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சுகாதார அமைச்சு
Ministry of Health

World Health Organization
Sri Lanka

A Review of Food Procurement and Provision

in Hospitals and Schools in Sri Lanka

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Executive Summary

In Sri Lanka, chronic non-communicable diseases (NCDs) have overtaken infectious diseases and have become the leading killer diseases. The major NCDs are caused by modifiable behavioural risk factors such as tobacco and alcohol use, consumption of unhealthy diets high in sugar, salt and fats and physical inactivity.

Cardio-vascular diseases rank the highest among the ones that cause morbidity and mortality and challenge local health services due to the costs involved in treatment, care and support. Hypertension is the intermediate risk factor for cardiovascular diseases and the main cause for hypertension is excess intake of salt. There are several national policies/circulars which identifies the need to adopt healthy lifestyles including consumption of healthy foods with low sugar, salt and fat content. Legislations other than the food act are not available. The National Salt Reduction Strategy (2018-2022) has identified several strategies to achieve a 30% relative reduction in mean population intake of salt/sodium by 2025 to reach the global target 4 of NCDs.

One strategic objective in the National Salt Reduction Strategy is to create enabling environments in schools and hospital settings to initiate salt reduction initiatives through promotion of healthy food consumption. A General Circular is issued by the Ministry of Health to supply diets to patients and employees in Government Medical Institutions. The sugar, salt and fat contents recommended in the circular are followed by most hospitals hence sugar, salt and fats are procured and provided rationally. An updated guideline with contents relevant to reduction of sugar, salt and fats would help to draw renewed attention to control and prevention of NCDs in hospital settings. Regular monitoring and an annual evaluation should be carried out using an evaluation tool to assess the extent to which the regulations in the circular are followed. The guideline could be shared with the private sector since they are concerned in serving healthy foods although adhering to the WHO recommended sugar, salt and fat level in private hospitals is difficult given the fact that people pay for services including a tasty meal ignoring the importance of it to be a healthy meal. Engaging private sector authorities in discussions on health issues such as prevention and control of NCDs is recommended. In both public and private hospitals educating staff involved in serving food and in- and out-patients on healthy diets should be an on-going activity.

The draft school canteen policy should be discussed with parents, teachers and senior students before finalizing it. An assessment of the implementation of maintenance of school canteens has been completed and when results are available, they could be used for further action. Educating school children on the types of healthy lifestyles including foods that could be used and the consequences of high intake of sugar, salt and fats should be more focused and practical. A guide giving the latest policy background and circulars, healthy menus, in an easy to understand manner should be made available to school Principals and teachers, parents, senior students, retailers and general public.

Abbreviations

BMI Basal Metabolic Index

CPD Continuous Professional Development

CVDs Cardio-vascular diseases

DGHS Director General of Health Services

FAO Food & Agriculture Organization

GMP Good Manufacturing Practices

GOSL Government of Sri Lanka

LMICS Low and Middle-Income Countries

MUST Malnutrition Universal Screening Tool.

NCDs Non-Communicable Diseases

NPM Nutrient Profile Model

NSRS National Salt Reduction Strategy

PHC Primary Health Care

PHI Public Health Inspector

SDS School Development Society

SEAR South East Asian Region

SHPP School Health Promotion Programme

SHP School Health Programme

SLSI Sri Lanka Standards Institute

STEPS STEP wise approach to surveillance

SSB Sugar, sweetened beverages

SUN Scaling up Nutrition

TWG Technical Working Group

WHO World Health Organization

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1. Introduction

In Sri Lanka, chronic non-communicable diseases (NCDs) have overtaken infectious diseases and have become the leading killer diseases[1]. The last estimates made in 2016, observe that NCDs account for almost 83% of total deaths in the country comprising of cardiovascular disease (34%), cancer (14%), diabetes (9%), chronic respiratory diseases (8%) which are considered as the major NCDs while the other NCDs account for 18%[2]. The risk of dying prematurely between ages 30 and 70 years from any of the four-major chronic NCDs was estimated to be 17%[2]. Four modifiable behavioural risk factors: tobacco and alcohol use, consumption of unhealthy diets high in sugar, salt and fats and physical inactivity lead to four key physiological/metabolic changes: raised blood pressure, overweight/obesity, raised blood glucose and raised cholesterol which eventually increases the risk of NCDs[3].

Raised blood pressure or hypertension is the number one intermediate global risk factor for cardiovascular diseases, stroke and death. Excess salt intake is the major risk factor for hypertension. A high salt diet is a probable cause of gastric cancer and has possible association with osteoporosis, calcium containing renal stones and increased severity of asthma[4]. As salty foods cause thirst they are likely to be an important contributor to obesity, especially among children and adolescents, through its association with increased consumption of high calorie soft drinks[4.]

According to World Health Organization (WHO), among both adults and children, the intake of free sugars should be reduced to less than 10% of total energy intake. A reduction to less than 5% of total energy intake would provide additional health benefits. Consuming free sugars increases the risk of dental caries (tooth decay)[5]. Excess calories from foods and drinks that are high in free sugars also contribute to unhealthy weight gain, which can lead to overweight and obesity. Recent evidence shows that free sugars influence blood pressure and serum lipids and suggests that a reduction in intake of free sugars reduce risk factors for cardiovascular diseases[5].

In Sri Lanka, over the last few decades due to globalization, rapid urbanization, trade liberalization with the adoption of an open economy has experienced several socio-economic and lifestyles changes. Rapidly changing food environment dominated by processed foods high in sugar, salt and fat has replaced the traditional meals consisting of rice, legumes, vegetables and fruits. The home cooked meals have been changed to purchasing of over the counter fast foods which are high in sugar, salt and fat and favoured by both children and adults. This “nutrition transition” is identified as one cause for the increase in chronic NCDs in the country[1].

In 2012, the estimated salt intake of a Sri Lankan person including all sources of salt was 10.5g/ day (3.8g of sodium) which is in excess of the WHO recommended daily intake of <5g/day[4]. Reducing dietary salt at the population level is the most cost-effective public health measure available to lower blood pressure in a scenario where cardiovascular disease are the country’s biggest killer disease[4]. STEP wise approach to surveillance (STEPS-2015)[6] of adult risk factors for chronic NCDs reported that 21% of the survey population had a raised blood pressure. The Sri Lanka global school health survey (2017) reports that, 26.5% of children consume a carbonated beverage one or more times/day. Each year in Sri Lanka, an estimated 52,000 years of health life are lost due to consumption of sugar, sweetened beverages (SSBs). Considering a per capita GDP at a market price of Rs 539,398 (2015), every year, about Rs 28 billion are lost due to SSB consumption[7].

Diets high in salt, sugar, fat and consumption of energy dense carbohydrates are contributing to the rising prevalence of overweight and obesity. Obesity and overweight are also risk factors for chronic NCDs. The STEPS (2015) reported that the prevalence of overweight and obesity was 24.5% in adult males and 34.4% in adult females. Survey also observed that nearly one fourth adults had high blood cholesterol levels and 7.4% had a high blood sugar level or were being treated for diabetes. Unhealthy diet is a risk factor for osteoporosis and certain mental disorders[5]. Data of such associations are lacking in Sri Lanka.

The increasing disease burden due to chronic NCDs has an impact on morbidity and mortality as well as on health development. Increased investments in health in terms of physical infrastructure facilities and human recourses will be required to counter the associated demand on health services for health promotion and prevention, treatment, care and support.

Government of Sri Lanka (GOSL) is taking several measures to combat the rising incidence of chronic NCDs especially by addressing measures to reduce high blood pressure: the metabolic risk for CVDs. In 2017, GOSL introduced sugar-sweetened beverages (SSB) Tax, and in 2019, the front-of-pack "Traffic light" label system to indicate the amount of sugar, salt and fat content in foods to assist people to make healthy choices when purchasing packaged food[1,7].

To harmonize with national policies, in 2018, the National Salt Reduction Strategy (NSRS) was developed by the National NCD unit to achieve a 30% relative reduction in mean population intake of salt/sodium by 2025 to reach the global target 4 of NCDs[4]. One strategic objective of NSRS is to create enabling environments in schools and hospital settings to initiate salt, sugar and fat reduction initiatives through promotion of healthy food consumption. It is essential to study the policies/regulations and legislations that are in place regarding the procurement, serving and selling of foods in schools and hospitals to make recommendations to strengthen the existing policies and strategies or to introduce new policies and strategies if necessary.

2. Objectives

- To review the policies/guidelines/regulations/legislations on procurement, selling or serving of foods in
  - government hospitals for the in-patients, staff and in hospital canteens
  - private hospitals in relation to foods served for the in-patients, staff and in canteens
- To review the policies/guidelines/regulations/legislations on procurement and selling in government school canteens
- To review the evaluations of the implementation of the existing guidelines on school canteens in Sri Lanka
- To analyse the feasibility and provide practical recommendations to promote healthy diets (with a focus on salt)
  - government and private hospitals
  - government schools

3. Methods

Data for this assignment was gathered through a literature review of national policies, guidelines, regulations and legislation regarding procurement and provision of food in hospitals and schools and informal discussions with relevant officials of the Ministry of Health, Ministry of Education, Heads of selected Government Hospitals and diet clerks, Nutritionists, Heads of selected Private Hospitals and Nutritionists, School Principals, Senior Teachers, in patients and senior students and parents.

3.1 Desk review

The objective of the Desk Review was to understand the current policy environment in Sri Lanka on healthy food procurement and provision to hospitals and schools.

1) Reviewing policies/strategic plans/legislations and regulations/ guidelines/circulars of Government of Sri Lanka

The Government of Sri Lanka has a very strong policy environment regarding procurement and provision of food low in sugar, salt and trans-fat. It is amply displayed in the National Health Policy and the Food Act No 26 of 1980. There are several institutions of the Ministry of health such as the Nutrition unit, NCD Bureau, Family Health Bureau which have focused on healthy food for citizens in their respective policy documents and strategic plans for creation of "Health Promotion Settings" in Schools, workplaces and hospitals. The Ministry of Education is sited as a stakeholder in creation of Health Promotion Settings in government schools.

Some of the documents which formed the foundation to formulate this document were: "School Canteen Policy" issued jointly by the Secretary Ministry of Education and Secretary Ministry of Health, circular on "Maintenance of School Canteen" by Secretary Ministry of Education and "Introduction of a Healthy Canteen in Workplaces" by Secretary Health and an updated comprehensive circular/guideline on "Supply of Meals to Patients and Employees of Medical Institutions" issued by Secretary Health. The latter is a comprehensive guide which was updated in 2015 from its original which was published in 1998. This guide addresses all aspects of procurement and provision of foods in hospitals. The only local document on evaluation of implementation of school canteen policy was a research study.

2) Review of international literature – Documents of the World Health Organization was reviewed to understand the international perspectives. Documents of other countries on the subject were not very relevant to this consultancy as school and hospital services in Sri Lanka is provided free of charge and is completely under the jurisdiction of the Government of Sri Lanka.

3.2 Interviews and focus group discussions

Information gathered from the Desk Review was used to gather primary data for this study. Data collection methods were informal interviews and FGD as this study was to understand the current policy environment and extent of policy implementation to formulate an in-depth survey later. Data was collected using an "interviewer guide" which was prepared based on the objectives of this study. Since the participants were administrators of hospitals and school principals and teachers, at any given time they were extremely busy, hence interviews were very informal and assessed the awareness of government policies and circulars and the implementation process. FGD with other officials such as hospital administer, nutrition officer, diet clerk helped to understand how the circulars are implemented. Parents of randomly selected schools and senior students

were contacted after school hours. The objective of the study was explained to the participants and what it entails to the end users was also explained. Confidentiality of information and anonymity of participants was ensured.

Government schools

Principals, teachers, parents and students from a randomly selected sample of schools were invited for an informal discussion. The investigators had a simple "interviewer guide" to capture data on the following areas and how these policies and circulars facilitate healthy food procurement and provision in schools:

1. National Nutrition policy
2. School Canteen Policy
3. Circular on Maintenance of Healthy Canteens in Schools

Information was obtained on the following areas to note whether they harmonize with national policies and are in keeping with circulars/guidelines:

- Food procurement process and role of School Development Society in procuring goods for the school canteen
- Role of the food committee –which should monitor and evaluate the running of the school canteen
- Procuring healthy food low in sugar, salt and fat
- Serving healthy food low in sugar, salt and trans-fat
- Sale of unhealthy food around the school premises
- School children's perceptions towards the purpose of having a canteen and whether the children actually have a benefit in terms of purchasing healthy food at a reasonable cost
- Parents view on the school canteen with respect to availability of healthy food and cost of food

Government Hospitals

Hospitals included – teaching hospitals, District hospitals and Base Hospitals from Western, Southern and North Central Provinces.

The investigators had a simple "interviewer guide" to capture data on the following areas and how these policies and circulars facilitate healthy food procurement and serving in schools:

1. National Nutrition policy
2. Introduction of a Healthy Canteen in workplaces
3. Updated comprehensive circular/guideline on "supply of meals to patients and employees of medical institutions issued by Secretary Health.

In all the hospitals after the preliminary discussion with the Director he invited the Administration officer, diet clerk, nutrition officer (in hospitals where such an officer was present), medical registrars following post graduate education in Nutrition.

The areas under discussion were:

- Hospital diets
- Patient menus as given in the circular
- Supply of meals to minor employees as given in the circular

- Diet scale sheets in the circular
- Procurement process especially related to purchase of sugar, salt and fat
- Hospital canteen
- monitoring and evaluation of implementation of circulars

Private Hospitals

Private hospitals were randomly selected and the Medical Administrator was briefed on the objective of the assignment and what the study entails to the hospital and patients with respect to procuring and providing healthy food was explained. Confidentiality of information was ensured.

The Medical Director then invited relevant staff including the nutrition officer in charge of menus for the discussion. In some private hospitals there is a nutrition officer who oversees diets.

The interviewer guide was prepared to gather information on the following areas:

- Hospital policies on procuring and providing healthy food
- Circulars used by the Hospital Administration
- Procuring of food focusing on sugar, salt and fat procurement
- Serving of food focusing on sugar, salt and fat
- Hospital canteens and other eateries in the hospital premises
- Perceptions of nutrition officer, chef on serving healthy food low in sugar, salt and fat

Since the chef of all the private hospitals visited were unable to take part in the discussion due to their round the clock involvement in the kitchen, the few areas for which investigators wanted to obtain their views (adding salt while cooking, limit of use of oil, cooking methods such as frying, perception of healthy foods low in sugar, salt and fat) were communicated to them by the nutrition officer and later conveyed to the investigator by phone and e mail.

3.3 Technical working group (TWG)

Investigators had a discussion with the members of the TWG on the findings of the study and invited them to advice the investigators on any area which needs further elaboration or gaps. Since the TWG was satisfied with the findings the report was finalized.

4. Results

4.1 General

Healthy diet: A healthy diet is one which promotes growth and development and prevents malnutrition. In the global Nutrition policy sphere, the term "malnutrition" no longer refers only to undernutrition, such as wasting, stunting, underweight or deficiencies in vitamins or minerals. Malnutrition–in all its forms–is now understood to include obesity as well as dietary factors that increase the risk of non-communicable diseases (NCDs) such as heart disease, stroke, diabetes and certain cancers[5].

WHO recommendations for a healthy diet[5]

- Energy intake should balance energy expenditure. Keep total fat intake to less than 30% of total energy intake, with a shift in fat consumption away from saturated fats to unsaturated fats, and towards the elimination of industrial trans fats.
- Limit intake of free sugars to less than 10 percent (or even less than 5 percent) of total energy intake.
- Keep salt intake to less than 5 g/day.
- Eat at least 400g of fruits and vegetables a day.

The exact make-up of a diversified, balanced and healthy diet will vary depending on individual characteristics (e.g. age, gender, lifestyle and degree of physical activity), cultural context, locally available foods and dietary customs.

WHO interventions related to salt reduction

Best Buys[8] - WHO recommended a cluster of public health interventions called the "Best Buys" which are regarded as providing the best cost –effective ratio for increasing health status of a Population. The interventions are either population based or individual based. The Best Buys recommended for salt reduction include:

- Reduce salt intake through the establishment of a supportive environment in public health institutions such as hospitals, schools, workplaces and nursing homes, to enable lower sodium options to be provided.
- Reduce salt intake through the reformulation of food products to contain less salt and the setting of target levels for the amount of salt in foods and meals
- Reduce salt intake through a behaviour change
- Reduce salt intake through the implementation of front-of-pack labelling

The above interventions are regarded as interventions with cost effective analysis ≤ $ 100 per Disability Adjusted Life Year (DALY) averted in Low and Middle-Income Countries (LMICS).

4.2 National policies, guidelines and circulars relevant to food procurement & provision in government hospitals

The **National Health Policy** (2016-2025)[9]-calls to reduce premature mortality due to chronic NCDs such as diabetes mellitus, cardiovascular diseases and cancer which account for majority of morbidity and mortality in the country. One strategic direction is: strengthen service delivery to achieve preventive health goals. It has two areas which gives relevance to nutrition of adults and school children.

- provide equitable and efficient health care delivery system to improve maternal health care including family planning, child healthcare and school health
- address health issues related to urbanization through health promotion and healthy settings concept

Salt reduction in hospitals and school settings can be considered to be implicitly included in this strategic direction.

The **National Nutrition Policy** (2010)[10] envisions that every Sri Lankan has access to appropriate and adequate food and nutrition irrespective of their geographical location and socioeconomic status. The policy identifies the need to create a good nutrition environment in schools to address the necessity of reducing malnutrition among school children and promoting healthy workplaces.

The **National Policy and Strategic Framework for Prevention and Control of Chronic NCDs (2010)** [11]has identified the need to promote healthy lifestyles in schools. Within this policy framework, the National Salt Reduction Strategy which was developed later in 2018 specifically identifies the need to create enabling environments in schools and hospital settings to initiate salt reduction interventions through promotion of healthy food consumption.

National Policy on Maternal and Child Health (2012)[12] - this policy is to promote nutrition and health lifestyles among women, children and adolescents. The life course approach adopted by maternal and child health programme is able to provide several interventions to prevent and control undernutrition, overweight and obesity. Interventions can be introduced at various stages of the life cycle to reduce sugar, salt and fat in foods to harmonize with this policy.

The School Health Policy (2019) & the Strategic Plan is being developed under the school health programme[13].

National Policy on Health of the Young Persons (2015)[14] refers to unhealthy diets which are high in salt and the resulting metabolic syndrome.

National Policy on Health Promotion[15] – stress the need to include health in all policies and emphasize that health promotion becomes a core responsibility of all government, private, non-government sectors and civil societies and communities.

National Multi-sectoral Action Plan for Prevention and Control of Non-Communicable Diseases [3](2016-2020). It is stated that the leading killer disease in Sri Lanka is cardiovascular diseases, high blood pressure is an intermediate risk factor for CVDs and excess salt intake is the major risk factor for hypertension. The plan notes that to achieve the Sustainable Development Goal of a 25% reduction in premature mortality from NCDs by

2025 the target set for salt reduction is a 30% relative reduction in mean population intake of salt/sodium. The NSRS was developed to achieve this target.

National Salt Reduction Strategy (2018-2022)[4] - was developed to harmonize with national policies and WHO-SHAKE [16]strategy and one objective of the WHO- SHAKE strategy is to create an enabling environment for salt reduction initiatives through promotion of healthy food settings in schools, workplaces, hospitals and other community settings.

Food Act[17] & Food Regulation 2019 (colour coding for sugar, salt and fat)

The GOSL introduced the Extraordinary Gazette No. 2119/3 (Annex-1) on APRIL 17, 2019 introducing the Food Regulation 2019 (colour coding for sugar, salt and fat). The regulation mandates Front of Pack (F-O-P) labels for pre-packed solid and semi-solid processed foods based on the content of sugar, salt and fats as shown below. The regulation shall come into operation on 1st January 2020.

Sugar content		
More than 22g	**Red**	
5g-22g	**Amber**	
Less than 5g	**Green**	
Salt		
More than 1.25g	**Red**	
0.25-1.25g	**Amber**	
Less than 0.25g	**Green**	
Fat		
More than 17.5g	**Red**	
3g-17.5g	**Amber**	
Less than 3g	**Green**	

Colour codes for sugar content

Nutrient Profile Model for Sri Lanka (2018), Nutrition Division Ministry of Health, Nutrition & Indigenous Medicine [18]

Nutrient Profile Model (NPM) is an objective method of categorizing foods that are more likely to be constituents of a healthy diet from those that are less likely to be constituents of a healthy diet. NP Model for Sri Lanka has been developed based on the South East Asian Regional Office (SEARO) of the WHO model with the prime purpose of regulating marketing of Food and Non-Alcoholic Beverages to Children.

Food based dietary guidelines for Sri Lankans (2011)[19] published by Nutrition Unit of Ministry of Health gives guidance on the need to consume the right balance of food and activities to keep the weight under control, limit salt, fats and sugar in foods and drinks. It also describes the 6 food groups that provide energy and nutrition to form a healthy diet and the necessity to include some item (s) from each group rather than a large number of one or two groups. These guidelines are very simple and practical especially to be used for planning healthy diets in institutions such as schools and hospitals. The guideline highlights the association of high salt,

sugar and fat diets to chronic disease conditions such as cardio-vascular disease, diabetes mellitus, cancer and dental health.

General circular (01-21/2015) on Supply of Diets to Patients & Minor employees in Medical Institutions[20]

This comprehensive circular 01-21-2015 was issued on 28/5/2015 by Acting Secretary Health to all Provincial Health Secretaries, Director General Health Services, All Provincial Directors of Health Services, All Regional Directors of Health Services, Heads of Specialized Campaigns, Directors of Teaching Hospitals and Heads of Institutions. The circular is to be made effective from 1.07.2015 and previous circulars issued regarding this subject is to be deemed as cancelled (Annex-2).

It defines a diet as – A patient's diet for a day is the entire requirement of food for a patient for a period of 24 hours starting from 12 noon on a particular day to 12 noon on the following day. The circular identifies six groups of foods fresh vegetables, fresh fruits, meat and eggs, dry foods, bakery products and packed foods, tins and bottles and the source of diet supply. For e.g. it is stated that fresh fish and dry fish should be purchased from the Fisheries Corporation.

Cooked hospital food is served for two categories:

1. In-patients
2. Minor staff

Food Management committee is responsible for procuring and serving food in government hospitals. Effective hospital catering services rely on sound planning and coordination of a range of processes involving menu planning, procurement, food storage, hygienic cooking and distribution to wards and patients. The procurement process must follow the government procuring procedures. Food selection and standards must be as per ministry instructions.

Patient categories for food services

1. Inward patients – who need food that is served to the bedside using an in-patient menu and services
2. Inward patients – who consume food brought from home or purchased from hospital canteen
3. Out-patients – foods to be purchased from hospital canteens

Types of diets for In-patients

The circular identifies the type of diets for in-patients and staff

Eleven types of diets are identified for in-patients

1. Normal full diet
2. Normal half diet
3. Fluid diets
4. Long term patient's diet- TB, leprosy, cancer, burned patients, rehabilitation patients
5. High Protein diet
6. Diabetic patient's diet
7. Kidney patient's diet
8. High Protein/high energetic diets

9. Liquid diets
10. Paying patient's diet
11. Special patient's diets (on medical advice)

The majority of patients consume "normal full diet" and half diet is given to minor staff. The balance is called therapeutic diets as these are decided on the disease condition. The descriptions given below are in relation to normal full diet given to the majority of in- ward patients.

In-patient diets

- In most of the hospitals contacted - General circular (01-21/2015) on Supply of Diets to Patients & Minor employees in Medical Institutions on procurement and provision of foods is followed when foods are being procured and provided to in-ward patients. This comprehensive circular is followed by the majority of the hospitals contacted. One or two hospitals still adhere to the old circular issued in 1995.
- Procurement of food for hospitals is done adhering to the Government procurement procedures. The procuring process considers standards given in the above circular when purchasing of all food items including fresh vegetables, fresh fruits, meat, fish, canned foods, dry fish, eggs, sugar, salt and fats
- Provision of food to in-patients is guided by the in-patient menus prepared by "diet clerks". Type of diet is selected according to recommendation of the medical officers.
- Special diets e.g. diabetic diet and renal diet are prepared as per the standard menu restricting sugar and salt respectively.
- The General circular 01-21/2015 gives standards in the "Diet scale sheets" on sugar, salt and fats and these standards must be followed. Serving the Normal Full Diet is as follows:

  Vegetable – 1 day (usually on Sunday)
  Eggs, fish, meat or canned fish, dried fish – 6 days
  A protein source is included daily.

- In schedule no 2 of the "Diet scale sheet" in the said circular the amounts of sugar, salt and fat recommended daily for a patient is given as follows:
  - Sugar -15g
  - Salt -5g
  - Coconut oil 7g

- Use of salt and sugar in some hospitals is as follows: For e.g. in one hospital which serve food to about 100 in patients and 150 minor staff members, the daily use is only about 3 Kg of salt for breakfast, lunch and dinner. Around 750g of salt is used to rinse green vegetables. Thus only 2.25Kg is used for food servings which is distributed for 3 meals for 100 in patients and 2 meals for 150 staff. Approximately 450g is used for one meal serving for 150 individuals which is within the WHO recommendation. On a day an egg is used some amount of salt is used when boiling eggs to prevent it from cracking which means an additional amount approximately 150g is wasted. On such a day salt consumption per individual becomes less.
- In one hospital for about 3000 in patients about 2500 normal full diet is served (500 are diabetic diets which are served with low salt). There are about 2500 minor staff also who are served meals. For the 5000 people the recommended amount of salt is 5000x5= 25kg. The daily use as per the diet clerk is about 20kg which is within the WHO recommended levels.

- One hospital which caters to about 650 in patients and 150 minor staff the WHO recommended salt requirements would be 3.750 kg. The usage is around 3-4kg daily inclusive of the wastage for rinsing vegetables with salt water and adding salt when boiling eggs
- In one hospital the daily recommended amount of 5g of salt per person is distributed as 1g for breakfast, 2g for lunch and 2g for dinner.
- Use of oil in most hospitals is low as foods are usually not tempered.
- Sugar is mainly used for morning tea served with breakfast and evening tea (served around 3.30pm) thus consumption is within recommended levels.
- Bread is not served in almost all hospitals thus limiting a source of sugar and salt.
- Those needing special diets e.g. high protein diet will receive them as given in the circular.
- Test checks on the taste of foods is done daily and it includes salt as well. This is a subjective measure to ensure that the food is palatable.

A range of hospital staff are involved from the time a diet is ordered by the doctor in charge of the patient.

Minor employee's diet

They are entitled to a half diet to be partaken within the hospital premises. It could be lunch with morning tea or dinner with afternoon tea depending on the duty shift. Three days of the week a vegetable diet will be served, one day fish, one day an egg, one day meat or canned fish and dry fish one day. Employees are charged a very nominal fee of Rs 10/= monthly for the food.

The circular includes not only on purchasing but also on storage, kitchen hygiene, distribution in wards and supervision during cooking with test checks.

- "Half diet" includes the following with morning or evening tea whichever is applicable to their work shift.
    - Vegetable diet x 3 days
    - Eggx1 day
    - Fishx1 day
    - Meat or canned fish x1 day
    - Dried fish x1 day
- Raw materials including salt, sugar and fats are purchased as given in the said circular. The raw materials are for both in-patient diet and minor staff diet
- Sugar, salt and fat is used as per the "Diet scale sheets" schedule no: 15. Recommended amount of salt is 4g/day, sugar 8g/day and 3.5g of coconut oil /day for an individual.
- In some hospitals the minor staff diet is cooked separately. In some hospital's meals are cooked together for both in-patients and minor staff. In the latter situation it was noted that the usage of sugar and salt was high. Minor staff demands food that is palatable with salt and tea with sugar.

Hospital canteens

Introduction of a healthy canteen in workplaces[21] - This circular: 01-17-2015 was issued by Secretary Health on 29/4/15 on how to provide canteen food services in workplaces (Annex-3). This applies to Hospital canteens as well. Regarding sugar, salt and fats, it is stated that: oil should be used minimally and reuse of oil is prohibited, no sweeteners should be added to foods and drinks.

Running of hospital canteens are outsourced by a tender procedure. A "canteen agreement" is prepared by the respective hospitals. Almost all agreements give instructions on restricting use used oil, sweeteners in foods and drinks. Canteen welfare committee is responsible for maintaining canteens. Although standards are given in the agreement on restricting use of used oil, sweeteners in foods and drinks, most canteens have unhealthy foods and beverages. Any staff member could purchase food from hospital canteen.

Director General of Health Services issued a General Circular no -01-42/2015 named "Healthy life through minimum sugar consumption" on 12.11.15 to come to effect on World Diabetes Day 14th November 2015 to motivate people to reduce consumption of sugar-salt which are the main risk factors for non-communicable diseases[22] (Annex-4).

There is no tool or a check list for monitoring and evaluation of whether the standards given in circulars are followed.

Some Provincial Health Services Directors (PDHS) have prepared a circular aligning with the above circular giving a list of items that should be utilized for breakfast, lunch and dinner and also snacks, tea and juices that could be sold in the canteen. It is instructed not to add sugar to tea but to offer sugar in a container to be added by the customer and to serve fruit juices with less sugar.

4.3. National policies and guidelines and circulars relevant to food procurement & provision in private hospitals

The following are three types of patients identified in private hospitals.

1. Inward patients – food to be served to the bedside using an in-patient menu and services
2. Inward patients – who may purchase food from retail outlets or from Vending Machines
3. Out-patients – foods from retail food outlets or from Vending Machines

- **T**here are no policies, guidelines or circulars issued on procurement and provision of foods for in patients or for the food outlets rented by the hospitals
- Although there are no documented policy or interventions to create an environment which support healthy food and drink choices by increasing availability and promoting "Green foods and drinks" or discouraging availability of unhealthy foods and drinks, in practice most hospitals are concerned about serving healthy diets.
- There is no policy or an intervention to encourage staff to promote healthy diets but in practice administration, nutritionists (if present) and kitchen staff are concerned of the implications of unhealthy diets and have taken steps to control use of sugar, salt and fat

In patient diets

- In some hospitals on admission of a patient, nutrition related assessment is done using the Malnutrition Universal Screening Tool (MUST). The objective is to identify the undernourished/under- weight. This assessment is done specially to prepare patients who have a low basal metabolic index (BMI) to the recommended intervention prescribed by the doctors e.g. surgery, radiotherapy. Such patients are referred to the Nutritionist. At times when obese and overweight patients are identified they are advised

by the doctors and nurses on healthy diets or sometimes referred to the Nutritionist. It is done on a case by case basis.

- Few hospitals provide some form of nutrition counselling when over- weight patients are detected and at the request of the patient a personalized menu plan is developed for them.
- In -patient diet is recommended by the doctor based on the disease condition. The recommended menu is sent to the kitchen. In most of the hospitals there are set menus for ordinary patients (those who are not on special diets). WHO recommended amount of sugar, salt and fat is not followed. Salt is added according to taste of the kitchen staff.
- Almost all hospitals have menus for patients with special disease conditions e.g. high protein diet, Renal diet
- In most of the hospitals excepting in one there is no policy to restrict sugar, salt and fat unless recommended by the treating doctor. In one hospital from the day of inception the policy has been not to serve fizzy drinks, serve or purchase processed meats and red meats. This particular hospital tried to serve healthy food in retail outlets in consultation with the person who is running the outlet but outsiders, by-standers were complaining that the food was tasteless, and they discontinued the policy.

- In one hospital Good Manufacturing Practices (GMP) are adopted and Sri Lanka Standards Institute (SLSI) guidelines for food safety is practiced. Food samples are sent to Medical Research Institute (MRI) for micro-bacterial studies and water samples for electrolyte testing. In this hospital about 4kg of salt is used for a day to serve 3 meals for about 100 in-patients and 2 meals for a staff around 600. Basically, daily salt requirement would be 5g x 700 individuals = 3.5kg. On a daily basis 4kg of salt is purchased. Similarly, the sugar requirement would be for a day i.e. 30gx700 = 21 Kg. They purchase only around 6kg for a day to be added to teas and desserts, in addition each patient is given one sachet of sugar (5g) with morning and evening tea which will amount to 5x2x100=1kg sugar. As per this approximate calculation the use of sugar and salt for in-patients and staff in this hospital is within the recommended levels.

- In another leading private hospital, the daily purchase of oil is 1-1.5kg for 200 in-patients. 2kg of sugar is purchased for about 200 patients for custard, jelly and lime juice, which is approximately 10g/day. If tea is served then an additional 5g sachet is given, tea is served twice a day that is 10g/day. For e,g if a patient takes custard or jelly and 2 teas the sugar consumption will be 20g/day. Sugar is used mainly for fruit juices and desserts. For about 200 patients and staff around 2-2.5kg of salt is purchased. This will be approximately 10g/day for a patient which exceeds the daily recommendation.
- In one hospital White Bread is made daily using the following recipe – 1kg wheat flour, 12g yeast, 20g salt, 30g sugar, 500ml water. With this recipe 4 loaves of 50g bread is baked. Each loaf of bread will have 5g of salt and 7.5g of sugar. The loaf of bread is baked within the recommended amounts of salt and sugar.
- In 2007, the Sri Lanka Navy launched the “healthy diet” programme to reduce sugar, salt and fat being served for all meals. A baseline survey was done which revealed the per capita consumption of all three components were high. Then a three-pronged awareness programme was initiated for 1) decision makers2) consumers 3) those engaged in the cooking process. The salt taste was compromised by using extra spices such as tamarind and cinnamon. The intervention was maintained for 5 years but a post intervention survey was not done. However, there was a reduction of bulk purchase of sugar, salt and fats and created some awareness among the consumers on healthy diets. Some limitations in calculating the

total consumption amounts were 1) using salt water to wash green leaves 2) Adding salt to the rice pot but draining the salt water 3) using the same stock when there is some entertainment function

Retail food outlets in private hospitals

These outlets are run by reputed food suppliers as a profit-making business. Out patients, visitors, outsiders, by standers, hospital staff patronize them. The hospital administration is not in a position to implement restrictions on the sale of foods high in sugar, salt or fat.

4.4 National policies and guidelines and circulars relevant to food procurement & provision in government school canteens

School Health Promotion Policy[13]

Sri Lanka school health initiatives date back to the 1918's and the country embraced the concept of school health promotion and developed the "School Health Promotion Policy" to plan and implement the programme as School Health Programme (SHP).

The School Health Promotion Policy has identified the following strategic objectives:

1. To develop policy, legal structure and partnerships among all stake holders for promoting health of school community.
2. To ensure a safe, healthy environment, both physical and psycho-social that facilitates learning
3. To provide skills-based health education for school children.
4. To ensure access to health services
5. To empower the children to be change agents to improve the health of the family, community and engage the school to be a catalyst.
6. To develop and implement plans at all levels for school health promotion

School canteen Policy/circulars

A school canteen policy was drafted in 2006[23] and it had ten strategies to be implemented by the Central and Provincial Ministries of Education (Annex-5).

The objectives of maintaining healthy school canteens are:

- Providing nutritious, wholesome food to school children
- Inculcate correct food practices and behaviour patterns among children
- Increase the percentage of children with adequate nutrition
- Reduce the incidence of non –communicable diseases
- Assist in improving learning achievement
- Convey proper nutrition messages to the community

The following ten strategies were identified:

1. The Government will ensure the right of school children to have nutritious, culturally acceptable food available at a reasonable cost within the school premises

2. Ensure food hygiene
3. Facilitate children to get their meals during school hours,
4. Develop the school canteen as a “health promoting center”
5. Promote and provide child friendly services in school canteens
6. Allocation of necessary funds to improve facilities of school canteens
7. Support & strengthen human resource development to improve quality of services to a level acceptable to the consumer
8. Build up a regular monitoring system with the participation of relevant officers in both health and education sectors in National, Provincial, District, Zonal and Divisional levels
9. Take every opportunity to develop healthy dietary habits among school children by improving their knowledge, attitude and practices over diet
10. Evaluate at national level to assess the achievements of the broad aims of the policy

Based on the above draft policy, Secretary Ministry of Education issued the circular 2007/2 to education officers on maintenance of school canteens. In 2011, an up-dated circular 2011/3 was issued by the Secretary Ministry of Education on Maintenance of School Canteens (Annex-6). In 2015, another updated circular on Maintenance of School Canteens (35/2015)[24] was issued by Secretary Health after a policy update (Annex-7) and this circular supersedes the provisions of the two former circulars: 2007/2 and 2011/3. Thus the circular which is currently implemented is 35/2015 circular issued by Secretary Ministry of Education (Annex-8).

Discussions with the policy makers revealed that there are challenges such as lack of legislations, canteens being conducted as a profit-making business, children preferring unhealthy foods which are prepared without adhering to health-related standards and absence of involvement of civil society.

Maintenance of Healthy Canteens in School[24]

The circular 35/2015 (Annex-8) is comprehensive. The circular emphasizes that health and nutrition is crucial for the physical growth and mental development of school children. Creating awareness of correct nutritional practices and making available healthy foods, ensuring the safety of food and providing food at a reasonable price are expected of school canteens.

As per the circular, School Development Society (SDS) is responsible in maintaining a healthy school canteen. SDS could decide whether the canteen is run by them or a contractor. Whatever procedure is adopted the SDS should:

a) Ensure that facilities are available in all schools for students to obtain healthy food in terms of the provisions of Food Act no. 26 of 1980 and the Consumer Protection Act no. 09 of 2003.
b) Ensure the standards of cleanliness of persons handling food, places from where food is supplied, and the utensils used in the preparation of food are clean.
c) Encourage the sale of healthy foods in the canteen.
d) Prohibit the sale of unhealthy foods with too much of oil, sugar, or salt

The circular emphasis that the canteen should be run as a welfare activity and not as a source of income to the school. The SDS should appoint a sub- committee designated as “Food Committee” vested with the responsibility of monitoring and evaluating the running of the canteen

If the tender is awarded to a contractor, it is done as per the government procedures. The person who is running the canteen has to sign an agreement with the Zonal Director/Principal and the "Agreement form" is attached to the said circular.

A comprehensive **Manual on Maintaining Healthy Canteens in Schools** was also prepared together with the circular. This was prepared under the Scaling up Nutrition (SUN) programme by the Ministry of Education (School nutrition & health service branch) in collaboration with the Food & Agriculture Organization (FAO) using a multi-sectoral approach. It includes the following areas:

1. Guidelines on the sale of food in the school canteen
2. Maintaining the environment in a healthy school canteen
3. Safety of food
4. Model menus
5. Model exhibits and visuals to be displayed in and outside the canteen

The school canteen is to be promoted as a "health promoting centre". Policy implementations are to be monitored by the Ministry of Health through public health inspectors (PHI) and officials of Ministry of Health. As of September 2019, there were 10,400 government schools in the country and only 2729 (26.2%) schools have school canteens[25]

School Canteen Assessment Tool (H 1306)[25] has been prepared by School Health Unit of Family Health Bureau, Ministry of Health in 2018. It was piloted in 2018 and implemented in 2019 to monitor and evaluate the implementation of school canteen policy/circular. Data collection was completed, and data is being analysed. Two Grades are given A and B. Schools ranking Grade B will be given 3 months to achieve Grade A status (Annex-9).

School Health Survey[26] – is carried out within the first three months of each year by the public health inspector (PHI).

Prevention of overweight and obesity among school children in Sri Lanka (2018)[27]. This is a guideline published by the School Health Unit of the Family Health Bureau Ministry of Health, Nutrition and Indigenous Medicine which has included a section on an ideal school canteen. It gives a broad coverage on main meals, snacks that could be served, choice of beverages, prohibited foods and beverages. It recommends healthy menus which include a variety of food items inclusive of sweets and beverages which are not containing high sugar, salt and fats.

A Cabinet Paper – My no: MF 5/NP/CP/17/104 dated 31.5.2017 was issued on Prevention of obesity among school children. It refers to ten specific areas and one is preventing selling of food within 100 meters of school premises[25].

4.5 Evaluations of the implementation of the existing guidelines on school canteens in Sri Lanka

An Assessment of the Implementation of Guidelines in School Canteens was carried out by the Institute of Policy Studies and Ministry of Education Services in 2015[28]. The survey results given below throw light on the

practical difficulties school Principals, teachers and students face in the whole process of having a healthy meal in school.

Availability of food in school canteens[27] – the survey which was conducted among 68 government schools revealed that rice was available in 78% canteens and milk rice in 31% of the canteens. Pulses were available in less than 50%. Chick peas were available in 45.6%, cowpea in 14.7% and Mung bean in 5.9% of the canteens. Manioc and sweet potato were available in 10.3% and 1.5% of the canteens respectively. Although string-hoppers were available in 63.2%, over 50% of the canteens were serving string hoppers prepared from wheat flour. Noodles were available in 50% of the canteens. Availability of protein sources was poor: fish was available in 27.5%, dried fish in 19.6% and egg in 64%. Leafy vegetables were available in only 14.3% and fruits in 16.3%. Fresh Milk (8.8%), fresh fruit juice (13.2%) and kola-kande (7.4%) were available in the canteens. Pasteurized milk, carbonated drinks, commercial fruit juices and malted drinks were available in 30.9%, 25%, 16.2% and 14.7% of the canteens respectively. Chocolates were available in 20.6%, cakes in 5.9%, ice cream in 5.9% and in 4.4% doughnuts and watalappam. Most of the canteens were serving foods with high fat content: pastries in 57.4%, biscuits in 47.1%, deep fried short eats in 80.9%. Almost all the schools had safe drinking water.

Awareness on school canteen guidelines [27]**–** All the Principals of the above school survey has seen the school canteen circular and guideline. All of them were aware that school canteens should not sell soft drinks and sweets. They also knew that wheat-based items need to be restricted and rice and rice-based foods should be encouraged. Some were unaware of food safety procedures given in the guideline.

Guidelines of Bringing food to schools by students[27] – the survey highlighted the difficulties faced by teachers on checking the food brought from home as some do not bring food due to economic constraints. There are other issues such as students not consuming what they bring from home but and stay hungry or buy food from the canteen.

Food habits and guidelines [27]– Principals have been of the view that food habits of the students being the main barrier to implement a healthy canteen policy. Principals suggested that school in isolation is unable to change food habits as children demand for unhealthy foods as they have been used to such habits at home and also affordability of some foods although considered as healthy and adverse media influence on children on foods. The canteen operators have to sell items not listed in the Ministry of Education guidelines as students demand for those unhealthy items. Canteen operators have also observed that children cannot afford to buy some listed items as a result they buy cheap items or even pool money and buy food and share it. Although it is recommended to prepare and sell rice-based food items, children do not like such foods due to the taste and food operators are compelled to mix wheat and rice flour to get the taste to satisfy the student demands.

5. Conclusions

5.1 Government hospitals

1. Policy environment is present with the availability of several national policies giving priority to the importance of consuming healthy foods in health promoting settings and highlighting the consequences of unhealthy diets especially in relation to sugar, salt and fats. A comprehensive circular (01-21-2015) on supply of diets to in-patients and minor employees in government medical institutions was issued by Secretary Health in 2015 which is applicable to all hospitals in the country including those under the central government and the provincial administration. The majority of the hospitals we contacted are following this circular.
2. In the above-mentioned circular in the "Diet scale sheets" the recommended sugar, salt and fat levels are given. There are 2 separate "Diet scale Sheets" for in-patients and minor employees. Most of the hospitals contacted use sugar, salt and fat within the WHO recommended level. If the salt consumption was found to be high that was when patient's diets and minor staff diets are cooked together.
3. Hospital canteens are outsourced, and the tender is awarded as per government guidelines. There is no standard agreement to be followed by all hospitals, therefore each hospital develop "an agreement".
4. Although the circular issued by Secretary Health on "Introduction of a healthy canteen in workplaces" gives the recommended standards to be used for sugar and salt it is not followed in the majority of the hospital canteens.

5.2 Private hospitals

1. Although the private hospitals have no general or individual policies or circulars on healthy food there is a concern on controlling sugar and salt.
2. Most private hospitals have "set menus" which use sugar and salt and fats which are above the recommended levels. Since patients pay for their meals and expect tasty food, the hospitals find it difficult to adhere to the recommended levels of sugar, salt and fats.
3. Some private hospitals have been able to manage to purchase salt and sugar and serve food within the WHO recommended amounts of sugar and salt. These are hospitals where there is a qualified Nutritionist is available. However, when sweet desserts be served then the sugar consumption goes up. To replace desserts with fresh fruits is costly.
4. Sugar consumption goes up when two sachets of sugar is served with the 2 teas (morning and evening) which means 10g of the recommended 25g is included in the 2 teas.

5. As a policy, one particular hospital was not serving unhealthy foods (fizzy drinks, red meat, processed meats) from the inception of the hospital. However, the retail food outlet sells fizzy drinks. The hospital

authorities cannot set rules and regulations to the retail outlets as they have been rented/leased on a business agreement.

5.3 Government School canteens

1. National policies, circulars and guidelines are available for procuring and providing food for government school canteens. Most of the school Principals are aware of the existence of policies and circulars. Providing foods recommended in the circular is a challenge.
2. School canteen tenders are offered as per the Government circulars. Agreements are signed using the government recommended agreement form given in the circular.
3. A survey revealed that school canteens are unable to serve foods that are recommended in the guidelines due to a variety of factors such as cost, students preferences, students and parents attitudes.
4. Only 26% of government schools have school canteens. The results of the evaluation done in 2019, using H 1306 tool on school canteens will throw light on the implementation of the latest school canteen circular.

6. Recommendations

6.1 Government hospitals

1. Since most government hospitals follow the General circular 01-21/2015, an evaluation is recommended by using a tool similar to the H 1306 which the FHB has developed for M&E of school canteens.
2. Steps should be taken to inform all hospitals to follow the Government circular 01-21/2015 which is very comprehensive. The circular no 01-17/2015 issued by Secretary Health should be updated.
3. It is necessary to educate the dieticians, diet clerks and the chefs/cooks on provision of quantities of sugar, salt and fat recommended in the circular by including the subject of sugar, salt and fat reduction in Continuous Professional Development programmes and develop a tool to regularly monitor adherence to the given standards.
4. Since some PDHS offices have also prepared circulars aligning with Secretary Health's circular it is best that these are reviewed and an updated one is prepared to be followed by all provinces.

6.2 Private sector hospitals

1. "Diet scale sheet" of the Government hospital circular could be shared with private hospitals as a guide to procure and provide sugar, salt and fats in their institutions.
2. Engage private sector hospital administrators in discussions on health-related matters especially pertaining to healthy diets.

6.3 Government schools

1. An in-depth study of the implementation of "school canteen policy" and the circulars is necessary with focus group discussions with end users such as students, parents and school Principals, teachers, canteen operators and the community. Inputs from the 2019 School Canteen Assessment using H1306 should also be taken into consideration and the circular should be updated with practical measures.
2. Authorities should ensure the availability of healthy, nutritious, safe and affordable foods in schools.
3. The evaluation of the implementation of school canteens should be done by a group of experts.
4. A team consisting of Medical officer of Health, Medical officer–NCD and Clinical nutritionists should be given the responsibility of maintaining healthy canteens in government hospitals and government schools.

6.4 General

1. Mass media campaigns should have targeted practical messages on "healthy foods" to suit school children, adolescents, adults and senior citizens.
2. There are several government policies, guidelines and circulars which have relevance to creating an enabling environment for procuring and providing healthy food in hospitals and canteens it is recommended to extract the ones relevant to salt, sugar and fat reduction and develop a user-friendly simple booklet for both government and private sector. Similarly, there should be a simple guide to schools extracting important policies and recommendations given in various circulars.

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