

## Review

# School meal program in Ho Chi Minh city, Vietnam: reality and future plan

Duc Son Nguyen Trung Le MD, PhD

*Nutrition Center of Ho Chi Minh City, Ho Chi Minh City, Vietnam*

The socio-economic status in Vietnam has developed during the past decades. People become busier for work, and thus they do not have enough time to prepare meal for their children. The school meal program, organized by Department of Education, was first implemented at a kindergarten in 1977, which has been extended to elementary school since 1980. Up to date, 100% of kindergarten and approximately 90% of elementary schools have school meal programs. The purposes of this program are to provide appropriate meals for students, and to serve as education and communication tool for students. About 90% of school meals are prepared in the school's kitchen and the rest are provided by food companies. The weekly menu provides approximately 30% of recommended dietary allowances (RDA) for students. To date, there has been no official dietitian training school in Vietnam. The head of school kitchen, who is not dietitian, is required to participate in a short-term training course, where s/he learns basic nutrition, nutrition requirements and food hygiene and safety. The food companies, which provide meals to school, must be approved for the hygiene and safety condition by the Human Health Services Department of Ho Chi Minh City. In the next plan of national nutrition strategy, establishing dietitian training schools will be prioritized. In addition, the regular nutritional surveillance for school-aged students will be introduced in school system thus we can develop and evaluate the school meal program in terms of nutrients, food safety and nutrition education.

**Key Words:** School meal program, school kitchen, elementary school, dietary intake, Vietnamese children

## INTRODUCTION

During the last three decades, the socio-economic status has dramatically developed. Consequently, quality of life of Vietnamese has improved, resulting in changes in disease patterns. Prevalence of undernutrition in children decreased from 51% to 20%,<sup>1</sup> though its prevalence is still high among school-aged children (approximately 33%). On the other hand, prevalence of overweight children is also increasing in the same age group.<sup>2</sup> In Ho Chi Minh City, one of the biggest and industrialized city, the prevalence of undernutrition has been significantly decreasing over time (Figure 1).<sup>3</sup> Beside the social development, the increased variety of foods, easier assessment of dietary intake and adequate food supply play an important role in improvement of nutritional status of children.

Most of children, from preschool to school-aged, spend approximately 6 to 8 hours at school where they would have lunch and snack. Children in these age groups have high energy and nutrients requirements. School meal program, therefore, has an important role in dietary intake of children.

Positive impacts of school meal program have been documented in other countries. In Japan, height of children became shorter right after the War world II, due to a lack of nutritional supplementation. In order to improve the nutritional status, the school meal program was fully implemented in 1950. The benefits of the program have been well recognized.<sup>4,5</sup> In Malaysia, the school nutrition programs (including school feeding program) has been

implemented in both government and private schools. The program provided 1/4 to 1/3 of daily requirements, which was applied only to elementary school (aged 6-12 years). By which, health and nutritional status as well as immune function against infectious diseases have improved among poor children.<sup>6</sup> In addition, studies in other countries also show that the school lunch program has an important role in providing healthy foods and adequate nutrients,<sup>7-11</sup> and is associated with a better educational and nutritional status of school children.<sup>12-15</sup>

In this manuscript, the author would like to provide a general view of school lunch program in Ho Chi Minh city in the past, present and future direction.

## SCHOOL MEAL PROGRAM

### History

After the Vietnamese war, based on the requirement of work, both father and mother had to work whole day in some families.

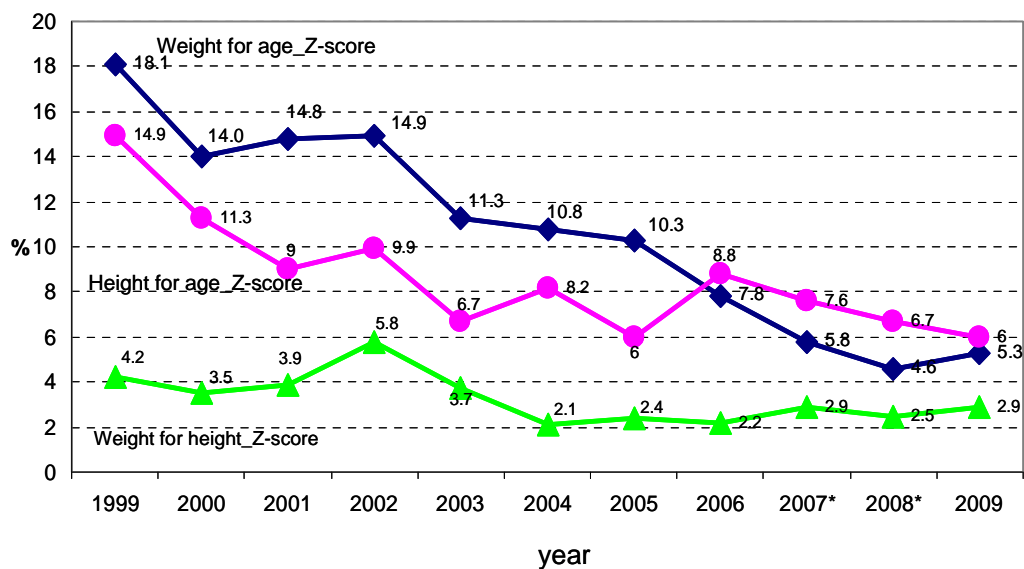
Consequently, the kindergarten and elementary school opened full-day for children and school lunch program

**Corresponding Author:** Dr Duc Son Nguyen Trung Le, Department of Planning, Nutrition Center of Ho Chi Minh City, 180 Le Van Sy Street, Ward 10, Phu Nhuan District, Ho Chi Minh City, Vietnam

Tel: +848-3844-5990, Fax: +848-3844-8405

E-mail: ducsonmd@gmail.com

Manuscript accepted December 21, 2011.



**Figure 1.** Tendency of undernutrition in under-5 years aged children in HCMC

began for preschool children in 1977. Three years later, the program was expanded to elementary schools. Since the economic status was poor at that time, the food served to children were prepared by their parents at home, and sent to school with each child or were sold at school canteen. The school board was responsible to organize lunch. The menu of lunch was simple and consistent such as boiled rice, vegetable and stewed fish or tofu. Meat was rarely included in the menu because of its high cost. Due to a lack of funding supports and/or well-organized management, the program was implemented as pilot in the selected schools. The purpose of the program at that period is to provide food for children.

#### **The present school meal program**

As the socio-economic status developed, the school time was extended to full-day, and thus the needs to provide meals to children at school increased. Under this circumstance, school meal program has become popular gradually. According to Department of Education of Ho Chi Minh City, the school meal program has covered 100% of kindergartens and 90% of elementary schools around Ho Chi Minh City since 2002. Furthermore, in their plan, the program will cover 100% of elementary schools by 2015.<sup>16</sup> To adapt with the social needs and development, the purpose of school meal program has changed. While the purpose in the past school meal program was to provide food only, the current one aims to improve health and nutritional status by supporting appropriate dietary intake and providing nutritional education.

The type of meal provided is different between kindergarten and elementary school because of the different school time. In the kindergarten, breakfast, two snacks and lunch are provided, hence accounting for approximately 60 – 65% of daily energy intake. The rest of daily energy intake can be supplied by dinner and third snack at home. On the other hand, in the elementary school, lunch and one snack are provided, hence accounting for 45-50% of daily energy intake.<sup>16,17</sup> The pupils are supposed to

have breakfast, one snack and dinner at home. The menu is designed on a weekly basis, including snacks and lunch or breakfast (for pre-school pupils only).<sup>16</sup> All the children in a school are served with the same menu at each meal. A meal consists of different type of food such as: i) staple foods providing carbohydrate (including boiled rice, noodle, macaroni...); ii) main entrée providing protein and fat (pork, chicken, beef, or tofu); and iii) soup providing fiber (including vegetable) and fruit. In addition, pupils also receive milk or dairy products after lunch. In general, the meals are prepared based on the Vietnamese traditional style in which proportion energy derived from protein, lipid and carbohydrate are 14-18%, 18-22% and 63-68% respectively.<sup>16</sup> These proportions are consistent with recommended dietary allowances (RDA) for Vietnamese.<sup>17</sup>

Generally, parents pay for school meal monthly at an acceptable price. Depending on school condition, pupils have lunch in the school canteen/cafeteria (for elementary pupils) (Picture 1) or in the class (for preschool pupils) (Picture 2). For the poor family, the fee to have lunch at school can be supported by government in certain cases or the children have to go home for lunch then come back to school after lunch.

Regarding the meal supply, foods are prepared by the school kitchen in almost 90% schools and in the remained schools, foods are provided by food processing companies. These companies must obtain approval for the hygiene and food safety status by Human Health Services Department (HHS) of Ho Chi Minh City based on the criteria of hygiene and food safety regulations.<sup>18</sup> In both school and food supply companies, kitchen is built in the way to eliminate food contamination. Although it is recommended to buy raw food in certified food-stores or supermarkets, there are still some schools who buy food from other sources.<sup>16</sup>

In the school with kitchen, the vice principal or head of school medical unit is the head of kitchen staff. However, due to a lack of regulations, only 50% of them offi-



Picture 1

cially participated in short-term nutrition training course. The remained half learned by themselves with textbooks. Approximately 25% of the head of kitchen staff should be trained for nutrition, resulting in that some of school meals are prepared based on kitchen staff's experiences. To date, there is no official training school for either nutritionist or dietitian.<sup>16</sup>

#### **Quality control for food**

As mentioned previously, the food companies which provide school meal must obtain approval by the HHS based on the certain criteria.<sup>18</sup> This approval is re-evaluated annually for renewal. In order to renew the approval, the whole process of meal preparation is evaluated in terms of purchasing and washing raw food, cooking, preserving, transporting and supplying to the pupils. For the school kitchen, the head of kitchen performs the quality control evaluation and report to HHS. Twice a year, some of the school kitchens are randomly selected for whole evaluation by HHS staff. As a regulation, a duplicated sample of the meal provided should be stored for hygiene evaluation in case that food poison happens. According to HHS report in 2010, the food poison related to school meals were observed occasionally, but no severe case or death were observed.<sup>19,20</sup>

#### **Limitations of the school meal program and the future plan**

Although school meals are consistent with RDA and no severe case or death of food poison has been observed, there still is a limitation that we have no official dietitian for school. Kitchen staffs in both school and company are not fully/officially trained for nutrition. The knowledge that they received from short-term training course is very basic, that is, nutrition and food hygiene. In addition, because the training on nutrition is not mandatory and its continued education is optional, this results in that certain kitchen staff have never been trained in nutrition or their knowledge on nutrition is outdated due to non-attendance to the continued education. It is therefore really difficult to achieve successful school meal program with lack of human resources specialized in nutrition.

Moreover, the problem of the re-evaluation or checking process of meal preparation is that the time span for regular checking is quite long (every two year),<sup>18</sup> and the a small portion of school is randomly selected for evalua-



Picture 2

tion, while quite a number of school kitchen perform self-evaluation. It is necessary to have an appropriate surveillance system for monitoring at school.

Another limitation of the school meal program is nutrition education is not yet well acknowledged. In other countries, the nutrition education plays an important role in the school program. Pupils could learn basic nutrition and attend field work to understand how the food comes.<sup>5,6,10,14,21-23</sup> These activities are really essential and very useful for the children. Additionally, according to Japanese school meal program, the role of nutritionists and dietitians is very important in implementing nutrition education program for young pupils.<sup>24</sup> However, the school meal program in Vietnam still focuses on providing food and the nutritional education is still limited, due to a lack of nutritionist and dietitian.<sup>16</sup>

According to the National Nutrition Strategy in the period of 2011-2020, one of the principal action plans to improve nutritional status in general focused on increase of body height of Vietnamese children and enhancement of the school nutrition program in which the appropriate school meal program should be essential. The integration of nutrition education into school meal program should be performed more effectively.<sup>25</sup> Together with the school meal program, more attention should be paid on human resource development of dietitian and nutritionist.

#### **CONCLUSION**

Although the school meal program has been implemented since early times in Vietnam, the effects of this program is still limited due to certain difficulties in terms of society and human resource. Under the plan in National Nutrition strategy period 2011-2020, the school meal program and activities to improve nutritional status and knowledge of children has been appropriately invested. It is therefore expected that the nutritional situation in the next generation of Vietnamese will be much improved.

#### **AUTHOR DISCLOSURES**

The author declare that I have no conflict of interest with the article.

#### **REFERENCES**

1. Le T., Khoi H.H. Secular trend in growth of Vietnamese people and the orientation of national nutrition strategy period 2011-2020. *J Food and Nutr. Sciences.* 2010;3&4:5-6.

2. Tran TMH, Le KQ, Do TND. Nutritional status of school aged children in Ho Chi Minh City. Annual report of Nutrition Center of Ho Chi Minh City, Ho Chi Minh City, Vietnam 2010.
3. Le T. Trends of nutritional status and its related diseases in Ho Chi Minh City in 2001–2010. *J Food and Nutr Sciences*. 2010;3&4:7-9
4. Nakamura T. The integration of school nutrition program into health promotion and prevention of lifestyle-related diseases in Japan. *Asia Pac J Clin Nutr*. 2008;17:349-51.
5. Yamamoto, S, Fukinbara, M, and Kaneda, M. Japanese school meal program. Journey of 20 years for health care for people in Ho Chi Minh City 1989-2009. Ho chi Minh city, Vietnam 2009.
6. Koon PB. School Nutrition programs: Malaysia report. Global Child nutrition Forum. 2005.
7. Grajeta H, Ilow R, Prescha A, Regulska-Ilow B, Biernat J. Evaluation of energy and nutritive value of meals for nursery school children. *Rocz Panstw Zakl Hig*. 2003;54:417-25. (in Polish)
8. Condon EM., Crepinsek MK., Fox MK. School meals: types of foods offered to and consumed by children at lunch and breakfast. *J Am Diet Assoc*. 2009;109:S67-S78.
9. Burghardt JA, Gordon AR, Fraker TM. Meals offered in the National School Lunch Program and the School Breakfast Program. *Am J Clin Nutr*. 1995;61:187S-98S.
10. da Silva M.V. Contribution of the school meal program--basic cycle--to the nutritional requirements of school children. *Arch Latinoam Nutr*. 1995;45:103-10. (in Portuguese)
11. Gordon AR, Devaney BL, Burghardt JA. Dietary effects of the National School Lunch Program and the School Breakfast Program. *Am J Clin Nutr*. 1995; 61:221S-31S.
12. Laxmaiah A, Sarma KV, Rao DH, Reddy G, Ravindranath M, Rao MV et al. Impact of mid day meal program on educational and nutritional status of school children in Karnataka. *Indian Pediatr*. 1999; 36:1221-8.
13. Matsui T, Suzuki S, Takahashi H, Ohyama T, Kobayashi J, Izumiya H. et al. Salmonella Enteritidis outbreak associated with a school-lunch dessert: cross-contamination and a long incubation period, Japan, 2001. *Epidemiol Infect*. 2004;132:873-9.
14. Nakamura T. The integration of school nutrition program into health promotion and prevention of lifestyle-related diseases in Japan. *Asia Pac J Clin Nutr*. 2008;17:349-51.
15. Graham H, Beall DL, Lussier M, McLaughlin P, Zidenberg-Cherr S. Use of school gardens in academic instruction. *J Nutr Educ Behav*. 2005;37:147-51.
16. Department of Education of Ho Chi Minh City. Annual report 2008.
17. Khan NC, Hoan PV. Vietnam recommended dietary allowances 2007. *Asia Pac J Clin Nutr*. 2008;17:409-15.
18. Ministry of Health. Criteria of hygiene and food safety for restaurant, cafeteria and school canteen. 2005.
19. Quoc Viet. In order to eliminate street food, Improvement school canteen needs to establish. *Laws Magazine*. 2010/10/13; Available from: <http://www.baomoi.com/Home/GiaoDuc/www.phapluattp.vn/Nang-cap-cantin-truong-hoc-xoa-hang-rong/5007515.epi>.
20. Quoc Son. Food safety in school and factory: it is essential to establish a standard procedure, Education. 2009/1/5; Available from: <http://www.giaoduc.edu.vn/news/hoat-do-ng-713/an-toan-ve-sinh-thuc-pham-trong-truong-hoc,-doanh-nghiep-can-mot-quy-trinh-khep-kin,-khoa-hoc-112370.aspx>.
21. Osganian SK, Nicklas T, Stone E, Nichman M, Ebzery MK, Lytle L, et al. Perspectives on the School Nutrition Dietary Assessment Study from the Child and Adolescent Trial for Cardiovascular Health. *Am J Clin Nutr*. 1995; 61:241S-4.
22. Kwak TK, Chang HJ. Advancing institutional dietetics and school nutrition program in Korea. *Asia Pac J Clin Nutr*. 2008;17:352-6.
23. Frank GC, Vaden A, Martin J. School health promotion: child nutrition programs. *J Sch Health*. 1987;57:451-60.
24. Inayama T, Kashiwazaki H, Sakamoto M. Role of school lunch in primary school education: a trial analysis of school teachers' views using an open-ended questionnaire. *Nippon Kosho Eisei Zasshi*. 1998; 45:1115-26. (in Japanese)
25. Ministry of Health. National Strategy of Nutrition: period 2011-2020. 2011.

## Review

# School meal program in Ho Chi Minh city, Vietnam: reality and future plan

Duc Son Nguyen Trung Le MD, PhD

*Nutrition Center of Ho Chi Minh City, Ho Chi Minh City, Vietnam*

## 越南胡志明市的學餐系統：現況和未來計畫

越南在過去幾十年，社經狀況快速發展。人們變得忙於工作，而沒有足夠的時間為他們的小孩製備餐點。學餐系統由教育局所統籌，於 1977 年在幼稚園開始執行，從 1980 年後已經擴大至小學。時至今日，100%的幼稚園及 90%的小學有學餐系統。這個系統的目的為供應學生適當的餐點，並做為教育及傳訊工具。大約 90%的學餐是在學校的廚房製備，而其餘是由食品公司所供應。每周餐點提供學生約占 30%的膳食建議攝取量(RDA)。至今，越南還沒有正式營養師訓練學校。學校廚房的領導者，並非營養師，必須要參與短期訓練課程，以學習基礎營養、營養需求及食物衛生與安全。提供餐點給學校的食品公司，則必須通過胡志明市衛生局的衛生安全核可。下一個全國性營養政策將優先建立營養師訓練學校。此外，將在學校系統導入學齡兒童的定期營養監測，如此可以發展及評估學餐系統的營養、食物安全及營養教育。

**關鍵字：**學餐系統、學校廚房、小學、飲食攝取、越南兒童