

Original Research

Practice of School Canteen Policy in Schools in the District of Rathnapura, Sri Lanka

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Abstract

Background: School canteen policy ensures the safety of food consumed within the school premises in order to maintain nutritional status of children and to facilitate active learning.

Objective: To evaluate the practice of school canteen policy in Rathnapura district, Sri Lanka

Method: An institution based descriptive cross-sectional study was conducted in all government schools with functioning school canteens in Rathnapura district in Sabaragamuwa province, using a check list and interviewer administered questionnaires by trained health volunteers. Practice of school components of canteen policy was assessed in percentages. Factors associated with better service provision and administration were assessed using chi square test for significance.

Results: Among 583 schools in the district, 179 (30.7%) had functioning school canteens, of which 167 participated in the study (93%). Only 9 (5.4%) schools had less than 200 students. 148 (88.6%) had school health clubs and school food committees. All had school development committees. The PHI had inspected 122 (73.9%) schools while only 25 school canteens (15%) had completed the Grading of Food Handling Establishments forms (H 800).

Satisfactory levels were seen in relation to environment & building in 57%, hygiene & sanitation in 82.6%, food storage in 24.6%, food handling in 71.3%, availability of food varieties in 79.6%, food safety activities in 35.3% and knowledge of canteen owners in 25.7% of canteens surveyed.

Significant association was seen between practice of school canteen policy and type of school being category AB ($p=0.003$), school zone being Rathnapura ($p=0.001$), adherence to administrative criteria by the school administration ($p=0.000$), knowledge level of the canteen owner being satisfactory ($p=0.001$), issue of H 800 by PHI to school ($p=0.002$) and availability of school food committee ($p=0.001$).

Conclusions: Overall, the implementation of school canteen policy is not satisfactory within the district with poor contribution by both health and educational sectors.

Keywords: School canteen policy, practice, factors, Sri Lanka

INTRODUCTION

The School Health Programme (SHP) is one of the components of the Family Health Programme which is practiced at field level by the staff of the Medical Officer of Health, under the guidance of Deputy Director General, Public Health Services of the Ministry of Health¹. According to the population survey conducted by the Department of Census and Statistics, the school population of Sri Lanka consists of 4,165,964 students studying in 10,194 schools of two categories under the government sector, as schools with less than two hundred (5161) and more than two hundred students (5033)².

The School Health Programme was initiated in 1918 by the Colombo Municipal Council with the services of just one medical officer. It was integrated with the Health Unit System in 1926, with the establishment of the first ever health unit in Sri Lanka as well as in South East Asia at Kalutara². The SHP was integrated into the Family Health Programme in 1980 which, now covers the whole country under the concept of primary health care by the Medical Officer of Health (MOH)⁴. Public Health Inspectors (PHI) have been assigned the field-level responsibility of carrying out the SHP under the guidance of the MOH. Health Promoting Schools were established in 2007 as a step forward in the SHP³.

School children spend 14 years of their life (from age 5 to 19 years), six hours a day on weekdays, in schools. The goal of the SHP is to ensure that children are healthy, capable of promoting their own health and health of the family and community, and are able to optimally benefit from educational opportunities provided. SHP consists of Medical Services including Counselling, Healthy School Environment, Life-skills based Health Education, School Community Participation and Health Related School Policies. SHP bears 10 objectives of which the 6th aims at protecting children from communicable diseases and non-communicable diseases including vaccine preventable diseases, while the 8th aims at improving nutritional status of school children by continuous monitoring and appropriate interventions^{3,4}.

Nutritional status of school children has been identified as a main health indicator. Among school children 20.6% suffer from wasting, 7.9% from stunting and 2.4% from obesity, while 10% of urban students suffer from obesity. Since many of them are in their secondary growth spurt, lack of adequate

nutrition leads to missing the last chance of gaining adequate height. Further, low and high Body Mass Index (BMI) also leads to many adverse health outcomes when these adolescents grow older⁵. Simultaneously prevalence of dental caries is also a negative indicator of the health and wellbeing of school children. Improper dietary practices and poor oral hygiene are the leading causes of dental caries in Sri Lanka³.

As a remedial measure to overcome nutritional problems among school children, a new school canteen policy was introduced to the national health services in 2007. According to the general circular 2011/3 by the Secretary, Ministry of Education, ten indicators are used to assess the availability and quality of food in school canteens which includes availability of a canteen in every school, cleanliness of the place and utensils, ensuring health and safety of food according to the national food policy, opportunity to obtain healthy food, promotion of healthy food habits, avoiding of seeking unhealthy food, maintaining the cleanliness around the canteen premises, availability of safe drinking water, storing of food accurately and maintaining the cold temperature in refrigerators and use of non-allergic colourings & chemicals^{5,6}.

The last revision of this policy took place in 2015. The main objective of this policy was to ensure the availability of high-quality food in adequate amounts for school children while preventing harmful dietary practices to maximize their health and wellbeing⁵. Both the Ministry of Education and Ministry of Health are responsible for implementation, monitoring & evaluation of the programme. However, the application of this policy should be monitored to ensure its sustainability in order to achieve the stated objectives^{4,5}. This study was conducted to assess the extent of implementation of the school canteen policy of 2015 within government schools in Rathnapura district of the Sabaragamuwa province, Sri Lanka in the year 2018.

MATERIALS AND METHODS

This was an institution based descriptive cross-sectional study conducted in government schools in Rathnapura district. Study population consisted of all schools with an established and a functioning school canteen (actively being conducted) at the time of survey as revealed in school health survey conducted

by the PHI in the first quarter of the year 2018. The total number of schools in the district is 583, which belong to 4 educational zones; Rathnapura, Balangoda, Nivithigala and Embilipitiya. Among them, 276 (47.3%) had more than 200 students while 307 (52.7%) had less than 200 students. Among 583 schools in the district, 179 (30.7%) had functioning school canteens. Out of schools with less than 200 students, only 17 (5.5%) had school canteens while those with more than 200, 162 (58.6%) schools had canteens⁷. Thus, the study population consisted of 179 schools which had functioning school canteens and all of them were included in the study.

The three study instruments used for the survey were prepared based on Canteen Policy of 2015 of the Government of Sri Lanka and the existing instrument, the H 800 (Grading of Food Handling Establishments) used to evaluate food safety as there was no specific tool to evaluate canteen policy in 2018. The content validity of the study instruments was ensured by the research team by gaining a thorough knowledge on the subject by literature review. The consensual validity of the indicators was ensured by a group of experts in the relevant field for all the instruments⁸. All three study instruments were prepared in English and then translated into both Sinhala & Tamil languages to ensure comprehensive data collection from the entire study population. The first of the three was an Interviewer-administered structured questionnaire (IAQ-1) to evaluate and gather information in relation to the administrative information of the school, to be collected from the principal or any responsible teacher nominated by the principal. The second was a check list to assess the level of practices by the person in-charge of canteen workers and monitoring of the practice of school canteen policy by the PHI. This was prepared based on the canteen policy and the existing instrument used to evaluate food safety (Grading of food handling establishments - H 800) as there was no specific tool to evaluate school canteen policy. The third was an interviewer-administered structured questionnaire (IAQ -11) to assess the knowledge on how to adhere to the school canteen policy by the canteen workers.

Within the district, a team of health volunteers who have passed General Certificate of Education, Advanced Level (GCE A/L) was available who had engaged in data collection in many other research projects. A team of 25 data collectors was selected representing all the 4 educational zones (Rathnapura, Balangoda, Embilipitiya and

Nivithigala). All the members of the team were trained adequately to perform their expected tasks prior to data collection in a three-day training programme by the Principal Investigator to ensure uniformity of collecting information, to ensure completeness of data, to develop a friendly atmosphere during data collection and build up a good rapport with the respondents. They were **provided with the interviewers' guide with detailed instructions on data collection**. The data collection was carried out with the permission of both health and education sectors of the Sabaragamuwa province and the Rathnapura district. Ethical approval was obtained from the Ethical Review Committee, National Institute of Health Sciences, Kalutara. Data collection was conducted from November 2018 to March 2019. Practice of School Canteen Policy in each of its components was assessed in percentages according to the marks obtained from the check list and they were categorized as good (100-75%), satisfactory (74- 50%) and poor (<50%). The associations of practice of school canteen policy were assessed in relation to the type of school, number of students/pupils, availability of school health club & school food committee, inspection by PHI and the level of knowledge among canteen owners using chi square test for significance.

Each correct answer to questions in the knowledge component was allocated 5 marks while no marks were given for incorrect answers. The percentage marks obtained were categorized as satisfactory (100-50%) and not satisfactory (< 50%). Thus, the total knowledge score was assessed.

RESULTS

Among 179 of those schools that had canteens, 167 participated in the study (93%). The representation of each zone in the study group was as follows; Rathnapura 60(35.9%), Balangoda 33(19.8%), Nivithigala 35(21%) and Embilipitiya 39 (23.4%).

Participating schools were type 1AB - 38 (22.8%); type 1C - 61(36.5%); type 2- 53 (31.7%) & type 3- 15(9%). Only 9 (5.4%) schools had less than 200 students. 148 (88.6%) had school health clubs and school food committees. All had school development committees. The PHI had inspected 122 (73.9%) schools while only 25(15%) school canteens had completed H 800 (Table 01).

Table 01: Services available in relation to food safety

Indicator	Yes		No	
	No:	%	No:	%
Health promotion school	153	91.6	14	8.4
Presence of School Health Club	148	88.6	19	11.4
Presence of School Food Committee	135	80.8	32	19.2
Grading on food safety by PHI using H 800	25	14.4	143	85.6

Table 02: Levels of practices ensuring the safety of food

Indicator	Good		Satisfactory		Poor	
	No:	%	No:	%	No:	%
Surrounding environment and building	36	21.6	59	35.3	72	43.1
Maintenance of hygiene and sanitation	78	46.7	60	35.9	29	17.4
Food display and storage	18	10.8	22	13.2	127	76.0
Food handling	46	27.5	77	46.1	44	26.3
Ensuring food safety by health sector	10	6.0	48	28.7	109	65.3
Types of food sold	33	19.7	97	58.1	37	22.2

Table 03: Levels of knowledge and practices ensuring the safety of food

Indicator	Satisfactory		Not satisfactory	
	No:	%	No:	%
Overall practice	91	54.5	76	45.5
Knowledge level	42	25.1	125	74.9

In relation to practice of school canteen policy, satisfactory levels were seen in relation to environment & building in 95 (57%), hygiene & sanitation in 138 (82.6%), food storage in 41 (24.6%), food handling in 119 (71.3%), availability of food varieties in 133 (79.6%), food safety activities in 59 (35.3%). Considering the knowledge of canteen owners, it was satisfactory only in 43 (25.7%) (Tables 02 and 03).

Significant association was seen between practice of school canteen policy and type of school being category AB, school zone being Rathnapura, adherence to administrative criteria by the school administration, knowledge level of the canteen owner being satisfactory, issues of H 800 by PHI school and

availability of school food committee. No significant association was observed with the number of children in the school, availability of school health club or being a health promoting school. It also revealed that mere inspection of the school canteen by the PHI did not have any significant association (Table 04).

DISCUSSION

The assessment of prevalence by a cross sectional survey provides a 'snapshot' of the existing situation helping generate hypotheses⁹. The response rate was 93%, which gives a satisfactory representation by the

Table 04: Factors associated with food safety in school canteen

Factor	χ^2 value	df	P value
Type of school	18.007	3	0.003
School zone	16.350	3	0.001
No. of school children	1.717	1	0.190
Health promoting school	0.124	1	0.724
School Health Club	0.439	1	0.508
Adherence to administrative criteria	23.505	2	<0.0001
Knowledge level of canteen owner	14.342	2	0.001
School Food Committee	19.318	1	0.001
H 800 availability	12.441	2	0.002
Inspection by PHI	1.244	1	0.265

study participation enabling the researches to draw valid conclusions.

According to the general circular 2011/3 by the secretary, Ministry of Education, 10 indicators are used to assess the availability and the quality of food in school canteens⁵. To begin with, every school should have an established canteen. However, according to the school health survey conducted by the PHI at the beginning of the year 2018, only 29.6% schools had functioning canteens in the district of Rathnapura. Non availability of school canteens is a serious issue affecting the nutritional status of school children in the district. However, non-availability of canteens in 94.7% of schools with <200 students, indicates the further scarcity of resources in schools in which rural students are studying. Non availability of food within the school premises prevents children getting at least some food during school time since many of them leave home without breakfast.

Ensuring food safety in the school premises is guaranteed through the school canteen policy which is implemented through the combined effort of Health and Education ministries. Each school needs to be a health promoting school and should have a school health club and a school food committee. Having school development committees in schools that participated in the study is a good sign. In the study group, 91.6% were health promoting schools while 88.6% had school health clubs and 80.8% had school food committees. However, the absence of any relationship between the practice of the school canteen policy and availability of school health clubs

and being health promotion schools could be due to their non-functioning nature with minimal contribution for the betterment of the school canteens.

Considering the practice of school canteen policy in the Rathnapura district, we observed unsatisfactory levels of less than 50% in relation to food storage (24.6%) and food safety activities (35.3%), giving a warning on the safety of food provided by canteens, which in turn would contribute to many illnesses among school children reducing their academic capacity. Further, unsatisfactory knowledge of canteen owners (25.7%) could be a contributing factor for the above-mentioned outcome. This would be the ultimate results of non-involvement by authorized supervisors in maintaining the quality of school canteens as revealed by the non-issuing of H 800 for 85% of school canteens by the PHI.

Among the responsible officers in the health sector, the PHI plays the main role by being the immediate supervisor for ensuring the health of school children. Thus, he must conduct school health surveys in each school within the first quarter of the year, together with assessing the quality of the school canteen and issuing the H 800. Although responsible PHIs had inspected 73.9% school canteens, they had issued H 800 for only 15%, indicating a severely substandard performance of the Public Health Inspectors with nonadherence to assigned duties. The performance of the PHI should be monitored and guided by the MOH through frequent supervisions and evaluations. Although 91.6% of schools were

health promotion schools and 88.6% had school health clubs and 80.8% had school food committees, this had not contributed much to ensuring the safety of food in school canteens. It is very evident that the involvement of both education and health sectors is very poor. When the responsible bodies are not actively engaged in performing their roles, the canteen owners gradually become irresponsible; the ultimate result being the non-practice of school canteen policy in the school, endangering the health of school children within the school premises.

In the present study, many correlations of the practice of the school canteen policy could be revealed with significant associations. First, a difference between the zones could be observed with Rathnapura zone being the best out of the four zones in the district. Schools with more facilities exist in highly urbanized areas. The involvement of parents in looking for better quality in schools could be one reason for this observed positive association. Simultaneously, adherence to administrative criteria also showed positive correlation with the practice of school canteen policy because the strict application of rules and regulations is usually needed in our country for practice of policies. Further, the fact that the type of school being 1 & 2 had better practice than type 3 schools may be due to the fact that having higher grade schools with better administration in the Rathnapura zone contributed to all these significant associations.

Further, monitoring by the health sector by way of availability of H 800 confirmed the value of the appropriate involvement of public health services on the quality of school canteens by way of inspection by the assigned PHI and grading the canteen quality. All these steps will certainly contribute to improving the nutritional status of the school children. This is a very important finding because it is the health sector that is primarily responsible and has the capacity to improve the quality of school canteens. It further emphasizes the value of establishing a regular monitoring system of the canteens through the health officials. Further, the existing level of knowledge of canteen owners is very important in that, improvement of the knowledge can be used as a means of implementing the school canteen policy in Sri Lanka with better quality.

However, non-existence of a significant positive relationship with the availability of a school food committee, availability of a school health club and being a health promoting clearly highlights the fact that active involvement of both education and

health sectors are essential to maintain the quality of school canteens. Although the issue of H 800 showed significant positive association, mere inspection had no effect according to the findings of the current research.

Very few studies have been conducted on this topic to date. Our findings are reasonably similar to those of a study conducted in the Western Province by Weerasingha et al 2017, in which 88% of studied canteens were located in suitable places and 78% had clean outside environment. Of these, two thirds had satisfactory food preparation areas. Only 50% of schools had separate dining areas. More than 80% of canteens had wastewater drainage and 89% of canteens had bins for waste disposal. In 70% of studied schools, food was covered in serving areas. Only 10% of workers used aprons and gloves during working¹⁰.

Generalizability of the findings

Rathnapura district represents all types of schools with a mixed population. Further, the proportion of schools according to the number of students is also compatible with national levels (schools less than 200 students is 50.7%, while in the study it was 52.6%). Both these basic features facilitate the generalizability of results to other parts of the country⁹.

Limitations of the study

Non availability of standard questionnaire at the time of survey is a limitation of the study.

CONCLUSIONS AND RECOMMENDATIONS

Non availability of school canteens in many schools indicates a missed opportunity to provide healthy food to schools in order to supplement the nutrition of school children, especially in smaller schools in rural areas. Proper conduction of school canteens should be the responsibility of both health and education sectors with special attention to identified associated factors and improving knowledge of canteen owners. The findings of the current study would be most useful for designing future strategies in relation to school canteen policy in Sri Lanka targeted and improving the school canteen infrastructure and service in urban and rural areas.

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