consumption of energy-dense, low-nutrient foods and beverages, as well as foster positive beliefs about these food items. The 2006 WHO Forum and Meeting on Marketing of Food and Non-Alcoholic Beverages to Children—built upon the WHO Strategy on Diet, Physical Activity and Health—concluded that clear targets are needed at global and national levels, as well as effective mechanisms for regulation of food marketing towards children, taking into account cultural and national contexts.

Have countries taken action to both recognize and address junk food consumption and overweight and obesity in children?

Despite this global call to action, few countries have addressed junk food consumption. An analysis of 38 low and middle income (LMIC) country policies was conducted (see Table 1 for EPCMD and FtF countries). While the majority of countries included overweight and obesity in key policy and strategic documents, programs are not yet in place. Only three out of thirty-eight country policies analyzed have addressed marketing of junk foods to children (Kenya, Lao People's Democratic Republic [PDR], and Zimbabwe).

Table 1. LMIC Countries with policies, strategies, guidelines that address junk foods, overweight/obesity and/or NCDs (denoted by "x")

Countries	Childhood overweight and obesity	NCDs	Junk food consumption (general population)	Marketing junk foods (¥denotes targeting children)
Bangladesh*±	X			X
Ghana*±	X	X	X	X
Guinea			X	
Haiti*±	X	X		
India*	X	X		X
Indonesia*	X		X	
Kenya*±	X	X		X¥
Lao PDR				X¥
Liberia*±	X			
Namibia	X			
Rwanda*±	X	X		
Yemen*	X			
Zambia*±	X	X		X
Zimbabwe				X¥

*EPCMD country
±FtF country

In Latin America and high income countries, countries have tackled this issue via mandatory nutrient lists on packaged food (i.e., Malaysia); recent (2014) "traffic light labels" indicating when levels of fat, sugar, and salt are high (red), medium (orange), and/or low (green) (i.e. Ecuador) and mandatory calorie labels (i.e.,

Australia, U.S.) (IFPRI, 2015). LMIC countries have taken initial steps through key country actions, yet more progress is needed. Some examples of key LMIC country actions are shown below:

- **Kenya**—Kenya is at the forefront of initial actions to address rising childhood overweight and obesity and marketing of unhealthy foods to infants and young children. Key actions in the 2013 National Maternal, Infant and Young Child Nutrition Policy include: promoting the consumption of locally available and home-based foods; the creation of legislative measures to eliminate trans-fats, saturated fats, refined sugars, and salt in junk foods targeted at infants; and regulations for marketing of unhealthy foods. Monitoring of growth in children from birth through primary schooling is recommended to track trends in overweight and obesity.
- **Ghana**—The National Nutrition Policy 2014-2017 states that behavior change communication and messaging on proper nutrition should be implemented through social marketing and in schools to address rising overweight and obesity.
- **Zambia**—The National Food and Nutrition Strategic Plan calls for marketing and promotion of a variety of local food crops (specifically legumes, vegetables, and fruits) as an action item for addressing the increasing rate of childhood overweight and obesity.
- **Zimbabwe**—The National Nutrition Strategy 2014-2018 discusses marketing of healthy lifestyles and diversified diets through mass media campaigns; creation of a national monitoring system for risk factors of non-communicable diseases, development of nutrition social marketing tools and integration of nutrition education units in schools.

PROGRAMMATIC CONSIDERATIONS

How can junk food consumption be addressed within the context of undernutrition programming and rising overweight/obesity among infants and young children?

Optimal infant and young child feeding practices are critical to prevent all forms of malnutrition during the first two years of life and are an important component of USAID's 2014-2025 Multi-sectoral Nutrition Strategy and reaching Ending Preventable Child and Maternal Death (EPCMD) goals. The 2016 Lancet series on breastfeeding found that longer periods of breastfeeding are associated with a 26 percent reduction in the likelihood of a child becoming overweight or obese (Victora, 2016). Infant and young child feeding programs should address barriers that impede immediate and exclusive breastfeeding during the first 6 months of life, including perceptions of insufficient breastmilk and discourage early introduction of foods and liquids, including junk foods, as a remedy to perceived lack of breastmilk, which displaces and disrupts exclusive breastfeeding. Feeding nutritious complementary foods, and not feeding junk foods as part of the daily meals and/or snacks, is critical information to convey to families with children, 6–23 months of age.

Illustrative key interventions to address junk food consumption among infants and young children:

- **National level:**
  - Include overweight and obesity in key policy and strategic documents.
- **Health facility level:**
  - Healthcare providers and families need to understand healthy versus unhealthy weight gain and can learn to monitor excessive and/or rapid weight gain, within the context of undernutrition programming.

- In addition, families should be advised that junk foods are detrimental to the growth of children and the entire family's health and well-being, and providers should be trained to provide nutrition counseling for families during routine growth monitoring visits.

- **Community level and social behavior change communication:**
  - Provide supportive environments (i.e. mothers/community support groups, campaigns with IYCF messaging) to discuss with mothers and their families about reducing and/or eliminating the introduction of junk foods and sweetened beverages, and explain the health consequences of these foods on child health, growth, and development.
  - Alternatives to sugary and high-fat foods, including available, affordable, and local foods such as fruit or sweet potato or other locally available foods, should be encouraged for consumption for infants and young children.

- **Regulation and early exposure to junk foods:**
  - Remove or limit access to kiosks and sellers of unhealthy snacks near preschools, nurseries, and schools.
  - Regulate the marketing of breastmilk substitutes, per WHO International Code of Marketing of Breastmilk Substitutes, as well as regulate the marketing of inappropriate complementary foods, including junk foods, to infants and young children, as recommended by WHO (WHO, 2006 & 2015b).
  - Appropriate food labeling, such as mandatory front-of-package labels and a 'nutrition seal' obtained with compliance to nutritional standards (i.e., Mexico).
  - Regulate the marketing of food and sweetened beverages to children, particularly early in life, which includes television programs.
  - Ensure standards and guidelines are in place for nutritious food provision at preschools and early childhood development centers.
  - Marketing and tax regulations have been implemented in Mexico, and several high-income countries (i.e., UK, Australia).

- **Data Gaps:**
  - Disaggregation of DHS data on types of sugary (i.e. biscuits, cookies, cakes), high-fat, and/or high salt foods (i.e. fried foods, chips/crisps) and drinks (i.e. soft drinks, sweetened juices) that are consumed by infants and young children is needed. This can provide insight into trends and food patterns every three to five years. Currently, these data are not disaggregated by type of sugary foods and high fat and/or high salt foods consumed.
  - More formative research and qualitative information is needed on the drivers of junk food intake and food choice for mothers and families of infants and young children, including motivations for feeding junk foods.

CONCLUSION

Targeting these approaches and resources to nutrition programs is critical, as the number of children under five who are overweight is rapidly approaching the number who suffer from wasting (IFPRI, 2016). In countries, where the double burden of malnutrition is a growing concern, implementation of these key actions within the context of current undernutrition programming is needed.

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