

REPORT ON THE HEALTHY TUCKSHOP MOVEMENT FOR PRIMARY SCHOOLS 1999-2001

Department of Health



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Executive Summary

- (a) The "Healthy Tuckshop Movement" was conducted as a pilot in 13 primary schools to improve students' snacking behaviour in 1999/2000. It was co-organized by the Department of Health, the Chinese University of Hong Kong, the United Christian Hospital Community Health Service, the Education Department and the Hong Kong Council of Early Childhood Education and Services.
- (b) A poster promotion of the "Healthy Snack of the Month" was conducted monthly throughout the year to encourage eating of healthy food, either purchased from the school tuckshop or brought from home, during school breaks. Additionally, a teaching kit containing new nutrition education activities for simultaneous classroom use was distributed to teachers in the 13 participating schools. The kit materials included games and other classroom activities focused on healthy snacks.
- (c) Pre- and post-intervention surveys on students showed that there were significant changes in knowledge, attitude and practices on healthy eating. After obtaining feedback from schools, the kit was improved and distributed to all primary schools in Hong Kong. Follow-up telephone interviews revealed that over 50 per cent of primary schools had used the kit.

Introduction

Children are the future of the community. Nowadays many children tend to be overweight or obese. In Hong Kong, around 13.2 % of the primary students are obese and there is a tendency for this obesity prevalence rate to increase¹. This is related to their bad eating habits and lack of physical activity. The Department of Health, together with the Chinese University of Hong Kong (Food and Nutritional Sciences Programme), the United Christian Nethersole Community Service and the Hong Kong Council of Early Childhood Education & Services, supported by the Education Department, organized a "Healthy Tuckshop Movement" under the Healthy Living Campaign in 1999. This movement aimed at promoting healthy snacks and healthy snacking habits in primary schools and lasted for one year. Schools are ideal settings for nutrition education². In Hong Kong, almost all children at the age of 6 to 15 have to go to school due to the compulsory 9 years free education policy. Most primary schools were half-day schools during the period of the programme and many students would buy snacks in the school tuckshops during recesses. Schools have skilled personnel - teachers, who can use their instructional skills to conduct nutrition education programmes. Teachers can teach students how to resist social pressure and can directly address peer pressure that discourages healthy eating and harness the power of peer pressure to reinforce healthy eating habits. Moreover, various studies^{3,4,5,6} suggested that school-based nutrition education can improve the eating behaviour of young persons.

Goal

- To increase the consumption of healthy snacks by primary school students.
- To increase knowledge and awareness of students, teaching staff and tuckshop owners of primary schools on healthy snacks and healthy snacking habits.

Objective

- To increase the knowledge of healthy snacks and healthy eating among primary school students.
To improve the attitudes of primary school students towards healthy snacks.
- To increase the availability of healthy food in school tuckshops.

Organizers

- Central Health Education Unit, Department of Health (CHEU)
- Chinese University of Hong Kong (Food and Nutritional Sciences Programme) (CUHK)
- United Christian Nethersole Community Service (UCNCHS)
- The Hong Kong Council of Early Childhood Education Services (CECES)

Supported by

- Education Department

Target Group

- All students and staff of primary schools in Hong Kong
- All tuckshop staff of primary schools

Time Period

- March 1999 to October 2000

Programme Contents

The whole movement consisted of three parts. The first part comprised two surveys which were conducted among 1300 primary students in 13 primary schools before and after a health education campaign (intervention). The second part was an analysis of the snacks sold by the tuckshops of these schools before and after intervention. Tuckshop owners in these schools were interviewed by a dietitian to identify the difficulties and barriers of selling healthy snacks. The third part was the production of a teaching kit on healthy snacking which was distributed to all primary schools in Hong Kong.

3.1 Health Education Intervention with Pre- and Post-intervention Surveys

Objective

- To increase the scores of the post-intervention survey on the knowledge, attitude and practice of healthy eating and healthy snacking behavior of primary school students comparing to that of the pre-intervention survey.

Organizers

- Central Health Education Unit, Department of Health
- Chinese University of Hong Kong (Food and Nutritional Sciences Programme)
- United Christian Nethersole Community Service

Method

The Pre-intervention Survey:

A pre-intervention survey was conducted in March 1999. Thirteen primary schools (appendix 1) were enrolled as pilot, the selection criteria being all pilot schools must have a tuckshop and that the schools were distributed all over Hong Kong. All of them joined the programme voluntarily and they all committed to conduct health education activities to promote healthy snacks. 1300 primary one (P1) to primary five (P5) students from the 13 pilot schools (i.e. 100 students from each school) were recruited to participate in the survey. In each school, 20 students from each form, P1 to P5, were selected as interviewees and five P4 and five P5 students were selected as interviewers. Both the interviewees and interviewers were selected randomly. The interviewers were responsible for conducting a face-to-face interview with the interviewees within their own school and recording the answers to the questions asked in a questionnaire designed by the organizers. The questionnaire was composed of 10 simple questions (appendix 2) about students' knowledge, attitude and practice on snacks. A briefing session was held for all the interviewers in each school. Each interview took an average of six minutes to complete and the average time to conduct the survey (after the briefing) at each school was one hour.



The Intervention:

Intervention was started immediately after the pre-intervention survey. The intervention was mainly health education activities on healthy snacks and healthy snacking habits conducted by the organizers and the pilot schools:

1. Common intervention: This was the health education activities conducted by the organizers in every pilot school. It included a poster promoting a healthy snack each month for 12 months which was posted on the notice boards and also on the walls of the tuckshops of the schools. Other health education materials on healthy snacking and healthy eating (e.g. pamphlets, other posters, CD-ROMs and souvenirs) were given free to the pilot schools. Every pilot school also received a pilot teaching kit on healthy snacking in May 1999 for trial use.



Pamphlets on healthy eating



Healthy snacking teaching kit (pilot)



Food Pyramid fridge magnet



Posters on healthy snacks



CD-ROM on healthy eating

2. Individual intervention: This was the health education activities conducted by each school. Different schools designed their own activities. The activities included exhibitions, various competitions, seminars, discussions and short talks. (Appendix 3)



The Post-intervention Survey:

The post-intervention survey was conducted in March 2000, i.e., one year after the pre-intervention survey when all the interventions had been completed. The same batch of students doing the pre-intervention survey (both interviewees and interviewers) was recruited to do the post-intervention survey. Due to various reasons (e.g. sickness, leaving the school), only 1233 students (~95%) were recruited to perform the survey. The evaluation compared the findings of this survey with that of the pre-intervention survey. The same questionnaire was used for both surveys.

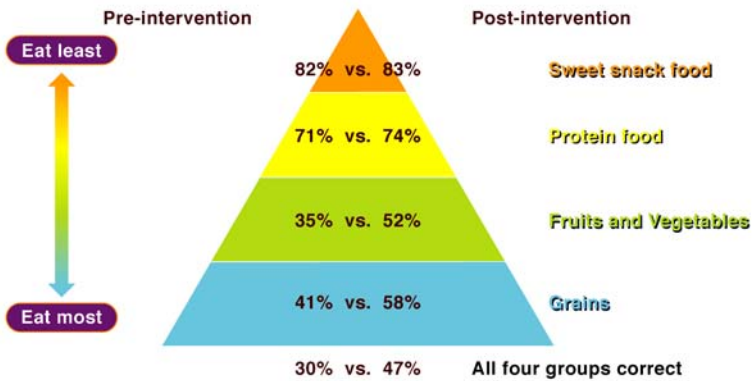
CHEU was responsible for the co-ordination and conduction of the survey, the co-ordination of the intervention and the production of the monthly posters. CUHK was responsible for the analysis of the survey results and UCNCHS was responsible for the design of the monthly posters.

Results

When we compared the results of the pre-intervention survey with that of the post-intervention survey, we saw that while the most popular snacks were still the less healthy fried snacks (potato chips, prawn chips etc.) and candy, fried snacks were chosen by significantly fewer children in the post-intervention survey (50 %) than in the pre-intervention survey (58%). Biscuits, sandwiches and fruits all improved their ranking, while ready-to-eat dried noodles and soft drink purchases declined. When the children were asked if they had \$5 to spend in the tuckshop what would they choose, although the healthy foods did not predominate, they rose significantly in the ranks. The children could also name significantly more healthy foods after the intervention, with more children naming vegetables, fruits, grains, bread/cakes and rice than before. Also, the number of children who could not name a healthy food at all dropped.

Their ability to choose the healthiest drink (water) from five options also increased significantly, rising from 65% to 72% with less children choosing soymilk and chocolate milk. Likewise, their ability to choose banana as the healthiest snack among five snack options also increased.

Knowledge of the Food Pyramid, the healthy eating and snacking guide, also improved after the intervention. The diagram below compares the results of the pre- and post-intervention surveys on pupils' knowledge of this pyramid:



Percentage of pupils correctly identifying the consumption order of the Food Pyramid food groups in the pre- and post-intervention surveys
 (For details of the results, please see appendix 4)

Conclusion

We are glad to conclude that the changes observed in the students' knowledge, attitude and behaviour were generally in the positive direction toward healthier snacking. Our combined health education efforts (between the schools and us) in the form of posters, the teaching kit and the individual school activities were accompanied by an increase in the students' awareness of healthy snack choice as well as, more importantly, improvement in their choices.

3.2 Snack Analysis

Objective

- To change the practice of the tuckshops of the pilot schools so that they sell more healthy snacks and less unhealthy snacks.

Organizers

- Central Health Education Unit, Department of Health
- United Christian Nethersole Community Health Service

Method

Pre-intervention

Lists of all snacks sold in the tuckshops of the pilot schools were obtained. Analysis of the nutritional contents of the snacks was done.

Intervention

The organizers talked in person to the tuckshop owners of all the pilot schools at the beginning of the movement to ask for their support for the movement. (Most of them did not give us a definite answer at the time of the conversation). All the tuckshop staff were then invited to attend a seminar held in May 1999. We reported the results of the pre-intervention survey during the seminar and provided knowledge on healthy snacks. The attendance among the tuckshop staff was 55%.

Each tuckshop received a poster of one healthy snack each month for 1 year (in total receiving posters on 12 healthy snacks) which they posted on the wall of the tuckshop. Each tuckshop owner was requested to sell the healthy snacks promoted in the posters.

Post-intervention

Lists of all snacks sold in the tuckshops of the pilot schools were obtained again after the intervention. Analysis of the nutritional contents of the snacks was done and was compared with that of the lists obtained at the beginning of the movement.

Telephone interviews with the tuckshop owners were conducted to explore the difficulties and barriers for them to sell healthy snacks.

CHEU was responsible for the collection of the sales lists from the various tuckshops and dietitians from UCNCHS were responsible for the analysis of the sales lists and the phone interviews with the tuckshop owners.

Results

We found that most of the snacks sold in the tuckshops before the intervention were unhealthy. On average, each tuckshop sold 6 kinds of fried snacks (e.g. potato chips, prawn chips) and 4 kinds of candy. Over half of them (55%) sold boxed or canned drinks (e.g. Vitasoy, lemon tea, coke). The situation remained more or less the same for these foods after the intervention. However, significantly more tuckshops sold water after the intervention (77%) than before the intervention (23%). Also, significantly more tuckshops (53% post-intervention vs. 23% pre-intervention) sold sandwiches and significantly more tuckshops (50% post-intervention vs. 0% pre-intervention) used brown bread for sandwiches after the intervention. None of the tuckshops sold fruits before the intervention but 23 % of them sold fruits after the intervention.

The main barrier to selling healthy snacks was commercial consideration: not many students bought healthy snacks. Other barriers included higher prices and shorter expiry dates for some of the healthy snacks (e.g. fruits) compared with other snacks.

Conclusion

We conclude that the intervention did not result in any change in the pattern of sales of unhealthy snacks in tuckshops. However, healthy snacks were available for sale after the intervention. This is essential since healthy snacks must first be available in tuckshops for students to choose. Otherwise, any health promotion effort will be wasted because students would have been left with little choice other than unhealthy snacks.

Follow-up Action on the Difficulties in Selling Healthy Snacks

Through in-depth interviews with the tuckshop owners, we had an idea of the difficulties they faced in selling healthy snacks. These difficulties included poor sales of healthy snacks, difficulty in purchasing some healthy snacks (e.g. fruits) and short storage time for fruits. A pamphlet addressing these problems with some suggested solutions were produced and distributed to all primary schools and tuckshops in Hong Kong in February 2001.



3.3 Production of Teaching Kit

Objective:

- To promote healthy snacking habits and healthy snacks among primary school students through the production and distribution of a teaching kit for distribution to all primary schools at the beginning of the school year 2000-2001 (before October, 2000).

Method:

The organizers produced a pilot teaching kit in May 1999. This teaching kit was sent to all pilot schools for trial use and feedback was collected from all of them. Based on their comments, the teaching kit was refined. The final teaching kit included a teacher's manual which contained information on healthy snacks, healthy eating and an overview of the teaching kit contents, a video on healthy snacking habits, a magnetic board game, a chess game and some creative story card games on healthy snacks. The teaching kit was sent to all primary schools free-of-charge by September 2000. A letter was sent along with the teaching kit to the headmasters of the primary schools to introduce the kit and encourage them to use it.





CHEU and CECES jointly designed the teaching kit and CHEU was responsible for the production and distribution of the teaching kit.

Evaluation:

Eight hundred and seventy primary schools received the teaching kit by September 2000. A self-reported evaluation form (see appendix 5) was attached to each teaching kit. The schools were requested to return the evaluation form to us either by mail or by fax after using the kit. Phone calls were made to all those schools which had not returned the evaluation form to us in January and in June 2001 to encourage them to do so. By 31 July 2001, 507 (58%) of all primary schools in Hong Kong had used the teaching kit and 555 evaluation forms were received (some schools might have more than one teacher using the kit and thus returned more than one evaluation form). One interesting thing to note was that before we telephoned the schools, only 7% (60) of the schools had returned the evaluation form. The action of calling the schools had boosted up the use of the teaching kit from 7% to 58%!

Among the schools using the teaching kit, 515 (92.8%) found that the contents of the teaching kit were appropriate/very appropriate to the students, 554 (99.8%) of them found the teaching kit helpful in teaching their students healthy eating/snacking and 488 (87.9%) found that the response of students to the kit was good. The magnet game (精明小食家) and the video (健康小食全面睇) were regarded as the most useful parts of the kit by 226 (40.7%) and 201 (36.2%) users respectively. On the other hand, 228 (41.1%) and 204 (36.8%) of them perceived that the students found the magnet game (精明小食家) and the chess game (健康小食 DIY) most interesting. There were a lot of suggestions on the teaching kit. Many users suggested that we should improve the quality of the carrying case and provide worksheets for consolidation of students' knowledge. Other comments included providing CD-ROM games, providing English version, etc. (Please see appendix 6.) Nearly all users (552) (99.5%) indicated that they would use the teaching kit again in the future.

All in all, the feedback from the users was positive.

Publicity

Two seminars were organized to report on the results of the pre- and post- intervention surveys, to promote healthy snacks and healthy snacking habits, and to introduce the pilot and the final teaching kits during the first and second seminars respectively. The target groups of the seminars were the primary schools and school tuckshop staff in Hong Kong. The organizers also invited the press through the Information and Public Relations Unit (IPRU) of the Department of Health to attend the seminars so as to attract the public's attention. Details of the seminars are as follows:

4.1 The "Healthy Tuckshop Movement" Seminar

- Date : 28.5.1999 (one in the morning 9:30-12:00, one in the afternoon 14:00-16:30)
- Venue : Science Museum, Lecture Hall, 2, Science Museum Road, Tsimshatsui East, HK.
- Target Group : School and tuckshop staff of primary schools in Hong Kong.
- Objective : To disseminate the results of the pre-intervention survey, and to promote healthy snacks and healthy snacking habits and the pilot teaching kit to the schools.
- Programme Rundown : See appendix 7.

(Appendix 8: Brochure of the seminar)

Summary

A total of 259 people from 69 schools attended the seminar. Two television channels, 1 radio station and 7 newspapers reported on this event.



There was a "healthy snacks tasting session" during the intermission. This session was sponsored by 3 healthy food suppliers providing free healthy snacks to all the participants for tasting.



4.2 The "Healthy Tuckshop Movement" Sharing Session

- Date/Time : 22.7.2000, 14:00 to 16:00.
Venue : Academic Community Hall, 224, Waterloo Road, Kowloon.
Target Group : School and tuckshop staff of primary schools in Hong Kong.
Objective: : To disseminate the results of the post-intervention survey and the snack analysis of the tuckshops of the pilot schools, to recommend methods to promote healthy snacks and healthy snacking habits in schools, and to introduce the revised teaching kit to the schools.
Programme Rundown : See appendix 9.

(Appendix 10: Brochure of the sharing session)

Summary

A total of 143 people from 43 schools attended the sharing session. Three television channels, 3 radio stations and 8 newspapers reported on this event.





Newspaper cuttings of the "Healthy Tuckshop Movement" Seminar.



Newspaper cuttings of the "Healthy Tuckshop Movement" Sharing Session.

During the sharing session, we recommended methods to promote healthy snacks and healthy snacking habits in schools. We suggested that each school should set up a tuckshop committee with representatives from the school, the tuckshop and parents to work together on providing healthy snacks to students.

The overall attendance of the sharing session was low compared to the seminar in May 1999 probably due to the timing which was at the beginning of the summer holidays. Many schools and tuckshop staff had gone abroad for holidays. However, there was more press coverage on the sharing session than on the seminar.



Discussion

The Healthy Tuckshop Movement was a campaign of multisectoral collaboration. It involved efforts from the government (Department of Health and the Education Department), non-government organizations (CECES and UCNCHS) and an academic body (Chinese University of Hong Kong) and participation of more than half of all primary schools in Hong Kong and the mass media. We identified the major barriers to healthy snacking faced by school and tuckshop staff, and we developed and implemented health education activities in the schools. Our efforts were accompanied by an increase in the awareness and knowledge, and a change in the attitude and practice of students towards healthy snacking. A teaching kit was developed and distributed to all primary schools in Hong Kong at the beginning of the school year 2000-2001 and had been used by about 58% of all primary schools by the end of the 2001 school year. Almost all users indicated that the kit was useful and that they would continue to use this kit in the coming school years. All in all, the Healthy Tuckshop Movement was successful. It seems that health education intervention is useful in changing the knowledge, attitude and behaviour of primary school students towards healthy snacking. Nonetheless, it requires the joint participation of various groups of people, namely the teaching staff, the tuckshop staff and the students. The roles of the teaching staff and the students in bringing on these changes are obvious, but without the cooperation of the tuckshop staff, all the efforts will be futile since healthy snacks will not be available in the tuckshop. In developing a teaching kit which fits the needs of the primary schools, joint effort with organizations which have practical experience and pilot testing the kit with primary schools are important. Moreover, follow-up efforts to remind the schools to use the teaching kit can greatly raise the utilisation rate of the kit.

Acknowledgement

Chinese University of Hong Kong (Food and Nutritional Sciences Programme)

Education Department

The Hong Kong Council of Early Childhood Education Services

United Christian Nethersole Community Service

(names in alphabetical order)

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Appendix 1

List of pilot schools joining the Healthy Tuckshop Movement

Hong Kong Region

- St. Paul's College Primary School

Kowloon Region

- Alliance Primary School Whampoa
- Kwuntong Government Primary School (AM Section)
- Kwuntong Government Primary School (PM Section)
- SKH Kei Oi Primary School (AM Section)
- SKH Kei Oi Primary School (PM Section)
- Yaumatei Catholic Primary School (AM Section)

New Territories Region

- Baptist Lui Ming Choi Primary School (AM Section)
- Cheong Wong Wai Primary School
- Chiu Yang Primary School of HK (AM Section)
- Chiu Yang Primary School of HK (PM Section)
- Yuen Long Long Ping Wai Chow School (AM Section)
- Yuen Long Long Ping Wai Chow School (PM Section)

(schools arranged in alphabetical order)

Appendix 2

健康小食部活動 問卷調查

多謝你參加這一個問卷調查，這調查是想知道你在學校的小食部買些甚麼和一些你對小食的態度，這些問題的答案是沒有對或錯的，我只是想知道你的看法，現在就讓我們開始吧！



1. 在今天和上一個上課天，你曾在學校的小食部買過多少次小食和飲品？

小食： 沒有 一次 二次 三次 多過三次

飲品： 沒有 一次 二次 三次 多過三次



2. 在今天和上一個上課天，你曾在學校的小食部買過甚麼小食和飲品？

小食： _____

飲品： _____



3. 如果你有\$5，你會在學校的小食部買些甚麼？



4. 你認為甚麼食物是最健康的？(最多可寫三類)

5. 請看以下的五類小食，你認為那一類最健康？



1

2

3

4

5

6. 請看以下的五類飲品，你認為那一類最健康？



1 2 3 4 5

7. 請看以下的四類食物，你認為你應該吃那一類最多？那一類最少？請按照由多到少的次序排列。

最多 _____ > _____ > _____ > _____ 最少



8. 你今天有沒有吃早餐？

有 沒有

9. 你想不想飲食更健康？

想 不想

10. 你希望在學校的小食部買到甚麼小食和飲品？

小食： _____

飲品： _____

～ 完 ～



衛生署



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香港幼兒教育及服務協會



(3/2000)

Appendix 3

Healthy Tuckshop Movement Activities organized by schools during the interim of the 2 surveys (3/99 - 3/00)

Name of School	Date/Duration of activity	Topic	Format	Target group	No. of attendance
School A	29.1.00	Eat & Drink Properly	Exhibition	Students, parents	1000
	During morning assemblies	Balanced Diet	Short talks	Students	500
	Throughout the whole school year	Monthly Healthy Snack Introduction	Display boards	Students	500
	During General Studies lessons	What Kind of Food Is Good for Us?	Discussion sessions	Students	500

Healthy Tuckshop Movement
Activities organized by schools during the interim
of the 2 surveys (3/99 - 3/00)

Name of School	Date/Duration of activity	Topic	Format	Target group	No. of attendance
School B	Started from Nov 99 every Friday morning during assemblies	Healthy Snacks	Announced to the students that healthy snacks were available at the school tuckshop and encouraged them to buy them.	Students, teachers	1200
	24.2.00 to 2.3.00	Healthy Eating	Exhibition Distribution of pamphlets on healthy snacks Food Pyramid magnet distribution	Students, teachers	1200

Healthy Tuckshop Movement
Activities organized by schools during the interim
of the 2 surveys (3/99 - 3/00)

Name of School	Date/Duration of activity	Topic	Format	Target group	No. of attendance
School C	Nov 99	Eat Snacks Healthily and Smartly	<p>Activities aiming at teaching students how to choose healthy snacks and to practice during the school picnic day. Activities conducted in two stages:</p> <p>1. Stage 1 Through the use of a booklet on healthy snacks to increase the awareness and knowledge of students about healthy snacking habits.</p> <p>2. Stage 2 Encouraged students to practice healthy snacking habits on the school picnic day on 10.11.99. Teachers counted the number of students who brought healthy snacks on that day.</p>	All students	800

Healthy Tuckshop Movement
Activities organized by schools during the interim
of the 2 surveys (3/99 - 3/00)

Name of School	Date/Duration of activity	Topic	Format	Target group	No. of attendance
School D (PM)	4.12.99	Healthy Eating	Video show on healthy lifestyle Distribution of pamphlets	All students	700
School E (AM and PM)	28.2.00 to 4.3.00	Food Pyramid	Color filling and drawing competition	All students	1400
	19.5.00	The Importance of Healthy Snacks	Exhibition	All students	1400

Healthy Tuckshop Movement
Activities organized by schools during the interim
of the 2 surveys (3/99 - 3/00)

Name of School	Date/Duration of activity	Topic	Format	Target group	No. of attendance
School F	Oct 1999	Lyrics Competition	A competition for the students to fill in lyrics for a pre-selected melody. The theme of the lyrics was healthy eating.	School Music Unit	540
	Jan 2000	Healthy Eating in Children Basic Principles of Healthy Eating	Pamphlet distribution Posters in each class	All students	540
	13.4.00-16.4.00	Healthy Food	Design of chess game	All students	540
	April 99-April 00	Healthy Snacks	Short talks during morning assemblies on healthy snacks	All students	540

Healthy Tuckshop Movement
Activities organized by schools during the interim
of the 2 surveys (3/99 - 3/00)

Name of School	Date/Duration of activity	Topic	Format	Target group	No. of attendance
School G (AM)	6.4.00	Healthy Snacks	Distribution of pamphlets	Students	877
	7.4.00 Parents' Day	Healthy Snacks	Distribution of pamphlets	Students, parents, teachers	1000
School H	15.5.99	Healthy Tuckshop Movement	Exhibition on healthy snacks during parents' day.	Students, parents	1000
	From April 99 onwards	Healthy Snacks	Short talks on healthy snacks during morning assemblies	Students	580
	24.1.00 to 28.1.00	Healthy Food Activity	Games on choosing healthy food P.1&P.2 Selection of healthy menu of the day P.3&P.4 Healthy food essay competition P.5&P.6	Students	580

Healthy Tuckshop Movement
Activities organized by schools during the interim
of the 2 surveys (3/99 - 3/00)

Name of School	Date/Duration of activity	Topic	Format	Target group	No. of attendance
School I (AM/PM)	16.2.99-30.6.00	Healthy Snacks Corner	<ol style="list-style-type: none"> 1. Selling healthy snacks in the school tuckshop. 2. Selling one new healthy snack every two weeks to increase the interest of students to buy them. 3. Just before the sales of the new healthy snacks, short talks during morning assemblies to recommend the new snacks. 4. Record the sales of the healthy snacks. 	Students, teachers	1977 70

Healthy Tuckshop Movement
Activities organized by schools during the interim
of the 2 surveys (3/99 - 3/00)

Name of School	Date/Duration of activity	Topic	Format	Target group	No. of attendance
School J (AM)	18.12.99 Parents' Day	Healthy Eating	Exhibition on healthy eating. Video show on healthy eating and exercise.	Students, parents	1200
	Oct 99 School Picnic	Healthy Snacks	Circulars to encourage parents to prepare healthy snacks for their kids on picnic day.	Students	832
	11.12.99 Parents' Day	Healthy Eating	Exhibition on healthy eating. Video show on healthy eating and exercise.	Students, parents	1200
School K (PM)	From Sept 99 onwards	Healthy Snacks	Introduce healthy snacks in afternoon assemblies.	Students	861

Appendix 4

Healthy Tuckshop Movement Evaluation Survey Report

This is a report comparing the results of the pre-intervention survey and the post-intervention survey of the Healthy Tuckshop Movement. The pre-intervention survey was conducted in March 1999 on 1300 primary one to five students selected randomly from 13 schools. The post-intervention survey was conducted in March 2000 on the same group of students after their participation in a year-long intervention focusing on promoting healthy snacks and healthy food choices. Only 1233 students were interviewed in the post-intervention survey because the remaining 67 had either left the school or were on sick leave. The same questionnaire was used for both surveys.

Behaviour : Tuckshop snack and beverage purchases. In the first question students were asked if they had purchased any snacks or drinks from the tuckshop on the previous day. Table 1 shows the numbers of snacks and drinks purchased by the students who participated in the two surveys. There was a small but significant increase in the number of students purchasing drinks but not snack foods between the pre- and post-intervention surveys. Approximately half of the students reported purchasing snack foods in both the pre- and post-intervention surveys, whereas only 23% of the surveyed students purchased any drinks before the intervention but 29% after the intervention.

Table 1. Number and percentage of students purchasing snack foods and drinks in the pre- and post-intervention surveys

Number of items of purchased	Snack foods Pre-intervention (%)	Snack foods Post-intervention (%)	Drinks* Pre-intervention (%)	Drinks Post-intervention (%)
0	648 (50)	627 (51)	994 (77)	871 (71)
1	317 (24)	289 (23)	195 (15)	205 (17)
2	193 (15)	205 (17)	65 (5)	101 (8)
3	75 (6)	55 (5)	27 (2)	24 (2)
>3	66 (5)	57 (5)	16 (1)	29 (2)
Total	1299	1233	1297	1230

*P=0.001 between number of drink purchases in the pre- and post-intervention surveys.

The students were then asked which snack food (Table 2) or drink (Table 3) they purchased. Fried snacks and candies were the most popular in both surveys. However, fried snacks, "Mama" noodles, dried cuttlefish, and prawn crackers all showed small but significant decreases in purchase after the intervention. At the same time, biscuits, sandwiches and seaweed all showed significant increases in purchase. Candy purchases did not differ in the two surveys. As for drinks, various boxed drinks were the most popular, with about three quarters of students purchasing these in both surveys. The soft drinks, already less popular before the intervention, were chosen by significantly fewer students after the intervention.

Table 2. Number (%) of students purchasing the most popular snack foods in the pre- and post-intervention surveys

Snack foods	Pre-intervention		Post-intervention		Sig. P *
	Purchases No.(%)	Ranking	Purchases No.(%)	Ranking	
Fried snacks	376 (58)	1	229 (50)	1	0.007
Potato chips	224 (34)		222 (37)		NS
Prawn crackers	39 (6)		14 (2)		0.001
Candies	183 (28)	2	140 (23)	2	NS
Miscellaneous	145 (22)	3	128 (21)	3	NS
(RTE)Dried noodles	66 (10)	4	35 (6)	7	0.004
Dried cuttlefish	50 (8)	5	22 (4)	10	0.002
Sausages	45 (7)	6	55 (9)	5	NS
Biscuits	38 (6)	7	66 (11)	4	0.001
Sandwiches	26 (3)	8	49 (8)	6	0.001
Seaweed	16 (3)	9	28 (5)	8	0.037
Bread/Cakes	15 (2)	10	25 (4)	9	NS

* χ^2 test RTE: ready to eat

Table 3. Number (%) of students purchasing the most popular drinks in the pre- and post-intervention surveys

Drinks	Pre-intervention		Post-intervention		Sig. P *
	Purchases No.(%)	Ranking	Purchases No.(%)	Ranking	
Boxed drinks	228 (75)	1	292	1	NS
Lemon tea(boxed)	87 (29)		106		NS
Soft drink	46 (15)	2	33	3	0.018
Miscellaneous	25 (10)	3	46	2	NS

* χ^2 test

Intention to purchase snacks if given \$5: The students were asked what they would like to buy if they had \$5 to spend in the tuckshop. As can be seen in Table 4, almost the same foods appeared in the students' responses in both surveys. However, significantly fewer chose fried food, candies and cuttlefish, and significantly more chose drinks after the intervention

Table 4.

Item	Pre-intervention		Post-intervention		Sig. P *
	Purchases No.(%)	Ranking	Purchases No.(%)	Ranking	
Fried food	434 (33)	1	241 (20)	2	<0.001
Drinks	416 (32)	2	486 (39)	1	0.001
Potato chips	277 (21)		180 (15)		<0.001
Candies	240 (19)	3	193 (16)	3	NS
Miscellaneous	212 (16)	4	164 (13)	4	NS
Biscuits	109 (8)	5	92 (8)	5	NS
Vita drinks	69 (5)		93 (8)		0.022
Sausages	60 (5)	6	52 (4)	6	NS
Lemon tea	58 (5)		83 (7)		0.013
Dried cuttlefish	54 (4)	7	16 (1)	7	<0.001

* χ^2 test

Knowledge of healthy foods: The students were next asked which were the healthiest foods. Although up to three answers were accepted, most students named only one or two foods. Their responses are shown in Table 5. Almost all students (97%) in the pre-intervention survey could name at least one such food and in the post-intervention survey this increased to 99%. Vegetables was the most commonly mentioned choice, and was chosen by almost half (49%) of the respondents in the post-intervention survey, as compared to about one-third (34%) in the pre-intervention survey. Fruit was the second most common choice in the pre-intervention survey (27%) and the percentage increased to 36% in the post-intervention survey. In the post-intervention survey, grains overtook drinks in being the third most mentioned, and was chosen by 32% of the students, as opposed to only about 19% in the pre-intervention survey. Generally, the changes were in the desired direction, except for milk, a healthy choice rich in calcium, which decreased slightly but significantly from the pre- to the post-intervention survey. Finally, in the post-intervention survey, the students could name significantly more healthy foods than in the pre-intervention survey (1.9 in the pre- vs. 2.1 in the post-intervention survey; $P<0.001$).

Table 5. The healthiest foods as chosen by students in the pre- and post-intervention surveys

Healthiest Food	Pre-intervention		Post-intervention		Sig. P *
	No. of Students(%)	Ranking	No. of Students(%)	Ranking	
Vegetables	443 (34)	1	582 (47)	1	<0.001
Fruits	349 (27)	2	447 (36)	2	<0.001
Drinks	317 (24)	3	261 (21)	4	0.016
Grains	244 (19)	4	389 (32)	3	<0.001
Meat	223 (17)	5	237 (19)	7	NS
Bread/Cakes	218 (17)	6	253 (21)	5	0.047
Rice	192 (15)	7	242 (20)	6	0.001
Milk	155 (12)	8	114 (9)	9	0.029
Miscellaneous	150 (12)	9	86 (7)	10	<0.001
Fish	129 (10)	10	130 (11)	8	NS

* χ^2 test

The students were then shown drawings of five snack foods (candy, banana, fishballs, ice cream bar, and potato chips) and asked which was the healthiest one. The proportion of students choosing banana rose from 94% in the pre-intervention survey to 97% in the post-intervention survey, a small but significant ($P=0.001$) difference. Students were also shown drawings of five common tuckshop beverages (chocolate milk, cola, water, boxed drink, and soymilk) and asked to indicate which was the healthiest. In this question, the proportion selecting water rose from 65% to 72% ($P=0.001$).

Knowledge of healthy eating: The students were shown pictures of four groups of food: fruits and vegetables, sweet snack foods, grains, and foods rich in protein. They were then asked to rank the four groups in the order from the ones they should eat the most to the ones they should eat the least. The majority of the students could correctly rank sweet snacks and the protein foods as the foods they should eat the least and the second least respectively (figure). The 82% that could correctly name the snacks which should be consumed least in the pre-intervention survey stayed the same (83%) in the post-intervention survey. While previously 71% of the respondents in the pre-intervention survey could name the protein foods as those that should be eaten next to the least often, in the post-intervention survey that proportion increased slightly to 74% ($P=<0.030$). Although there was still some confusion about the grains and the fruits and vegetables, there was definite improvement. Whereas previously in the pre-intervention survey only about one-third of them (35%) put vegetables and fruits in the right ranking, that increased to 52% ($P=<0.001$) in the post-intervention survey. In the pre-intervention survey, only 41% put grains in the 'eat most' position, whereas a significantly ($P=<0.001$) higher percentage (58%) did so in the post-intervention survey. In the pre-intervention survey, only 30% could give the correct ranking for all four food groups, but in the post-intervention survey, 47% could do so, which was also a statistically significant ($P<0.001$) increase.

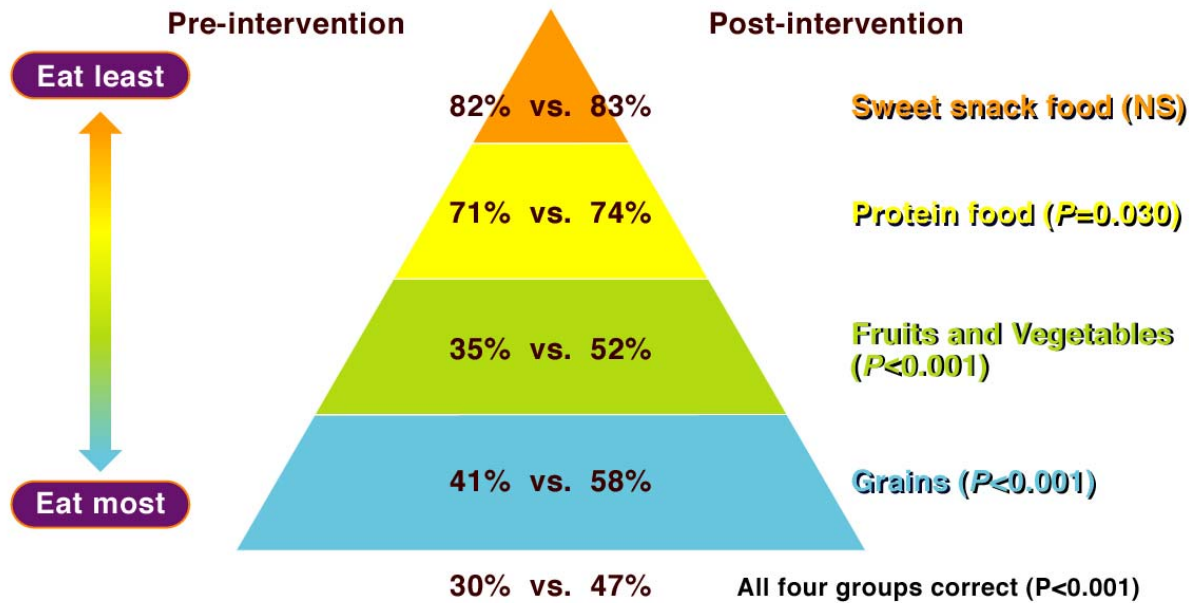


Figure : Percentage (pre- vs. post-intervention survey) of students correctly identifying consumption order of the food groups.
P-value according to χ^2 test

The students were also asked if they would like to eat healthier. Ninety-nine percent responded that they wished to do so in the pre-intervention survey. This remained about the same at 97% in the post-intervention survey.

Breakfast consumption: The students were also asked if they ate breakfast that day. In the pre-intervention survey, 89% of them reported to have done so and this figure did not change much in the post-intervention survey (88%).

Snacks that students would like to have available in the tuckshop: Finally the students were asked what types of snack foods or drinks they would like to have available for sale in their tuckshop. Many items (Table 6) were mentioned, with each receiving less than 25% of the responses. The only significant differences in terms of increasing demands from pre- to post-intervention survey were for miscellaneous snacks (from 17% to 20%; $P=0.017$), fishballs (from 5% to 7%; $P=0.036$) and fruit (from 5% to 12%; $P<0.001$). The significantly decreasing demands were for fried foods (from 18% to 11%; $P<0.001$), potato chips (from 13% to 8%; $P<0.001$), candy (from 10% to 6%; $P=0.001$), biscuits (from 9% to 7%; $P=0.032$), lemon tea (from 8% to 5%; $P=0.003$), and "Vitasoy" (from 8% to 5%; $P=0.004$).

Table 6. Foods that students would like to have available in the tuckshop in the pre- and post-intervention surveys

Healthiest Food	Pre-intervention		Post-intervention		Sig. P *
	No.(%)	Ranking	No.(%)	Ranking	
Miscellaneous drinks	534 (41)	1	491 (40)	1	NS
Boxed drinks	499 (38)	2	430 (35)	2	NS
Water	276 (21)	3	246 (20)	4	NS
Fried food	242 (19)	4	140 (11)	8	<0.001
Bread/Cakes	227 (18)	5	240 (20)	5	NS
Miscellaneous snacks	226 (17)	6	247 (20)	3	<0.017
Milk	202 (15)	7	170 (14)	6	NS
Soft drinks	154 (12)	8	122 (10)	10	NS
Candies	134 (10)	9	79 (6)	14	0.001
Biscuits	122 (9)	10	81 (7)	13	0.032
Sandwiches	105 (8)	11	89 (7)	11	NS
Soymilk	93 (7)	12	123 (10)	9	0.001
Grains	67 (5)	13	70 (6)	15	<0.001
Fishballs	65 (5)	14	86 (7)	12	NS
"Coke"	64 (5)	15	64 (5)	16	NS
Fruit	64 (5)	15	141 (12)	7	<0.001

* χ^2 test

Conclusions. The Healthy Tuckshop Movement in the 13 pilot primary schools brought about satisfactory results in terms of better student knowledge in healthy snacks and drinks and in the Food Pyramid, increase in preferences for healthier tuckshop food, and more importantly, a shift in purchasing habits towards healthier choices.

Appendix 5

「健康小食教材套」成效評估

很多謝閣下使用這套教材套，你的意見可幫助評估此教材套的成效。請填妥以下表格（如有須要可自行影印）傳真至 2602 8932 或寄回新界沙田瀝源街 9 號瀝源健康院 3 樓沙田健康教育中心「健康小食部活動」負責人收。多謝你們的合作。

1. 學校名稱： _____
2. 聯絡人姓名： _____ 聯絡電話： _____
3. 教材套的內容是否適合
 非常適合 適合 一般 不適合 非常不適合
4. 此教材套能否幫你教導學童健康飲食/健康小食？
 能 不能
5. 學童對此教材套的反應
 非常好 好 普通 差 很差
6. 學童對教材套那一部分最有興趣？
 精明小食家 三高小食及食物安全 選擇小食 DIY
 健康小食全面睇
7. 你認為教材套那一部分最有用？

8. 你對此教材套的其他意見

9. 我將來會繼續使用此教材套
 會 不會

Appendix 6

Healthy Snacking Teaching Kit Evaluation Report

Introduction

During the Healthy Tuckshop Movement, a teaching kit was developed to help primary schools teach healthy snacking. The teaching kit was pretested by 13 primary schools. Feedback was collected from them and the teaching kit was refined. At the beginning of the 2000-01 school year, the new teaching kit was distributed to all (870) primary schools in Hong Kong.

We had made every effort to promote the use of the teaching kit: 1. Before we sent out the teaching kit, we invited the headmasters and staff of all primary schools to attend a sharing session on 22 July 2000 which reported on the movement and introduced the teaching kit. 2. A letter was sent along with the teaching kit to the headmaster of each primary school to introduce the teaching kit and encourage them to utilize the kit. 3. Phone calls were made to all those schools which had not returned the evaluation form to us in January and in June 2001 to encourage them to use the teaching kit. A self-reported evaluation form (see appendix 7) was attached to each teaching kit and the schools were asked to return it to us after using the kit. The response rate of the schools before phone calls were made was only 7% (60) and the response rate boosted up to 58% (507) after the phone calls (as at 31 July 2001). The remaining 42% (363) said that they would use the kit in the future.

Summary of Evaluation

1. **No. of schools that returned the evaluation form : 507**

2. **# No. of evaluation forms returned : 555**

One school returned more than one evaluation form because the kit might have been used by more than one staff.

3. **Are the contents of the teaching kits appropriate to the students?**

Very appropriate	:	95	17.1%
Appropriate	:	420	75.7%
Fairly appropriate	:	39	7 %
Inappropriate	:	1	0.2%
Very inappropriate	:	0	0 %

4. **Can the kit help you to teach students healthy eating/healthy snacking?**

Yes	:	554	99.8%
No	:	1	0.2%

5. **What are the general response of the students to the kits ?**

Very good	:	110	19.8%
Good	:	378	68.1%
Fair	:	67	12.1%
Poor	:	0	0 %
Very poor	:	0	0%

6. **Which part of the teaching kit you think the students are most interested in ?**

Magnet games 精明小食家	:	228
Chess and other games 健康小食 DIY	:	204
Video 健康小食全面睇	:	190
Story cards 三高小食及食物安全	:	100

7. **Which parts of the teaching kit you think are the most useful ?**

Magnet games 精明小食家	: 226
Video 健康小食全面睇	: 201
Story cards 三高小食及食物安全	: 117
Chess and other games 健康小食 DIY	: 112
Teaching reference 教師參考資料	: 58

8. **Other suggestions :**

• Improve the quality of the carrying case.	24
• Provide worksheets to consolidate the knowledge.	12
• Provide CD-ROM games.	10
• Provide extra chess games.	8
• The video is not attractive.	8
• Provide soft copies of the kits.	7
• Enlarge the font sizes of the words of the teaching aids.	7
• Provide English version.	6
• Provide VCD instead of video.	5
• Provide transparencies.	5
• The kits are not suitable for P.6 students.	2
• Provide special teaching aids to children of special schools.	2
• Provide stamping chops with healthy snack pictures.	1
• Provide healthy snack menu.	1
• Provide extra sets of story cards.	1
• Use photos for menus and snacks on the magnets instead of cartoon drawing.	1

9. **Will you use the teaching kit again in the future ?**

Yes	:	552	99.5%
No	:	3	0.5%

We approached the three schools with unfavorable responses and asked for their reasons for not using the teaching kit again in the future:

1. One of the schools was a special school for severely mentally retarded children. The staff found the contents too difficult for their students.
2. One complained that the carrying case was too fragile and that different parts of the kit could not be kept tidily in one place. They would only consider showing the video to students in the future.
3. The third school said that due to limitation of the time of each session, the big size of each class and the limited space of the classroom, it would be difficult to conduct group activities as instructed in the teaching kit.

Conclusion

All in all, most of the users were satisfied with the teaching kit and found this kit useful. Almost all the respondents expressed that the contents of the teaching kit were appropriate and the teaching kit could help them teach students healthy eating/healthy snacking.

Most students showed good responses to the teaching kit and they found the magnet games and the chess games most interesting. On the other hand, the teachers liked the magnet games and video most.

All except three of the respondents said that they would use the teaching kit again in the future.

Follow-up action such as phone calls to remind the schools to use the teaching kit could greatly increase the utilization of the teaching kit by the schools. However, if the kit is to be reproduced, some refinement can be considered e.g. stronger case, a choice between VCD and video etc.

Appendix 7

"Healthy Tuckshop Movement" Seminar Programme Rundown

Date : 28 May 1999

Venue : Science Museum, Lecture Hall, 2 Science Museum Road,
Tsimshatsui East, Kowloon, Hong Kong

AM	PM	Schedule	Speaker
9:30-9:40	2:00-2:10	Welcome Speech	Dr. Vivian CHAN Senior Medical Officer Department of Health
9:40-10:10	2:10-2:40	Healthy Tuckshop Movement Survey Results	Dr. Georgia GULDAN Chinese University of Hong Kong
10:10-10:40	2:40-3:10	"Healthy Snacks Analysis" and Talk on Healthy Snacks	Ms. Priscilla LAU Community Dietitian United Christian Nethersole Community Health Service
10:40-11:10	3:10-3:40	Intermission "Healthy Snack Tasting"	Food Suppliers
11:10-11:30	3:40-4:00	Talk on Food Safety and introduction of the new CD-ROM on healthy eating	Dr. Chester TSANG Department of Health
11:30-12:00	4:00-4:30	Introduction of the pilot teaching kit	Ms. Winnie HO Hong Kong Council of Early Childhood & Services Ltd.

Appendix 8



健康小食部 座談會



基督教聯合那打素社康服務



香港幼兒教育及服務聯會

Appendix 9

"Healthy Tuckshop Movement" Sharing Session Programme Rundown

Date : 22 July 2000

Venue : Academic Community Hall, 224, Waterloo Road, Kowloon, Hong Kong

Time	Schedule	Speaker/Guest
2:00-2:05 PM	Welcome Speech	Dr. Vivian CHAN Senior Medical Officer Department of Health
2:05-2:10 PM	Speech of Guest of Honour	Dr. Regina CHING Assistant Director (Personal Health Services) Department of Health
2:10-2:20 PM	Summary of "Healthy Tuckshop Movement"	Video
2:20-2:45 PM	Results of the surveys on knowledge, attitude and behaviour of the students in the pilot schools	Dr. Georgia GULDAN Chinese University of Hong Kong
2:45-3:00 PM	Snack Analysis	Ms. Priscilla LAU Community Dietitian United Christian Nethersole Community Health Service
3:00-3:15 PM	Summary and suggestions of the "Healthy Tuckshop Movement"	Dr. Chester TSANG Department of Health

Time	Schedule	Speaker/Guest
3:15-3:30 PM	Introduction of the "Healthy Snacking Teaching Kit"	Video
3:30-3:40 PM	Presentation of souvenirs to all pilot schools	Dr. Vivian CHAN Senior Medical Officer Department of Health
3:40-3:45 PM	Presentation of souvenirs to organizers	Dr. Regina CHING Assistant Director (Personal Health Services) Department of Health
3:45-4:00 PM	Question Time	All speakers

Appendix 10



健康小食部活動 分享會

日期：2000年7月22日

時間：下午2時至4時

地點：九龍窩打老道224號
大學會堂

