



EADS

RESEARCH BRIEF



Singapore Longitudinal EARly Development Study

Towards Equality in Children's Development Through Food Security

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Wei-Jun Jean Yeung (socywj@nus.edu.sg), Provost's Chair Professor of Sociology; Founding Director of the Centre for Family and Population Research, National University of Singapore

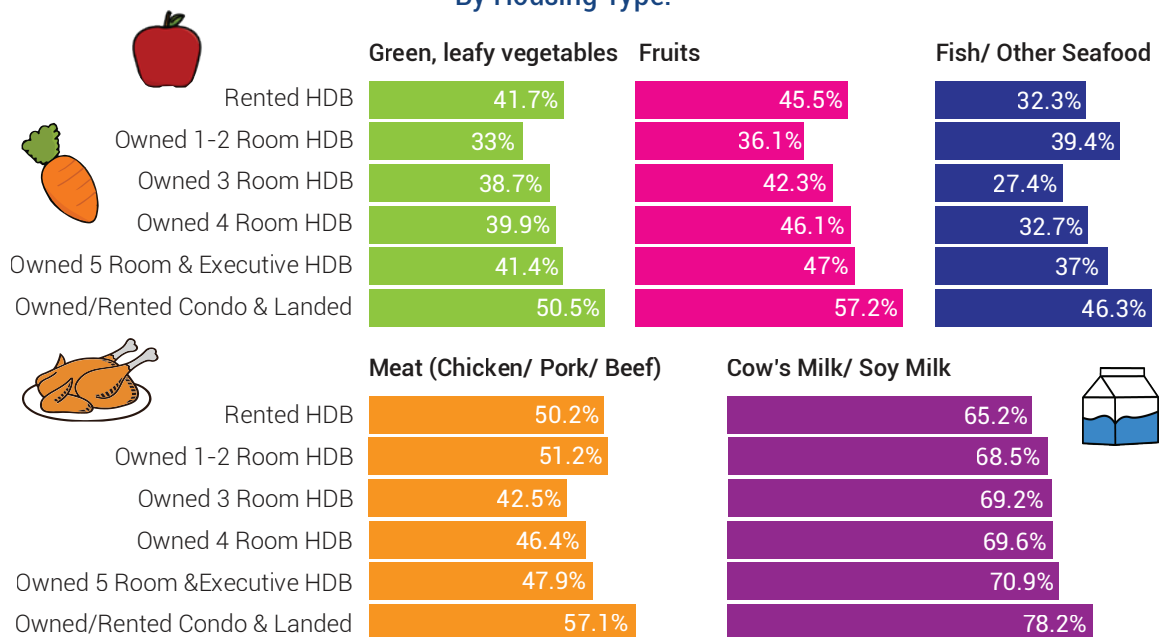
May-Choo Wang (maywang@nus.edu.sg), Professor of Community Health Sciences, School of Public Health, University of California at Los Angeles; Affiliate, Asia Research Institute, National University of Singapore

Having a healthy diet early in life is critical not only for optimal growth and development but also for preventing the many diet- and obesity-related chronic health conditions that occur much later in life – diabetes, hypertension, heart disease, cancer, etc.. Research has shown that children who develop healthy eating habits are less likely to be obese, are more likely to have healthier diets throughout life, and perform better academically.

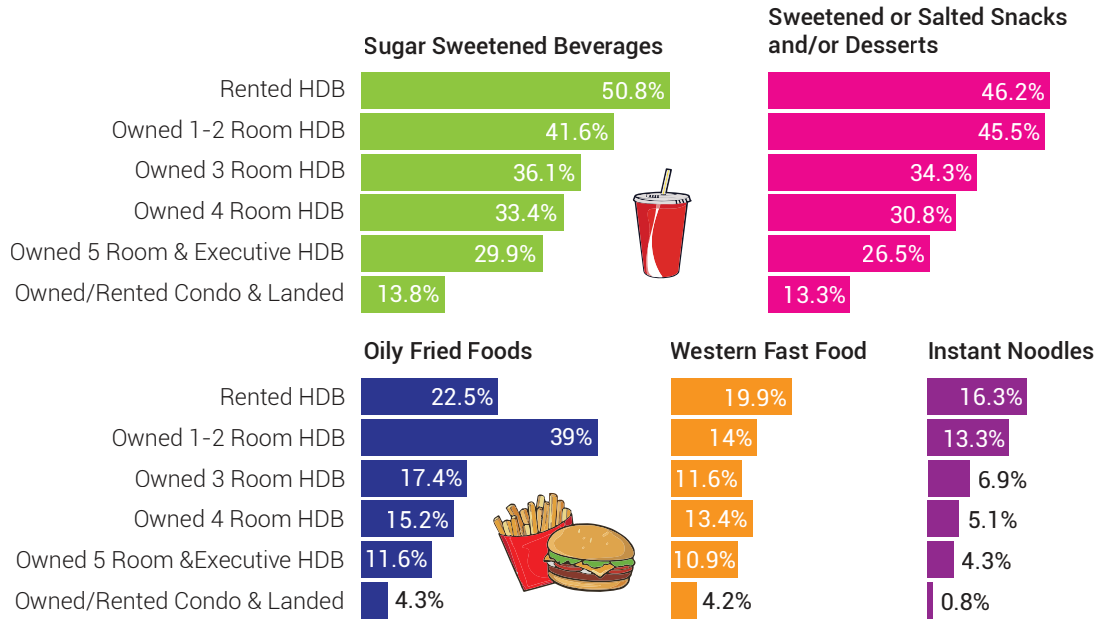
What is a healthy diet? Dietary guidelines recommend a diet made up of carbohydrate foods about half of which should be whole grain; protein foods such as meat, poultry, fish, eggs and beans; fruits and vegetables; and calcium-rich foods such as milk, yogurt, and soybeans/tofu. Processed and fast food items – such as sweet and savory snacks, sausages, tinned food, instant noodles, hamburgers – are generally considered unhealthy because they typically have high amounts of salt, sugar and fat, all of which have been linked to obesity, hypertension, diabetes and other chronic health conditions. The World Health Organization recommends limiting consumption of these foods and also of sugar-sweetened beverages (SSBs). The consumption of SSBs among children is at a high level in many countries and increasing quickly in many others. High SSB consumption may thwart the development of taste preferences for healthy foods, and the consumption of nutritious foods needed for optimal growth and development. In addition, high consumption of SSBs as well as of fast food has been shown to be associated with poorer academic performance; this association remains even after accounting for socioeconomic factors. In the United States which has been regularly monitoring the eating habits of Americans for over 5 decades, the National Health and Nutrition Examination Survey (2007-2008) reports that on any given day, over 10% of infants aged 9-12 months and over 65% of children aged 2 to 11 years consume SSBs; and about 35% of children aged 2-19 years consume fast food. Socioeconomic differences in SSB consumption have been noted since the early 2000s with a higher prevalence of SSB consumption among U.S. children from low-income families, leading to programs and policies, many of which were school-based, to reduce SSB consumption. Trends show that soda consumption among children in low-income families decreased from 58% to 34% from 2003 to 2014 but consumption of low-calorie SSBs (e.g. diet sodas) increased dramatically from 0.5% to 10%. The health effects of non-nutritive sweeteners used in low-calorie SSBs have not been properly evaluated.

What is the situation in Singapore? What are children in Singapore eating and are there socioeconomic differences? The Singapore Longitudinal Early Development Study (SG LEADS), conducted by NUS's Center for Population and Family Research and led by Professor Jean Yeung with support from the Ministry of Education, surveyed about 5,000 children aged 0-6 years between November 2018 and September 2019, to study factors that affect child development. Among the many topics it covered is the foods that children eat. The study found that 30% of the surveyed children aged 2 to 6 consume SSBs at least 3 times a week with significantly higher percentages among children from low socioeconomic status (SES) families: 51% among children who live in rented HDB flats, and 42% among children who live in owned 1-2 room HDB flats. In comparison, 30% of children who live in owned 5-room and executive HDB flats consume SSBs at least 3 times a week, with this percentage dropping further to 14% among children who live in a private condos or landed properties. The SG LEADS study also noted that children from low SES families also consume more processed and fast food such as snacks, western fast food and instant noodles. Specifically, 46% of children who live in a rented HDB flat or an owned 1-2 room HDB flat consume sweetened or salted snacks and/or desserts 3 times or more a week compared to 27% of children who live in owned 5-room or executive HDB flats and 13% who live in condo or landed properties. Among children who live in a rented HDB unit, 23% eat oily fried foods, 20% eat western fast food, and 16% eat instant noodles 3 or more times a week. In contrast, these percentages were much lower for children living in owned 5-room or executive HDB flats (12%, 11% and 4%, respectively) and children living in condos or landed properties (4%, 4% and 1%). Fruit and vegetable consumption also differed by SES but the differences were not as stark. Children who live in a rental unit or an owned 1-2 room HDB flat were the least likely to eat fruits or vegetables every day, with around 40% of them eating fruits and vegetables every day. In comparison, about half of children living in owned 5-room or executive HDB flats, and 57% of those living in private condos or landed properties eat fruits and vegetables every day. Children who live in 1-2 room flats have the poorest diets: about 1 in 5 of them not only do not eat fruits or vegetables every day but also consume SSBs 3 times or more a week, compared to 8% of children living in a 5-room flat and just 2.6% of children who live in condos and landed properties.

% Of Children Aged 2-6 Who Eat The Following Foods **6-7 Times Or More** Per Week, By Housing Type:

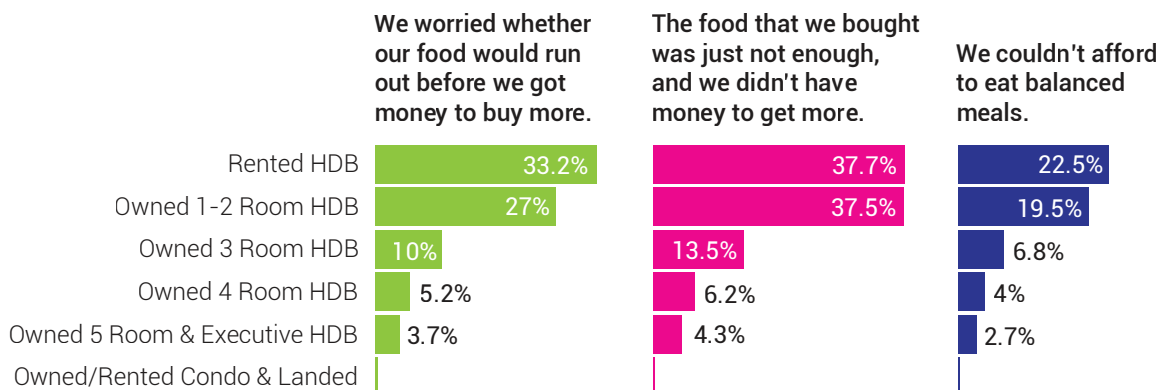


% Of Children Aged 2-6 Who Eat The Following Foods 3 Times Or More Per Week, By Housing Type:

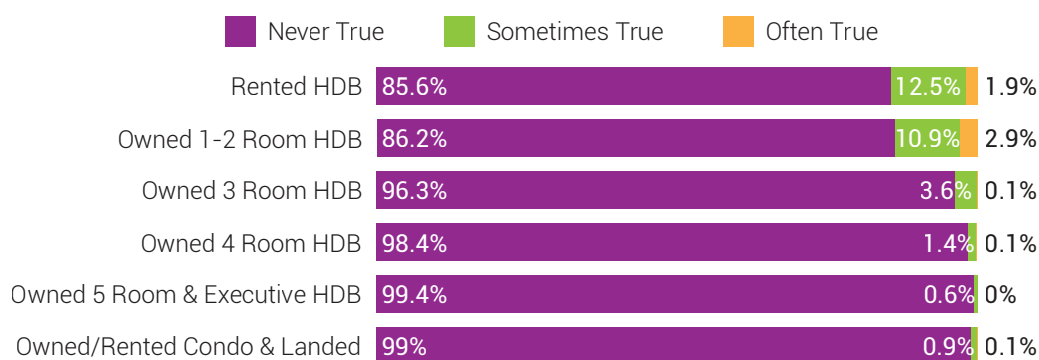


What are the possible reasons for these socioeconomic differences? Research consistently shows that low-income households find it more difficult to adopt healthy eating guidelines. Given that processed food is typically calorically dense and has become more affordable than fresh fruits and vegetables, it is not surprising that SG LEADS found that proportionately more children from families with limited financial resources consume processed food such as snacks 3 or more times a week and do not eat fruits and vegetables every day. For example, a packet of 12 biscuits made by a local manufacturer costs about \$2, and provides 6 servings with each serving providing 130 calories. In comparison, a bag of 4 apples costs about \$4, and provides only 4 servings with each serving providing only 90 calories. Indeed, SG LEADS found evidence that low SES families do not have adequate resources for purchasing food, suggesting that low SES families are at risk for food insecurity. Among households living in rented or owned 1-2 room flats, 37% reported that the food they bought is not enough and they don't have enough money to buy more, 20% reported that they could not afford to eat balanced meals, and 14% reported that their children were not eating enough because they "just couldn't afford enough food". Hence, not having enough family financial resources is likely to be one reason why children from low SES families have unhealthy diets.

% of PCGs Who Reported "Sometimes True" or "Often True" For The Following, By Housing Type:



"My child was not eating enough because I just couldn't afford enough food."



Source: Singapore Longitudinal Early Development Study (SG LEADS)

Another reason may be a lack of knowledge about the harmful long-term health effects of processed and fast food and SSBs and the vulnerability of low SES families to commercial food marketing. Singapore has taken a significant step by banning advertising of packaged drinks with 'very high' sugar content and labelling sugary drinks. Whether this will lead to an increase in healthy food consumption or a replacement of SSBs with low-calorie beverages containing non-nutritive sweeteners among children remains to be seen.

SG LEADS data show that food insecurity is positively related to children's behavior problems. Private and government sector efforts to address food insecurity at individual and population levels – such as Food Bank Singapore and DBS's Toward Zero Food Waste campaign – may have a trickle-down effect on the diets of children in low SES families. Monitoring the impact of these efforts on the nutritional quality of the diets of children from low SES families will allow for timely and appropriate action to be taken. Such action should acknowledge that food fills many needs, not only nutrient needs for optimal growth and health and a biological need to obtain sufficient energy and satisfy hunger, but also psychosocial and emotional needs. A poor young mother said, "I know soda is not good for my little girl but it makes her so happy and it is the one thing I can afford." For programs and policies to effectively address food insecurity in children from low SES families, it is important that a participatory approach be used so that the needs of the whole child are addressed. This means engaging the communities affected in the formative stage of designing an intervention so that the underlying causes of food insecurity can be addressed. Achieving food security is a goal for all nations. As defined by the United Nations' Committee on World Food Security, food security means that "all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life." Achieving food security in Singapore will ensure that all children in Singapore have equal opportunity to achieve optimal growth and development, thus reducing inequalities in early child development and improving population health and well-being in the long run.

Source: Singapore Longitudinal Early Development Study (SG LEADS)