CHAPTER 6

Health and Nutrition

A large majority of school meal programs (87%) cited the goal of improving students' nutrition among their objectives (Table 9). To promote their health-focused agendas, it was common for programs to involve nutritionists in the program and to provide special training in nutrition for cooks or caterers. Among the 59 programs that reported the contributions of nutritionists, an average of 16 nutritionists were involved. It was most common for these nutritionists to be paid by the national government (in 60% of cases) or by an implementing partner (in 41% of cases), and less common to be paid by regional or local levels of governments (in 14-15% of cases).

87%

of school meal programs cited the goal of improving students' nutrition among their objectives

68%

of programs served fortified foods on the school menu

Sixty-eight percent of programs served fortified foods on the school menu; common fortified food items included oil, salt, grains/cereals (including rice), and corn-soy blend or biscuits. The most common micronutrients added to these fortified food items included vitamin A (included in 34% of all programs and 75% of those with some fortification), iron and iodine (each included in 27.5% of all programs), and zinc (included in 16% of all programs), among other nutrients. In Bhutan, for example, schools that participated in the school meal programs were supplied with fortified oil and rice. It was less common, at 22%, for programs to provide students with micronutrient supplements,[24] and it is even less common for programs to serve biofortified foods (at 12% of programs, spread across 11 countries). Vitamin A-rich orange flesh sweet potatoes were served in Gambia, Malawi, Mozambique, and Nigeria.

[24] Supplements are manufactured pills, powders, or liquids intended to provide vitamins and/or minerals that may otherwise not be consumed in sufficient quantities.

Most countries (65%) reported some limitations on food items that can be provided to students in school feeding programs, and most of these countries (at 87%) attributed the rule to health considerations. (The remaining countries cited religious or cultural reasons). Common examples of prohibited food items included packaged / preserved / processed foods; foods with low nutritional value or high levels of sugar and salt; soda and other foods containing sweeteners; and fried food items. In Trinidad and Tobago, for example, sugar-sweetened beverages have been banned from school cafeterias since 2017.

TABLE 9 **PREVALENCE OF NUTRITION-RELATED COMPONENTS OF SCHOOL MEAL PROGRAMS**

		% OF PROGRAMS THAT INCLUDE						
		Objective to meet nutritional goals	Nutritionists involved	Fortified foods	Special training in nutrition for cooks / caterers	Objective to reduce obesity	Micronutrient supplements	Biofortified foods
Region	Sub-Saharan Africa	88	65	67	58	9	27	15
	South Asia, East Asia & Pacific	83	64	73	81	23	25	19
	Middle East & North Africa	100	71	50	50	43	33	0
	Latin America & Caribbean	78	100	89	86	44	0	0
	North America, Europe & Central Asia	89	71	56	78	56	0	0
Income group	Low income	90	60	68	62	6	25	15
	Lower middle income	85	71	69	67	21	34	6
	Upper middle income	76	75	74	73	29	7	28
	High income	94	85	53	86	76	0	0
All		**87**	**69**	**68**	**67**	**23**	**22**	**12**

Less than one-quarter of school meal programs listed the reduction of obesity among their goals (Table 9). However, there is a correlation between the prevailing level of child and adolescent obesity in a country (WHO 2017) and the likelihood that school meal programs were viewed as a tool to mitigate obesity (Figure 18). Among countries with low obesity levels (<5%), 20% of programs cited this objective, while among the five countries with especially high obesity levels (>15%), 80% cited this objective. Although it was uncommon for school meal programs to prioritize the reduction of obesity among their program objectives, some did operationalize this goal (Figure 19).[25] Thus, 47% of programs had

[25] In total, 107 programs filled out this question on the survey; these summary statistics refer to the programs for which we have information.

nutritional requirements for food baskets that are intended to address obesity. Nutrition education, health education, food education, and physical education were incorporated in 65%, 53%, 51% and 49% of programs, respectively.[26] Many schools in India also had introduced yoga into the school curriculum.

Less than 25% of programs listed the reduction of obesity as a goal.

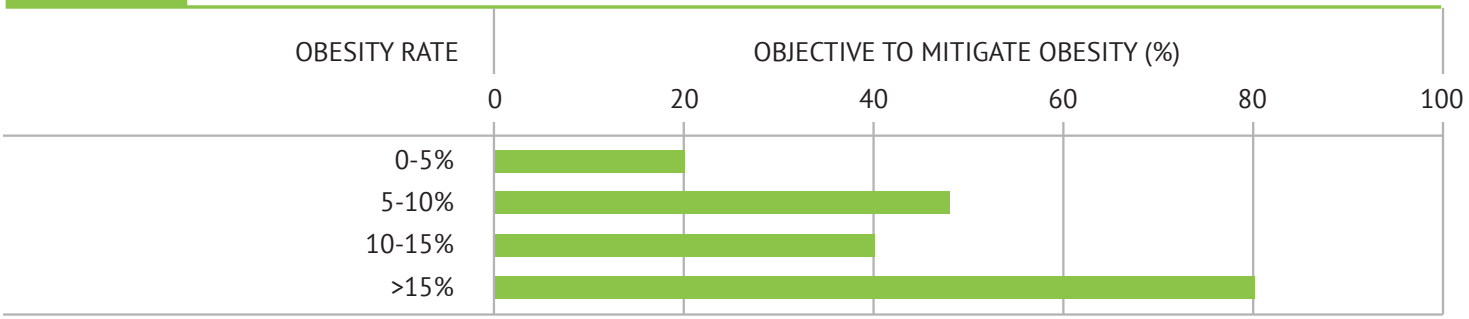
In the United States, the imperative to improve children's food choices and eating behaviors was cited as the greatest challenge associated with school meal programs. Similarly, in Mexico, it was noted that the school environment tends to inhibit progress toward fostering a healthy food culture. However, some countries reported successes on this front. In Greece, it was reported that the number of overweight and obese children (as well as the number of underweight children) has decreased in schools where the Food Aid and Promotion of Healthy Nutrition Program (DIATROFI) is implemented, and in Hungary, fewer school kitchens now employ the traditional practice of frying food items in fat.

A few programs (in Bangladesh, Burkina Faso, Mongolia, and Namibia) acknowledged that obesity was a local problem even though they did not report specific actions being taken to address it. On the other hand, 23% of the programs reported that obesity was not considered a problem and that there was no need for efforts aimed at mitigation. These were found in Cameroon, Chad, China, Ethiopia, Laos, Libya, Malawi, Mali, Nepal, Nigeria, Sierra Leone, South Sudan, Sudan, Timor Leste, Uganda, and Yemen. Across these countries, the rate of child/adolescent obesity ranges from 1.1% to 14.6% (average = 4.2%). (Ref note in Figure 8).

The entities responsible for nutrition-related efforts within school meal programs varied across the 85 countries. In Côte d'Ivoire, the National Nutrition Council (CNN), attached to the Prime Minister's Office, coordinates all nutrition-related activities in the country. In Bangladesh, the government received support from the World Food Program to identify nutritional requirements for school meals. In Cambodia, World Food Program nutritionists provided technical support both through analysis of the food basket and design of the Social Behavioral Change Communication activities. Cooks and caterers frequently received some training related to health and nutrition. Thus, 81% of programs reported that they offer training in food safety/hygiene, 67% offer training in nutrition, 58% offer training in portions/measurement, and 55% offer training in menu planning. (Additional training is sometimes offered in business/management, as well as cooking skills and food preservation and processing).

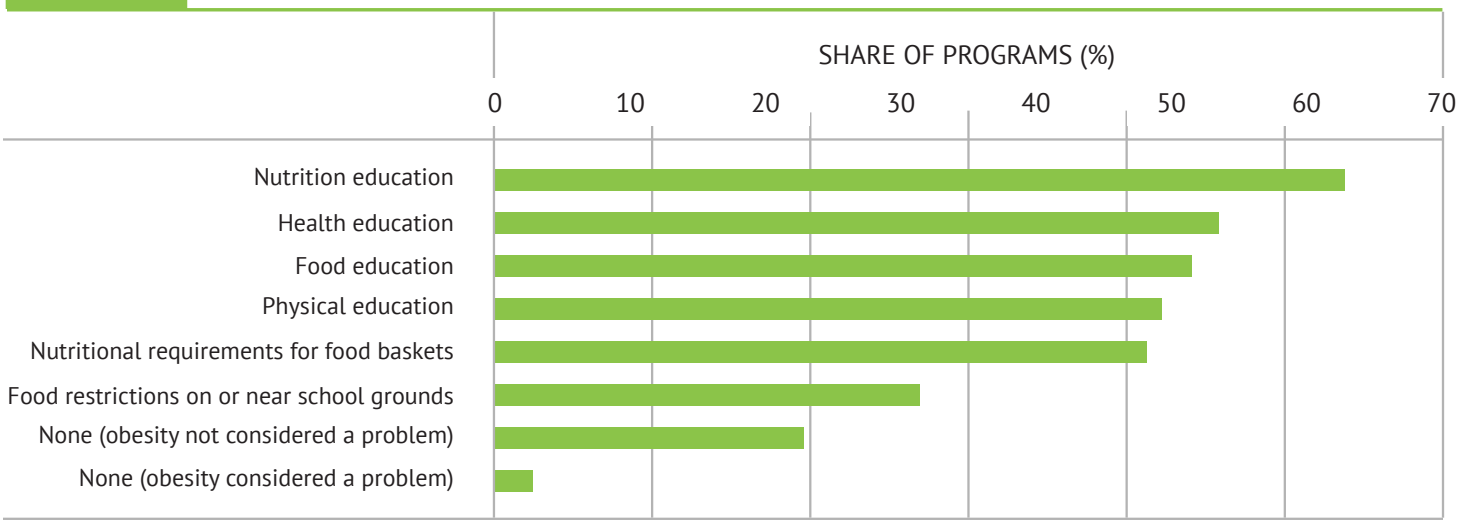
[26] Food education is focused on facilitating the consumption of food that contributes to one's health and well-being. Nutrition education is closely related but is focused on nutrition and nutrition-related behaviors.

FIGURE 18 **LEVEL OF CHILD AND ADOLESCENT OBESITY AND FREQUENCY OF SCHOOL MEAL PROGRAM OBJECTIVES TO MITIGATE OBESITY**



Note: Information on obesity rate reflects the year 2016 (source: WHO 2017). This value represents the prevalence of obesity among children and adolescents among children ages 5-19 years.

FIGURE 19 **APPROACHES TO MITIGATE OVERWEIGHT/OBESITY**



Noting that school feeding is but one component of school health, and that the effects of school meals are mediated by other aspects of health (Bundy et al. 2018), the Global Survey of School Meal Programs © also gathered information on complementary health programs and services offered in schools. It is common for school meal programs to be paired with complementary services or programs related to health or hygiene (Figure 20). Across the programs covered in this report, 97% incorporated handwashing into the school feeding activities. (Handwashing with soap was reported as mandatory in 74% of the countries from which this information was gathered). The provision of potable drinking water was the next most common accompaniment to school meals (in 83% of programs), followed by deworming treatments (in 61% of programs). Menstrual hygiene programs were available with 29% of school meal programs, while other services such as dental cleaning or eye testing were offered less often. It is noteworthy that the rate at which a service was reported as mandatory tracks closely with the rate at which it was cited as being offered, indicating that policy is a driver of complementary programming.

FIGURE 20A **PREVALENCE OF COMPLEMENTARY SERVICES**

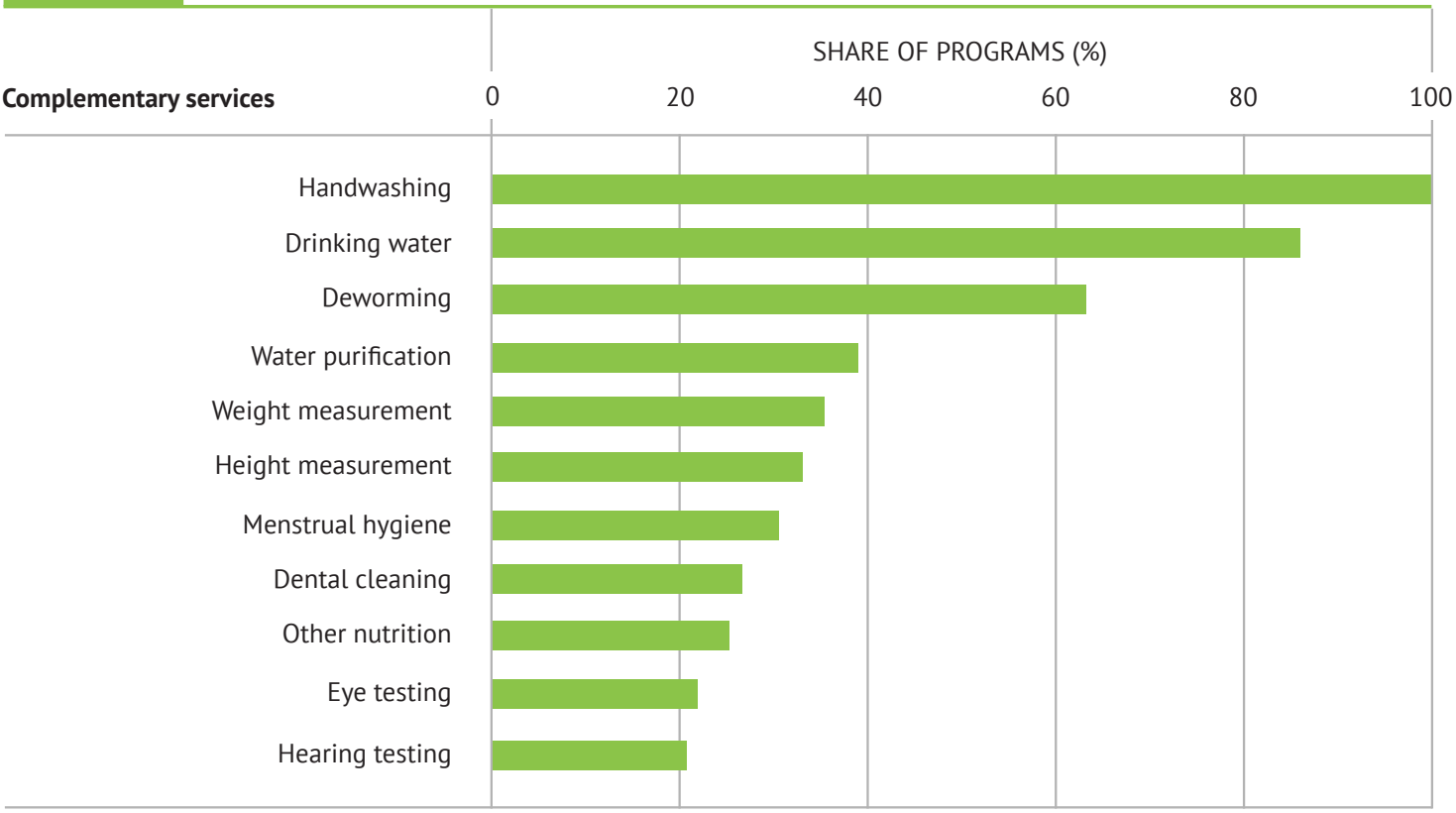
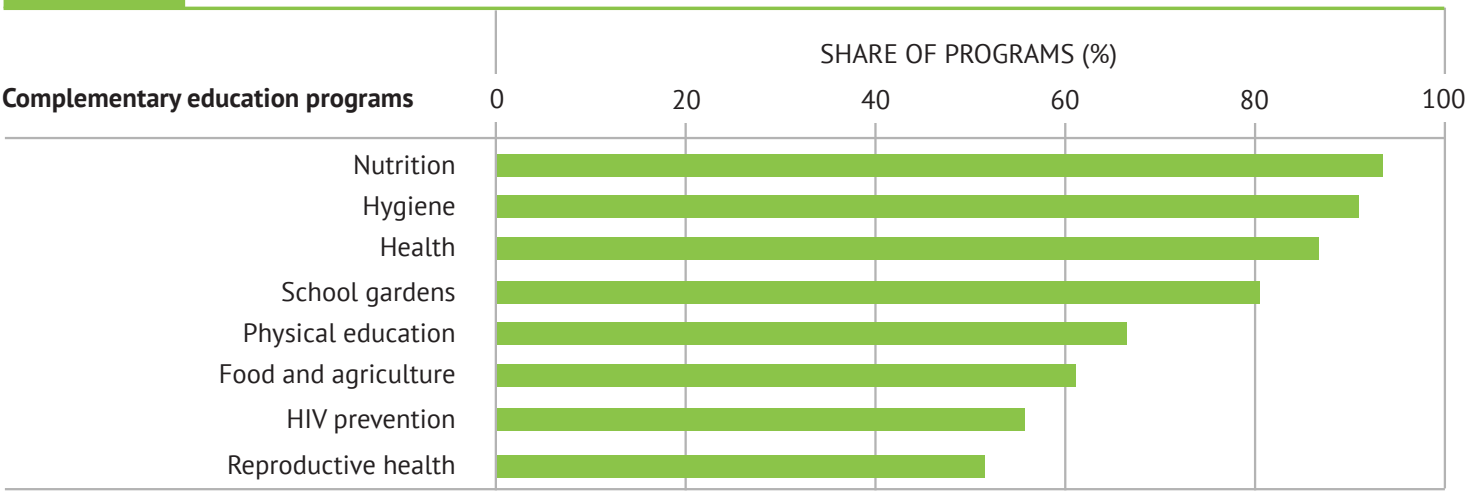


FIGURE 20B **PREVALENCE OF EDUCATION PROGRAMS**



It is similarly common to find complementary education programs offered within the school feeding "package" (Figure 20). Thus, 91% of programs reported that they offered nutrition education. Note that the structure and curriculum of these programs can vary a great deal, such that their impact is likely to be very context-specific. Over three quarters (78%) of school meal programs were paired with school gardens. Among the 77 programs

that included school gardens, the garden products were consumed by students in 95% of the cases and are also sold in 44% of the cases. In Tunisia, a common arrangement is for one-third of garden production to be used in the school meals program, while the remainder is sold.