

FOOD CONSUMPTION PATTERNS OF URBAN ADOLESCENTS IN SRI LANKA: MOTIVES, BARRIERS AND IMPLICATIONS FOR HEALTHY EATING HABITS

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Research Report No: 269



September 2025

Hector Kobbekaduwa Agrarian Research and Training Institute
114, Wijerama Mawatha
Colombo 7
Sri Lanka

2025, Hector Kobbekaduwa Agrarian Research and Training Institute

First Published: 2025

ISBN: 978-624-5973-60-6

Food consumption patterns of urban adolescents in Sri Lanka: motives, barriers and implications for healthy eating habits / Roshini Rambukwella...[et al.]. - Colombo : Hector Kobbekaduwa Agrarian Research and Training Institute, 2025.
x, 69 p. : figures ; 29 cm. - (Research report ; No. 269)

ISBN 978-624-5973-60-6

i. 306.4613072 DDC 23

iii. Title

ii. Rambukwella, Roshini (Co.author)

iv. Series

1. Food-social aspects

2. Youth-food habits-Sri Lanka

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Final typesetting and lay-out by : Niluka Priyadarshani De Silva

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FOREWORD

Adolescence represents a pivotal stage in human development, where physical growth, cognitive capacity, and lifelong health behaviours are shaped. During this period, dietary practices play a crucial role not only in ensuring proper growth and development but also in preventing the early onset of chronic diseases. In Sri Lanka, as in many parts of the world, rapid urbanization, changing lifestyles, and the growing influence of fast-food culture have contributed to a concerning shift in the eating habits of young people.

This research study, focusing on the food consumption patterns of adolescents in Sri Lanka, provides timely and valuable insights into these emerging challenges. It sheds light on the complex interplay of factors—ranging from affordability, convenience, and peer influence to gaps in policy implementation—that drive adolescents’ dietary behaviours. The findings emphasize how the predominance of rice-based diets, the growing popularity of processed foods, and the limited intake of nutrient-rich foods collectively pose significant threats to adolescent health.

By employing a rigorous mixed-methods approach and drawing on evidence from both government and private schools, this study makes an important contribution to understanding the barriers and enablers of healthy eating. It highlights the urgency of a coordinated, multi-stakeholder response involving schools, parents, policy-makers, and communities to reshape the food environment for the younger generation.

I believe this report will be a valuable resource for educators, health professionals, researchers, and policymakers alike, as it provides evidence-based recommendations for fostering healthier dietary practices among adolescents. More importantly, it calls for collective action to safeguard the wellbeing of Sri Lanka’s youth, who represent the foundation of the nation’s future.

I commend the research team for their dedication and effort in addressing this critical issue and trust that the findings and recommendations presented here will inspire meaningful interventions and informed policy decisions.

Prof. A.L. Sandika
Director/Chief Executive Officer

ACKNOWLEDGEMENTS

As the research team, we extend our sincere gratitude to Prof. A.L. Sandika, Director/Chief Executive Officer, and Dr. G.G. Bandula, former Director of the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI), for their invaluable guidance and support throughout the study and until its publication. Our heartfelt appreciation also goes to the two external reviewers, Dr. Thimathi D. Wickramasekara, Head of the Department of Nutrition, Medical Research Institute, and Dr. Sumali N. Fernando, University of Ruhuna, for their encouragement and insightful recommendations.

We gratefully acknowledge the cooperation extended by the Secretary and Additional Secretary of the Ministry of Education, along with the Provincial Education Directors of the Western and Central Provinces, for granting approval to conduct the school survey. We also extend our appreciation to the principals and teachers of the selected government and private schools who supported data collection, as well as the canteen staff and parents for providing valuable information. Our deepest gratitude goes to the school-going adolescents who willingly participated in the questionnaire survey.

Special thanks are due to Ms. Mayumi Apsara, Ms. Priyantha Liyanaarchchi, Ms. Nirosha Malkanthi, Ms. Kushani Rajakaruna (Statistical Assistant, HARTI), Ms. Nimali Siriwardhana, and Ms. Lakmini Wijerathna, investigators of the study, for their tireless efforts in data collection and field coordination. We also appreciate the dedicated assistance of the office secretaries, Ms. K.A.S. Geethani and Ms. U.N.M. Aluwihare, as well as the staff of the Food Systems Division and the Data Management Division of HARTI for their immense support.

Our gratitude further goes to Mr. S. Rameshwaran, External Editor, for language editing, and to Ms. L.A.K.C. Dahanayaka, Assistant Registrar (Programme), and the Programme Unit, HARTI, for administrative facilitation. We also thank Mr. S.A.C.U. Senanayake for proofreading, Ms. Niluka Priyadarshani for page setting, and Ms. Udeni Karunaratne for cover design. Finally, we extend our appreciation to the staff of the Information and Communication Division of HARTI for their contribution in printing and publishing this report.

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EXECUTIVE SUMMARY

Adolescence is a critical stage for establishing long-term health, as dietary habits during this period significantly influence growth, cognitive development, and the risk of chronic diseases. In Sri Lanka, urban adolescents are shifting from traditional, nutrient-rich diets to unhealthy processed and fast foods. This dietary transition has led to increased consumption of junk food, sugary beverages, and high-fat snacks, contributing to rising rates of obesity, diabetes, and cardiovascular diseases. Despite various initiatives, unhealthy eating habits among adolescents persist due to factors such as affordability, convenience, aggressive marketing of fast food, and a lack of nutrition education. Existing school canteen guidelines and government interventions have not effectively addressed these challenges. Additionally, there is a lack of comprehensive research on the specific dietary habits, influences, and barriers faced by Sri Lankan adolescents.

This study aims to examine the food consumption behaviours and patterns of adolescents in Sri Lanka and to explore strategies and policies to promote healthier eating habits. A mixed-methods approach was employed, collecting data from 463 students aged 14–19 years across government and private schools in Colombo, Gampaha, and Kandy. Key Informant Interviews with school principals, teachers, canteen staff, regulatory officials, and parents provided deeper insights. The study used structured questionnaires, a seven-day food diary, and a Likert scale to assess factors influencing adolescents' dietary choices.

The findings reveal that the diets of students is profoundly based on rice and cereal-based foods, with low daily intake of fruits, vegetables, and pulses. Junk food and sugary beverage consumption is rising. Over 50% of students regularly skip meals, particularly breakfast, due to busy schedules and lack of interest. It was found that around 80% of students snack daily, with government school students choosing cheaper, less nutritious snacks. Additionally, government school students engage in less physical activity due to academic pressures, whereas private school students tend to be more physically active.

Various factors influence adolescents' dietary choices, including personal attributes such as convenience, taste, emotional satisfaction, and limited nutritional knowledge. The school environment plays a significant role, with poor adherence to healthy eating initiatives, ineffective canteen committees, and a lack of structured nutrition programmes. Social influences, particularly peer pressure and social media trends, also shape adolescents' food preferences. Economic factors are decisive, with 65.2% of students considering cost as a major consideration in their food choices, while cultural and religious influences have a relatively minor impact.

Barriers to healthy eating stem from structural, social, cultural, and individual challenges. Structural barriers include inadequate policies, urbanization, and the widespread presence of fast-food chains, which undermine healthy eating initiatives. Social and cultural factors, such as negative perceptions of traditional foods and

competition from unhealthy food vendors, further influence dietary behaviours. At the individual level, limited nutrition awareness and shifting societal norms — such as increased workforce participation — contribute to a growing reliance on processed foods.

The research highlights significant gaps in adolescents' dietary habits, including excessive consumption of unhealthy foods and insufficient intake of essential nutrients. Despite efforts to promote healthier options, external factors such as parental influence, peer pressure, and economic constraints continue to undermine these initiatives. A comprehensive, multi-stakeholder approach involving schools, parents, communities, and policymakers is essential to fostering a supportive environment that encourages healthier dietary behaviours among Sri Lankan adolescents.

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ABBREVIATIONS

A	- Agree
D	- Disagree
FST	- Food System Typology
FV	- Fruit and Vegetables
NAD	- Neither Agree nor Disagree
NCD	- Non – Communicable Disease
SA	- Strongly Agree
SD	- Strongly Disagree
SSB	- Sugar – Sweetened Beverage
WHO	- World Health Organization

CHAPTER ONE

Introduction

1.1 Research Background

Food is one of the basic requirements that play a vital role in human life. The food choices of individuals significantly influence health, with dietary habits being a crucial factor. These choices have a major impact on the overall well-being and health of young people, particularly influencing their growth and cognitive development. Many studies (Rathi et al., 2017; 2013; Chan., 2009; and Beal et al., 2019) have shown that risk factors of chronic disease conditions such as overweight, obesity and high levels of serum cholesterol often begin in early youth. Therefore, adopting healthy dietary habits during adolescence can reduce the risk of developing chronic conditions later in life. The dietary behaviours of young individuals represent a multifaceted public health concern, encompassing socio-cultural beliefs, food affordability and accessibility, body image concerns, and eating disorders (Perera et al., 2017).

What people eat is one of the key factors that influence their health. Dietary habits contribute to an overall health and well-being of young people, especially in supporting their growth and cognitive development. Food is intertwined with the culture of the country, personal preferences, income levels, socio-economic patterns, commodity prices, beliefs, etc. In most Asian countries, meals are typically prepared at home rather than dining out.

Many low and middle-income countries are now transitioning to diets high in added sugars, unhealthy fats, salt, and refined carbohydrates (Kaushik et al., 2011). The culture of fast food as well junk food is an emerging trend among the younger generation worldwide. Factors such as easy availability, taste, affordability, marketing strategies, and peer pressure contribute to their growing popularity particularly among children and adolescents. Unhealthy foods are those that lack essential nutrients and are high in harmful fats, calories, and additives. Junk food, fast food, and instant food items fall into this category. These items do not provide the essential nutrients in the right proportions, increasing the risk of various health issues (Kaushik et al., 2011). The term 'junk food' refers to foods and drinks low in essential nutrients such as protein, vitamins, minerals, and fiber, and high in energy, saturated fats, added sugars, and/or salt, often containing additional additives.

Historically, the Sri Lankan diet consisted of healthy foods such as jackfruits, breadfruits, whole grains, legumes, and domestic tuber roots, which were free from artificial chemicals that are harmful to the body (Bandara et al., 2021). Nevertheless, a significant change in food consumption patterns in Sri Lanka can be attributed to the evolution of the economic and demographic transition of the country in recent times. As well, food consumption also plays an important role in national income, influencing the quantity/expenditure and quality/health factor of food consumed by

people. The most important question is whether consumers change their food consumption patterns with increasing income levels, rapidly changing global food prices, urbanization and structural transformation within countries (Pallegedara, 2019).

According to Rathnayaka et al. (2019), it is important for government policymakers to analyze the consumption patterns when planning the country's economic strategies. The traditional diet of Sri Lanka is highly diversified and provides several benefits such as prevention of non-communicable diseases (NCDs) and protection against micronutrient deficiencies (Weerasekara et al., 2020). Due to the health and nutritional value of traditional foods, these are increasingly being recommended and provided to adults, children, patients, and pregnant women (Ravindren, 2020). The data published in 2005 states that the prevalence of diabetes is high and disproportionately distributed amongst the population, where females account for 13.5% and 14.2% of the males, respectively (Katulanda et al., 2009). The local campaigns to combat NCDs see the Sri Lanka government create an initiative about the National Food Act of 1980 and implement the "Food Traffic Light Labelling System" in response to the health concerns imposed by the food industry (Hettiarachchi et al., 2021; Katulanda et al., 2009). The food traffic light labelling system is based on colour coding based on the amount of sugar in any product; the red code is referred to as a high sugar level, which accounts for >11g, and the amber code represents a moderate amount of sugar level from 2g-11g whereby green code indicates a safe amount of sugar level at this stage (Katulanda et al., 2009).

Adolescence, the phase between childhood and adulthood, from ages 10 to 19 is a unique stage of human development and a crucial time for establishing good health. During this period, adolescents experience rapid physical, cognitive and psychosocial growth. Dietary patterns formed during adolescence influence nutritional status later in life (Bhargava et al., 2020). Research also shows that poor eating habits and low physical activity in childhood can lead to health problems such as obesity, heart diseases and osteoporosis during adulthood. Skipping breakfast is also common among the adolescents (Bhargava et al., 2020).

Adolescence represents a window of opportunity to shape eating habits and nutritional status, with lasting effects on future health outcomes. Additionally, since adolescents are generally more discerning and independent in their food choices compared to younger children, they are an ideal target group for this study.

1.2 Problem Statement and Justification

Globally, countries that once followed healthy dietary traditions are increasingly adopting poor eating habits, creating significant socio-economic challenges. The rising intake of high-fat, low-fiber, and heavily processed foods often high in sugar, salt, and saturated fats has been linked to a growing prevalence of health issues such as childhood obesity, hypertension, dyslipidemia, and impaired glucose tolerance. According to the World Health Organization (2015), poor dietary practices, alongside

smoking, physical inactivity, alcohol misuse, and stress, are key contributors to non-communicable diseases (NCDs). Among these, an unhealthy diet has emerged as a particularly influential behavioural risk factor, as supported by numerous studies (Campos et al., 2020).

In recent years, economic development, urbanization, changes in occupational structures, increased workforce participation by women, the growth of processed food companies/manufacturers, and technological innovations have led to shifts in human food consumption patterns (Kennedy and Reardon, 1994; Pingali, 2007; Popkin and Gordon, 2004; Regmi and Dyck, 2001). The World Health Organization (WHO) has called for stricter controls on marketing unhealthy foods and beverages to children. Some progress has been made in this endeavour, and it has been reported that a few countries in the ASEAN region have policies that adequately protect children from unhealthy food marketing. According to WHO, targeted interventions aimed at adolescents are recommended to improve food behaviours. Today the traditional food system of Sri Lanka is gradually changing (Weerasekara et al., 2020). As a result, it is already experiencing various adverse health effects, which are expected to increase over time. Dietary diversity is defined as a qualitative measure of food consumption that reflects household access to a variety of foods, and serves as a proxy for the nutrient adequacy of an individual's diet. Both international and local guidelines recommend that dietary diversity should be enhanced unless otherwise it can increase the risk of chronic diseases and malnutrition associated with food. Moreover, dietary diversity is essential for meeting energy requirements and obtaining other essential nutrients (FAO, 2011).

Sri Lanka has a rich dietary diversity that dates back to ancient times (Weerasekara et al., 2020). However, as noted earlier, urbanization, changing lifestyles, and shifting food preferences have altered food production, and dietary habits leading to health and nutrition-related problems. Globally, the consumption of high-fat diets, processed foods, and low fiber foods is on the rise. Currently, NCDs account for about 70% of global deaths, most of which are reported from developing countries (WHO, 2014). Chronic diseases are on the rise in Sri Lanka, primarily driven by changes in diet and lifestyle and rapid westernization (WHO, 2014).

Lifestyle in Sri Lanka has changed drastically over the last two decades due to economic and technological developments. In this context, analyzing changes in food consumption patterns in Sri Lanka is relevant and significant for several reasons (Pallegedara, 2019). Urbanization directly affects food consumption patterns (Hawkes, 2006). Additionally, changes of the fast-food industry, with its low-cost delivery and attractive deals, influences consumption by providing quick access to cheap foods. These foods contain high in salt, fat, and sugar (Smil, 2002). The nutritional value of such food is questionable, and their increased consumption has contributed to rising rates of overweight and obesity (Janssen et al., 2018).

Adolescents' food habits are important determinants of both their present and future health. In developed countries, adolescents often consume high amounts of

energy-dense, nutrient-poor foods while their intake of fruits and vegetables remains inadequate. In addition, they also commonly exhibit unhealthy eating behaviours such as skipping meals and frequent snacking on fast foods (Rathi et al., 2017).

Dietary choices can vary depending on what foods are available, affordable, promoted and/or convenient in the food environment. This is especially important for adolescents, who are more vulnerable due to their age. Food choices made during adolescence can form habits that affect their future health.

Generally, the dietary habits of young people are a complex public health concern influenced by socio-cultural beliefs, affordability and availability of healthy foods, body image and eating disorders. Even though the relationship between diet and health is well understood, and many countries have introduced and implemented health promotion campaigns, most young people still maintain poor dietary habits.

Diet and food preferences of young people are influenced more by social, economic, environmental and cultural factors than by health concerns. Although the traditional Sri Lankan diet contains plenty of vegetables and rice, but the dietary behaviours have drastically transformed during the last few decades as a result of socio-cultural, epidemiological, demographic and economic transitions occurred in the country (Bandara et al, 2021).

Surprisingly, Perera et al., (2017) found that a significant proportion of both young men and women in Southern Sri Lanka exhibit unhealthy dietary behaviours. The availability of fast foods, combined with the busy lifestyles of students and their parents, may prevent them from paying adequate attention to healthy eating.

The food-based dietary guidelines of the Ministry of Health in Sri Lanka proposed that people need to diversify their daily diet in order to increase their intake of macro and micro-nutrients for a healthy life. These guidelines target the general population, and include recommendations for different groups. According to that, there are specific nutrient needs of adolescents (10 – 19 years) as their period is characterized by the onset of puberty associated with rapid growth.

During this period, adolescent needs a lot of energy, protein, calcium and iron to support the growth of bone and muscle. Through this strategy, the Ministry of Health aims to increase fruit and vegetable consumption among schoolchildren and reduce the future burden of chronic diseases (Ministry of Health, 2011). The Ministry also notes a rising trend of children and adolescents buying food from outside sources, which often leads to poor choices such as oily bakery products, soft drinks, savory snacks, and crisps. These habits reduce the intake of nutritious food and contribute to nutrition-related problems such as obesity and micronutrient deficiencies (Ministry of Health, 2011).

As noted earlier, the Sri Lankan diet is shifting from traditional food consumption to fast and processed foods, posing a significant threat to the country's future food security and sustainability (Bandara et al., 2021). Approximately 27% of adults in Sri Lanka consume high salt processed foods, and urban people spend 18% of their total food expenditure on processed foods (Weerahewa et al., 2018). Chronic diseases are on the rise in Sri Lanka, mainly triggered by changes in diet and lifestyle and rapid westernization (Senanayake, 2009).

Unhealthy dietary habits can lead young people to become obese and subsequently obesity would put them at risk of developing depression, suicidal ideation and chronic physical illnesses. The availability of fast foods, combined with busy lifestyles of students and their parents, may prevent them from paying adequate attention to healthy eating. Currently Sri Lanka faces a double burden of under- and over-nutrition among its child and adult populations (Wickramasinghe et al., 2013; Katulanda et al., 2009).

In countries such as Singapore and Hong Kong, street food is strictly monitored for health and safety. However, in Sri Lanka, advertisements for such foods are freely displayed in print and electronic media, with little oversight from the food regulators and authorities, including the Consumer Affairs Authority. The National Nutrition Policy of Ministry of Health states that children suffer from various nutritional deficiencies, primarily due to poor dietary practices. A lack of healthy and nutritious food affects learning and leads to nutritional problems such as underweight, stunting, overweight and obesity may also contribute to non-communicable diseases such as heart disease, diabetes, cancer and dental problems.

Furthermore, the National Nutrition Policy emphasizes the importance of instilling healthy eating habits in schools and ensuring that, instead of instant foods and carbonated drinks, everyone consumes an adequate amount of quality food. To support this, Sri Lanka introduced school canteen guidelines in 2007 to promote healthy food choices among school children. This initiative aims to provide nutritious, culturally acceptable food at affordable prices within the school premises. To achieve this, a circular outlining specific guidelines for the foods sold in school canteens, highlighting which foods are safe and suitable for school children to ensure their well-being (Circular No. 2007/2 of 2007.01.10 and Circular No. 2011/03 of 2011.01.18). However, having a canteen policy does not guarantee that intended outcomes; effective implementation is essential to achieve the intended results.

Improving the understanding of school authorities and canteen operators about healthy food for proper implementation. Some common dietary patterns among adolescents include frequent snacking, usually on energy-dense foods; skipping meals particularly breakfast irregular times, widespread consumption of fast food; and low intake of fruits and vegetables (Kubik et al., 2003). Considering all these factors, it is evident that food consumption habits are linked to many chronic diseases, making it important to understand changes in dietary patterns among adolescents.

Since poor diet adversely affects all age groups, especially children and adolescents, who are particularly vulnerable, it is urgent to prioritize the implementation of healthy-diet promotion programmes to improve their health, particularly in developing countries (Kelly et al., 2019).

Given the rapid growth of the unhealthy food sector in Sri Lanka and its popularity along with the potential health risks of frequent consumption, it is important to design effective nutrition education programmes for younger people, who are the future of the nation. According to the future research strategic plan of the Department of Nutrition at the Medical Research Institute (MRI), the prevalence of under nutrition (including underweight, wasting and stunting) among children in Sri Lanka has remained stagnant over the past few decades.

Meanwhile, the prevalence of overweight, obesity and related non-communicable diseases among children are rising sharply in Sri Lanka. This double burden of malnutrition affects the well-being of children and future adults, making it crucial to identify the underlying causes and risk factors. To address this, a thorough understanding of current food consumption patterns and behaviours among adolescents, as well as the potentials and barriers to adopting a healthy diet, needs to be analyzed.

There is a severe shortage of scientifically sound information on dietary habits and the factors influencing sustainable diets among young people in Sri Lanka as well relatively little research has been carried out on adolescents' food consumption patterns and behaviour change. Accordingly, now is an appropriate time to explore and better understand the changes and determinants of food consumption patterns among Sri Lankan adolescents.

Furthermore, the study's findings and recommendations will indirectly support increased consumption of agricultural products. Based on the data analysis, clear and actionable suggestions will be developed for policymakers, educators, and healthcare professionals. Several studies have explored the disease burden in Sri Lanka, particularly in relation to diet-related conditions such as diabetes, cardiovascular disease, and obesity (Katulanda et al., 2012). However, there is lack of research investigating on dietary habits and the determinants of sustainable diets in young people in Sri Lanka (Perera et al., 2017).

Although many development programmes exist across the country, few actively engage communities to identify the challenges they face in promoting health and nutrition. This study bridges that gap by working directly with students and school principals to assess the influences and barriers shaping students' dietary choices, providing valuable insights for designing targeted interventions.

Research Questions

- i. What are the current food consumption patterns among adolescents in urban areas in Sri Lanka?
- ii. Which factors influence the food choices of urban adolescents?
- iii. What are the key motives and barriers that affect the adoption of healthy diet among urban adolescents?
- iv. What kinds of strategies and policies encourage healthy eating habits among adolescents?

1.3 Objectives

1.3.1 General Objective

To investigate the food consumption behaviours and patterns among adolescents in Sri Lanka and to explore strategies and policies that promote healthy eating habits within this group.

1.3.2 Specific Objectives

- i. To examine the food consumption pattern among urban adolescents
- ii. To identify factors which influence food choice of urban adolescents
- iii. To identify motives and barriers to achieving a healthy diet among urban adolescents
- iv. To explore strategies and policies for promoting healthy eating habits

1.4 Limitations of the Study

This study has several limitations that should be acknowledged. First, food consumption data were based on self-reported intake over a one-week period, which may not fully capture the participants' habitual dietary patterns due to recall bias or short-term variability. Second, several international schools declined participation, limiting the diversity and representativeness of the sample. Additionally, data collection was confined to school hours, restricting the time available for administering the survey and gathering comprehensive information.

1.5 Organization of the Report

This report is organized into eight chapters. **Chapter One** introduces the study, outlining its background and objectives of the study. **Chapter Two** reviews the existing literature on adolescent food consumption trends and patterns, food habits, preferences, food choices, and the opportunities and barriers to healthy diets. **Chapter Three** discusses the key concepts and examines the factors influencing food consumption among urban adolescents. **Chapter Four** describes the research methodology and study locations. **Chapter Five** presents the observed food

consumption patterns among urban adolescents in Sri Lanka, while **Chapter Six** explores their food habits, preferences, and choices. **Chapter Seven** identifies potential enablers and barriers to achieving healthy diets. Finally, **Chapter Eight** summarizes the key findings and offers conclusions and recommendations for promoting healthy dietary practices among urban adolescents.

CHAPTER TWO

Review of Literature

2.1 Trends and Patterns of Food Consumption by Adolescents

2.1.1 Global Adolescent Dietary Patterns and Health Implications

A global meta-analysis by Beal et al. (2019) highlighted the generally unhealthy diets of school-going adolescents, characterized by low fruit and vegetable intake and high consumption of carbonated soft drinks. Particularly, South and East Asia showed infrequent fruit consumption, while high-income countries reported the highest intake of carbonated beverages. The study also found that increasing income levels and Food System Typology (FST) were associated with higher soft drink consumption. Adolescents, especially in Europe and North America, consumed more added sugars than any other age group. Additionally, street foods, often unhealthy, are becoming increasingly common in urban areas of Latin America, Asia, and Africa.

The study concluded that adolescents are unlikely to be motivated by long-term health concerns, highlighting the need for creative, value-driven interventions. Recommended measures include taxing sugar-sweetened beverages and implementing targeted policies that address dietary needs based on region and income level.

2.1.2 Regional Insights into Adolescent Food Consumption

In India, a study by Rathi et al. (2017) focusing on urban adolescents aged 14–16 in Kolkata revealed frequent consumption of energy-dense, nutrient-poor foods and sugar-sweetened beverages. The survey also revealed a lack of healthy food intake, placing adolescents at risk of chronic diseases. The authors recommended introducing school food policies and food literacy curricula as public health strategies to address unhealthy dietary trends among India's 238 million adolescents.

In Sri Lanka, food consumption habits have shifted from traditional rice and curry meals to fast foods and sugary beverages, driven by socio-economic and demographic changes (Siriwardhane et al., 2024). While traditional Sri Lankan foods once held significant therapeutic and nutritional value, modern lifestyles and the erosion of traditional knowledge have diminished these practices (Mihiranie et al., 2020). As a result, the country now faces a dual burden; although under nutrition has declined, obesity and non-communicable diseases are on the rise (Samaranayaka et al., 2013).

2.1.3 Socio-cultural and Psychological Influences on Adolescent Eating Behaviour

Food is not only a source of nourishment but also a social symbol and cultural marker, shaped by globalization, urbanization, and local traditions. Yadav (2020)

highlighted Robert Redfield's concepts of 'little' and 'great traditions' to explain diverse eating patterns. Adolescents' food choices are influenced by family practices, socialization, and symbolic meanings, rather than solely by nutritional considerations.

Meal patterns, such as eating together as a family, have been shown to improve dietary quality. However, certain mealtime environments such as watching TV while eating are linked to lower diet quality among adolescents (Tumin et al., 2017; Overcash et al., 2020). While home-cooked meals generally contain fewer ultra-processed foods, convenience foods quick, pre-prepared still dominate due to time limitations. These foods are typically higher in saturated fats, sugar, and sodium (Wolfson et al., 2024).

2.1.4 Economic Factors and Access to Healthy Foods

Economic status is a key factor influencing food choices. Research shows that low-income populations often prioritize cost over nutrition. Healthy foods such as fruits, vegetables, and meats are often perceived as expensive, leading individuals to choose less nutritious alternatives (Darmon et al., 2015).

Headey and Alderman (2019) demonstrated that in many low-income countries, nutritious foods such as eggs and fresh milk are significantly more expensive than calorie-dense staples. Even in countries with strong local production, economic access remains a major barrier. Caswell et al., 2013 further noted that geographical factors such as living in rural vs. urban areas and the availability of supermarkets also influence food access. Processed foods are often more accessible and affordable due to lower production costs and longer shelf life, which contributes to poor dietary outcomes.

2.1.5 Marketing, Consumer Behaviour, and Adolescent Influence

Adolescents and children have become key influencers in household food purchases. As noted by Sharma and Sonwaney (2014), their influence extends beyond personal-use items to significant family decisions (Singh and Kumar, 2016). The "tween" demographic (8–12 years) is particularly targeted by marketers aiming to shape family buying behaviour through brand loyalty and peer influence (Nolcheska, 2020).

External pressures such as marketing strategies, food availability, and financial constraints often limit healthy food choices, particularly in low-income families. Ravikumar et al. (2022) observed that although parents strive to provide nutritious diets, they are frequently hindered by broader socio-economic factors. Therefore, effective interventions must address these structural challenges in addition to offering nutritional education.

2.2 Food Habits, Preferences and Food Choice by Adolescents

2.2.1 Global Shifts and Dietary Risks

Over the past 40 years, global food systems have undergone significant changes. In addition to providing nutrition, diets have shifted toward processed and ultra-processed foods, with larger portion sizes and more meals prepared outside the home (Tumilowicz et al., 2019). As a result, consumption of sodium, unhealthy fats, and sugars has increased, while intake of vegetables, legumes, and coarse grains has declined (Gorski et al., 2015).

A major concern is the dramatic rise in Sugar-Sweetened Beverage (SSB) consumption. In the U.S., SSB intake tripled between 1970 and 2001, and similar trends are emerging in China, India, and Southeast Asia. SSBs are strongly associated to obesity, diabetes, dental caries, and heart disease (Tumilowicz, 2019). Today, over two billion people worldwide are overweight or obese, while under nutrition still accounts for 11% of the global disease burden.

2.2.2 Cultural Influences and Identity

Food is more than just nutrition it is a cultural artifact. Scholars like Mintz and Du Bois (2002), and Kittler et al. (2011) emphasize that food reflects social norms, values, and traditions. Understanding the cultural meaning of food is vital for developing effective food policies (Alonso et al., 2018).

Cultural practices encompass not only what is eaten, but also how, when, and why (Monterrosa et al., 2020). These choices are influenced by social contexts, beliefs, and identities. However, transitions in life such as illness can create tension between traditional food ideals and modern health recommendations, often causing emotional or cultural conflicts (Devine et al., 1999).

2.2.3 Snack Foods and Food Processing

Processed snacks make up a significant part of adolescent diets, yet little is known about their preferences across different levels of food processing. Understanding these preferences can help guide the development of healthier snack options for youth (Svisco et al., 2019).

2.2.4 Adolescence and Food Decision-making

Adolescence is a critical period for shaping long-term habits. During this stage, food choices are influenced not only by health concerns, but also by body image and physical appearance. Alongside this, taste, price, and convenience remain key factors in food selection (Daly et al., 2022).

As adolescents become more independent, their eating habits are increasingly influenced by peers and social norms, although family and home environments continue to play a significant role.

2.2.5 Taste Preferences and Sensory Influences

Taste preferences are influenced by genetic, physiological, and metabolic factors, which can vary by age, sex, and health conditions such as obesity or eating disorders. Socio-economic status also affects food access and choices (Drewnowski, 1997). Nutrition education must take into account these sensory and social influences when promoting healthy eating among adolescents.

2.3 Potentials and Barriers for Healthy Diets for Adolescents

2.3.1 Barriers and Facilitators to Healthy Eating

Adolescents face a mix of barriers and enablers to healthy eating, often influenced by gender differences. Key barriers include poor quality school meals, easy access and affordability of fast food, and personal taste preferences. In contrast, facilitators involve family support, greater availability of healthy foods, a desire to maintain physical appearance, and personal willpower (Shepherd et al., 2006).

However, friends and teachers were found to have minimal impact as sources of nutritional information. While some of these issues have been addressed through evaluated interventions, gaps still exist particularly in areas like effective food labeling and increasing access to affordable healthy food options in environments frequented by adolescents. There is also a need for methodologically robust evaluations of current health promotion strategies.

2.3.2 Peer Influence and the Role of Social Media

Peer groups play a significant role in shaping adolescents' food choices through social norms and peer pressure. While the impact of face-to-face interactions within peer networks on health behaviours is well documented, the influence of social media on adolescent eating patterns remains less explored (Chung et al., 2021). Despite this, social media is emerging as a highly effective platform for reaching adolescents, who are often resistant to traditional public health messaging. Through strategic campaigns, social media offers opportunities to inform, engage, and influence adolescent behaviours towards healthier eating habits. Synthesizing the three major sections reveals a clear research gap; while some aspects have been studied, there is a critical need for locally grounded, culturally sensitive, and adolescent-centered research in Sri Lanka. This research should explore cultural food norms alongside modern influences such as peer pressure and social media in shaping adolescent food consumption. Addressing this gap will support the development of targeted, effective, and culturally appropriate interventions.

CHAPTER THREE

Conceptual Framework

This chapter presents the conceptual will support the development of food consumption patterns are shaped by a complex interplay of social, economic, environmental, and individual factors. Central to this framework is the understanding that adolescence is a critical developmental stage during which lifelong dietary habits are often established. These habits are influenced not only by individual preferences and the household food environment but also by broader societal trends and transitions.

Globally, food and nutrition systems are undergoing a significant transformation, commonly referred to as the nutrition transition (Popkin et al., 2012). This transition involves a shift from traditional diets rich in whole foods to more Westernized eating patterns that are high in processed and energy-dense, nutrient-poor foods. This phenomenon is particularly evident in developing countries experiencing rapid urbanization, economic growth, and increased exposure to global food markets (Gill et al., 2015; Bielemann et al., 2015).

Adolescents are especially vulnerable during this nutrition transition due to the influence of peers, media, and evolving cultural norms. Their food choices are often shaped by both internal motivations, such as body image, taste preferences, as well as external pressures like advertising, social trends (Nicola, 1992). These factors make adolescents a key group for studying emerging food consumption patterns, especially in societies undergoing socio-economic and technological change.

This conceptual framework integrates perspectives from behavioural nutrition, public health, and developmental psychology to understand the multiple dimensions influencing adolescent dietary behaviours. It provides a foundation for exploring how macro-level changes interact with individual-level factors to shape food choices this demographic group.

3.1 Individual Factors Influencing Food Choice of Adolescents

Gender: Male students in grades 9–12 were more likely than those in grades 7 and 8 to report visiting a fast food outlet three or more times in the previous week, whereas school grade had no significant effect on fast food visits among females. Both male and female students who reported eating at a fast food restaurant three or more times in the past week had energy intakes that were 40% and 37%, higher, respectively, than those who did not frequent fast food outlet (French et al., 2001).

Household Income: Food purchase patterns at the household level provide insights into factors influencing individual food intake. Lower-income households tend to purchase fewer fruits and vegetables than higher-income households do and are

more likely to frequent fast food restaurants instead of full-service restaurants (French et al., 2010).

Education: education level of the household head can significantly influences knowledge of child nutrition, household income, and overall awareness of children and other family members about healthy food choices (Siriwardhane et al., 2024). In households where the primary breadwinner has a higher education level, there tends to have greater understanding of nutritional needs and healthier dietary practices. However, studies have shown mixed results regarding the impact of female education on food allocation. Some research indicates that households with more educated heads may allocate less meat to women than to men, indicating a gendered approach to food distribution based on education level (Harris-Fry et al., 2017). Other studies have found no significant association between female education and food allocation (Harris-Fry et al., 2017).

Family Size: Despite both partners in a family being employed, women typically spend more time on household duties, especially when children are present. The arrival of children tends to disrupt any initial gender egalitarianism within the household, often resulting in an imbalance in domestic labour. Furthermore, the nutritional risk is higher among children in larger families (Flagg et al., 2014).

Residence: Geographical location significantly influences food selection and dietary habits, shaped by cultural values, socio-economic conditions, and other social-environmental factors (Samaniego-Vaesken et al., 2018).

Ethnicity: Ethnic background and religious beliefs can influence food allocation within households. For example, in some religious contexts, women may receive less food because they observe fasting more strictly than men (Harris-Fry et al., 2017). Studies have also found differences in nutrient intake ethnic groups, although findings are mixed; some research suggests that European Americans tend to have healthier eating habits compared to African Americans (Deshmukh-Taskar et al., 2007).

Health Status: A variety of individual factors influence food choices, including psychological factors like attitudes and beliefs, biological factors such as hunger, and behavioural patterns such as meal timing. Lifestyle factors such as the perceived cost and convenience of healthy foods also play an important role (Story et al., 2002).

Family Type: Family influences adolescents' food choices both by directly providing food and by shaping their food-related attitudes and preferences. As adolescents gain more independence, their food choices reflect a shift in parental influence (Story et al., 2002). Barriers to family mealtime, such as school and extracurricular activities, often lead to unhealthy eating habits. Additionally, adolescents' desire for greater autonomy may lead to less healthful dietary choices (Fitzgerald et al., 2010).

3.2 Environmental Influences on Food Consumption and Food Choice

Over the past few decades, the food and home environments have changed significantly. Environmental influences on eating behaviours include the evolving food supply; increased reliance on foods consumed outside the home; food advertising, marketing, and promotion; and food pricing (French et. al., 2001). Furthermore, the rise in dual-income households has made time constraints a major factor in food choices. In response, the food industry has expanded the availability of convenience foods and ready-made meals (Schluter and Lee 1999). Portion sizes have also increased over the past two decades (French 2003), along with the per capita availability of added sugars and fats (French et. al., 2001).

Market Access and Availability: Access to organic foods and their affordability are key determinants of consumer choices. The location of point-of-sale outlets also influences food availability (Wadsworth et al., 2007). For example, the presence of a street market near adolescents' households (within a 500 m buffer) was associated with higher fruit and vegetable (FV) consumption. Regardless of market density or buffer size, family income per capita the above minimum wage correlates positively with increased FV consumption. Therefore, public policies aiming to boost FV consumption among adolescents should consider both income levels and the availability of nearby street markets (Nogueira et.al., 2018).

Peer influence: Peer groups significantly influence food choices, especially during shared meals. Research indicates that adolescents are affected by their friends eating habits, often leading to unhealthy dietary behaviours (Larson & Story, 2009). Additionally, social connections to peers with higher body mass indices (BMI) may elevate the risk of obesity among adolescents (Chen & Antonelli, 2020).

Media and advertisements: Adolescents are exposed to food marketing through various channels, including television, movies, videos, print media, online games, and social media. Advertising various channels images, videos, and interactive games promoting specific brands (Harris et al., 2009; Powell et al., 2013; Brag et al., 2018; Tsochantaridou, 2023). However, in teenagers, external distractions such as media sources may not influence food intake as strongly as in adults, possibly due to different conditioned responses or habituation (Péneau et al., 2009).

Government/Health Policy and Regulations: Government policies, especially within school environment significantly influence food choices. For example, school meal programmes are required to meet specific nutritional standards, however, competitive foods sold outside these programmes often do not comply with the same guidelines (Larson & Story, 2009).

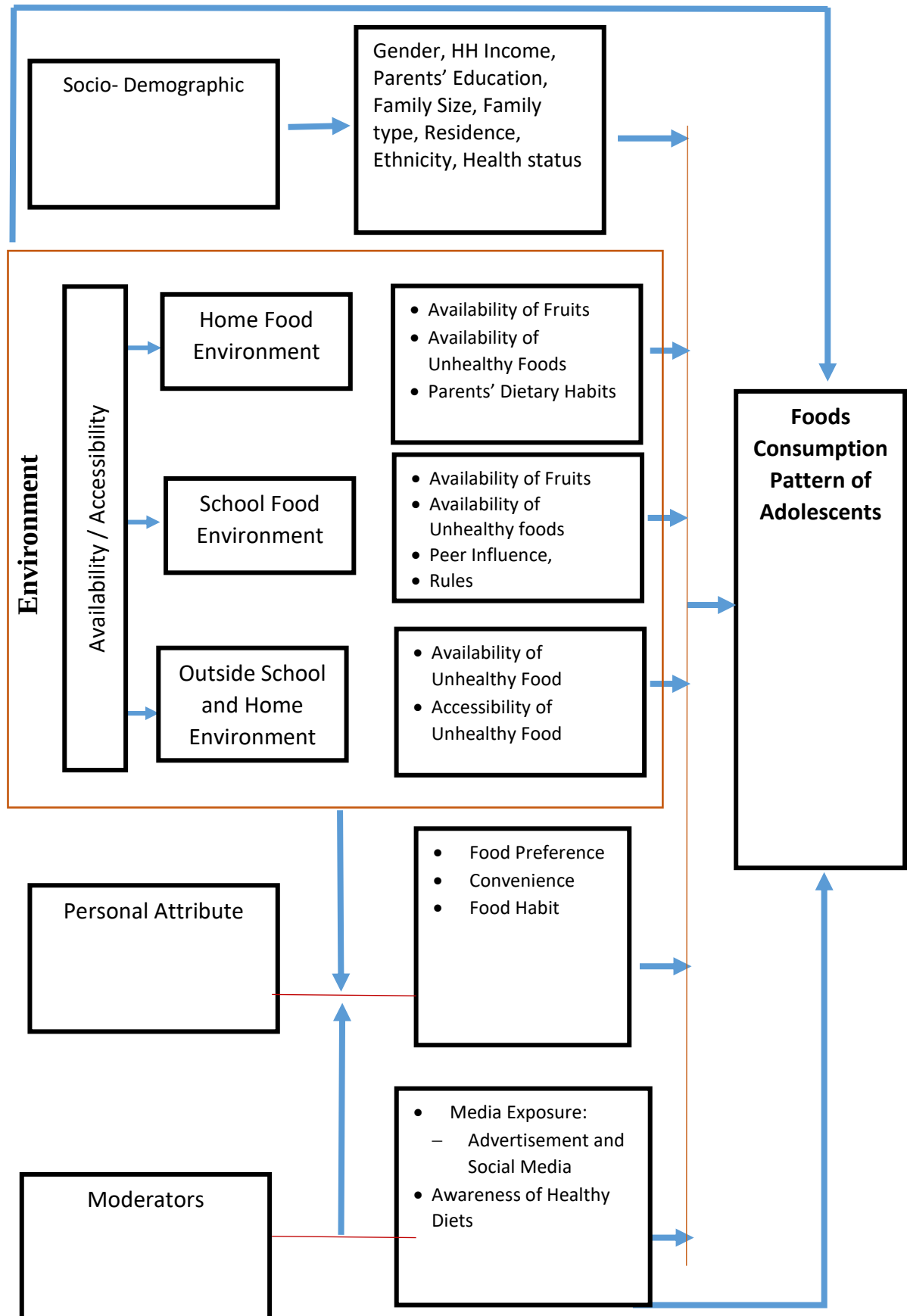
Awareness Programme/School Meal Programme: Factors such as regional agricultural practices, economic status, and household characteristics also influence dietary diversity, while awareness programmes play a role in shaping adolescents' food choices (Siriwardhana et al., 2024). Additionally, school policies and the

availability of food play crucial roles in influencing students' food choices. Urban students, for example, may experience food restrictions in schools, which affect their food consumption patterns, while rural adolescents often face fewer restrictions (Verstraeten et al., 2014).

3.3 Supportive and Restrictive Tools on Food Consumption and Food Choice

Cultural traditions, holidays, and other social events often influence food choices by attaching symbolic meanings to certain foods, such as "special foods" reserved for birthdays or other celebrations (Furst et al., 1996). Restrictive parenting practices also play a role in controlling children's intake of unhealthy foods, often with the goal of promoting healthier eating habits (Vaughn et al., 2016).

Numerous factors influence dietary diversity within populations, including the region's agricultural biodiversity and farming systems, the population's historical patterns of consumption, regional traditions, and the level of technology used in food production, processing, and storage. Additionally, the economic levels of the inhabitants and household socio-economic and demographic characteristics play significant roles in determining the dietary diversity of a region's population (Siriwardhana et al., 2024).



Source: Authors' own creation by using several literature

Figure 3.1: Conceptual Framework of Determinants of Food Consumption Habits

CHAPTER FOUR

Methodology

4.1 Data Collection Methods

This research used both primary and secondary data, incorporating a mix of qualitative and quantitative research methods.

4.1.1 Primary Data Collection

Primary data were collected using pre-tested structured questionnaires and key informant interviews. The questionnaire addressed socio-economic, cultural, and psychological factors, alongside awareness levels and perceptions related to food consumption. Additionally, key informant interviews were conducted with school principals, selected teachers, school canteen staff, officials from relevant regulatory institutions, and some parents to comprehensively gather data on adolescents' food consumption patterns and the factors influencing their food choices.

4.1.2 Secondary Data Collection

Furthermore, secondary data were gathered from research articles, published and unpublished sources, related books, and internet sources. Data analysis was carried out using SPSS, and the findings were presented through charts, graphs, and images.

In the initial stage of the study, permission letters for data collection in both government and private schools were submitted to the Ministry of Education. Following this, a desk review and analysis of available school canteens, student-related data, and other relevant documents, including the national programme of school canteens, needs assessments, and other pertinent materials, were carried out to gain an overall understanding for future interventions.

4.2 Operational Definitions

Adolescent Student

Middle and late adolescence (14 -19 years) – Grade 9-12

Early adolescents (<14 years) were excluded from the study due to their greater dependency on parental or caregiver decisions regarding food purchasing and preparation, which may not accurately reflect their individual preferences or independent consumption patterns. Additionally, younger adolescents typically have lower cognitive maturity, which may limit their ability to provide reliable self-reported data through structured questionnaires and interviews. Focusing on middle and late adolescence (14–19 years) allows for a more accurate assessment of personal food choices, attitudes, and behaviours during a stage of increased autonomy.

Place of Consumption

This referred to physical location where any type of foods or beverage are consumed by the adolescents such as home, school, canteen, friend's home, etc.

4.3 Study Locations

This survey focused on urban schools and students, recognizing the higher prevalence of unhealthy food consumption in urban areas, as documented in the literature. Research has shown that mothers in urban areas were 4.55 times more likely to provide unhealthy food to their children compared to those in rural areas, as supported by the Global Food Policy Report (Jemere et al., 2023). Colombo, Gampaha, and Kandy, identified as the most urbanized districts in Sri Lanka with the highest population densities according to the 2012 census (DCS, 2014), were therefore selected for the study.

To ensure representative sampling, two educational zones with the highest number of schools were selected within each district. A multistage random sampling approach was employed, covering both government and private schools. Initially, the districts were selected, followed by two educational zones within each district, based on the concentration of schools. Within these zones, government schools (including both Provincial and National schools) were sampled proportionately. If private schools were present within a selected zone, one was purposively included in the survey.

The selected districts and educational zones are outlined below for clarity.

Table 4.1: Districts and Educational Zones

<i>Colombo</i>	<i>Number of Schools</i>	<i>Gampaha</i>	<i>Number of Schools</i>	<i>Kandy</i>	<i>Number of Schools</i>
Colombo	124	Minuwangoda	159	Gampola	143
Homagama	99	Gampaha	145	Katugasthota	122
Piliyandala	86	Negambo	117	Kandy	116
Sri-Jayawardanapura	88	Kelaniya	115	Teldeniya	97
				Denuwara	87
				Watthegama	87

Source: Ministry of Education, Annual School Census, 2021

4.4 Sample Selection

Middle and late adolescence (14–19 years) were selected as the sample for this survey. Students within this age group served as the primary sampling units with attention given to school type (government and private schools), gender, and age. Consequently, the districts of Colombo, Gampaha, and Kandy were selected based on the high prevalence and density of school-aged children. To ensure a justifiable and representative sample, mixed sampling techniques, combining both probability and non-probability methods, were employed.

The selected districts were further categorized by school sectors (government and private), gender, and age groups. The total population of the target group students aged 14–19 in Grade 10 and above was 775,306. A sample was drawn from this population with a margin of error of $\pm 4\%$ and a 95% confidence level, indicating a 95% probability that the true value falls within $\pm 4\%$ of the surveyed estimate.

$$n = N * X / (X + N - 1);$$

To obtain the optimum sample size for the specified precision and confidence level, an estimated prevalence (p) of 50% was used in the sample calculation. The required sample size for each stratum was then approximated using the following formula:

Where, $X = Z_{\alpha/2}^2 * p * (1-p) / MOE^2$, and $Z_{\alpha/2}$ is the critical value of the Normal Distribution at $\alpha/2$ (e.g., for a confidence level of 95%, α is 0.05 and the critical value is 1.96), MOE is the margin of error, p is the sample proportion, and N is the population size.

Accordingly, the survey sample size was determined to be 463, based on a 95% confidence level and a 4% margin of error. Within this sample, a representative selection was made to reflect the school type, gender, and age of the target groups.

In the first stage, districts with higher prevalence and density of school children were purposively selected and divided into different strata based on school type government and private. In the second stage, students aged 14–19 were randomly selected as sampling units, with selection balanced by gender. Finally, individual sampling units within this age group were randomly selected to achieve the required sample size. Throughout the process, proportionate allocation was applied to select sampling units from the different strata.

Considering time and budget constraints, 30 schools were selected to participate in the survey. This selection was proportionately distributed across districts and educational zones, with one private school chosen per district, and government schools selected proportionately. The distribution details of the selected sample within each stratum is presented in the table below.

After allocating the sample children across educational zones, efforts were made to distribute them evenly among the selected schools. Additionally, male and female students were selected proportionately from the total sample.

Table 4.2: Number of Schools and Number of Children in Each Educational Zone

Districts	No. of Schools		No. of Children	
<i>Colombo District</i>	<i>Total</i>	<i>Sample</i>	<i>Total</i>	<i>Sample</i>
Colombo Zone	124	4	138,627	110
Homagama Zone	99	4	65,216	58
Private schools	30	1	59,495	36
Total	253	9	263,338	204
<i>Gampaha District</i>	<i>Total</i>	<i>Sample</i>	<i>Total</i>	<i>Sample</i>
Gampaha Zone	145	5	100,049	71
Minuwangoda Zone	159	5	72,864	60
Private schools	20	1	33,763	23
Total	304	11	206,676	154
<i>Kandy District</i>	<i>Total</i>	<i>Sample</i>	<i>Total</i>	<i>Sample</i>
Gampola Zone	143	5	52,835	49
Katugasthota Zone	122	4	43,719	40
Private schools	10	1	11,733	16
Total Sample	30			

Source: Annual School Census, Ministry of Education, 2021

4.5 Data Analysis and Analytical Techniques

For each objective, specific data collection and analysis methods were used as follows:

4.5.1 Objective 1: Examine the Food Consumption Pattern among Urban Adolescents

Data Source: Primary Data

Method: Structured questionnaires and telephone interviews were used to survey adolescents in urban areas, collecting data on their food consumption patterns and behaviour. Information gathered included types of foods consumed, frequency of consumption meal patterns, and sources of the food.

To ensure comprehensive data collection, telephone interviews were conducted with the parents of the selected adolescents when the children were unable to provide certain information themselves.

Analytical Method: Descriptive analysis was performed using cross-tabulation and multiple responses analysis. To identify food patterns, a seven-day dietary diary/food record method was employed.

4.5.2 Objective 2: To Identify Factors which Influence Food Choice of Urban Adolescents

Data Source: Primary Data

Method: Structured Questionnaire

Analytical Method: Qualitative analysis was conducted to assess the factors influencing food choices, using a four-point Likert scale ranging from 1 = "Strongly Disagree" to 4 = "Strongly Agree." Higher scores on the Food Choice Questionnaire a stronger influence of the factor on respondents' food choices. To streamline interpretation, levels of disagreement (negative responses) were consolidated into a single category labeled "Disagree/Strongly Disagree (D/SD)," while levels of agreement (positive responses) were merged into a single category labeled "Agree/Strongly Agree (A/SA)."

4.5.3 Objective 3: Identify Potentials and Barriers for Achieving a Healthy Diet for Adolescents:

Data Source: Primary Data

Method: Key informant interviews were conducted with school principals, teachers, healthcare professionals, school canteen owners, and selected parents to gain insights into the opportunities and challenges of promoting healthier eating habits among adolescents.

Analytical Method: Qualitative analysis - Thematic analysis was used to identify common themes and barriers.

4.5.4 Objective 4: Explore Strategies and Policies for Promoting Healthy Eating Habits

A systematic literature review was conducted to identify interventions and policies implemented in other regions or countries to promote healthy eating habits among adolescents. Policies and interventions targeting adolescent nutrition in various countries were compared to identify best practices and key lessons learned. Comparative policy analysis frameworks were used to assess the transferability of successful interventions to the Sri Lankan context.

The synthesized information was developed into a practical strategy tailored to the unique needs and characteristics of Sri Lankan children and adolescents, intended for presentation to the relevant policymakers for consideration. The strategy focused on raising awareness, promoting nutritional education, and implementing targeted interventions to address barriers to healthy eating. Efforts were made to ensure the approach was culturally appropriate, adaptable and aligned with the local context to enhance its relevance and effectiveness.

Throughout the process, collaboration with key stakeholders including health professionals, educators, and community leaders was emphasized to gather valuable insights and build strong support for the proposed strategies. Key informant interviews and data analysis were conducted to refine and validate the strategies, ensuring their effectiveness and alignment with the overarching strategic framework.

The ultimate goal was to create a comprehensive and contextually relevant blueprint for promoting healthy eating habits among children and adolescents in Sri Lanka. This blueprint integrated insights from successful global interventions while adapting strategies to effectively address local challenges and cultural preferences.

4.6 Ethical Considerations

This study adhered to ethical standards to ensure the safety, dignity, and privacy of all participants. Prior to data collection, informed consent was obtained from all participants. For adolescent respondents under the age of 18, parental or guardian consent was secured in accordance with ethical research protocols. Participants were informed about the study's objectives, procedures, and their right to withdraw at any point without any consequences.

All data collected were treated with strict confidentiality, and no identifying personal information was disclosed in the analysis or reporting. Anonymity was maintained throughout the data collection, storage, and presentation phases. Ethical approval and official permission for school-based data collection were obtained from the Ministry of Education and relevant school authorities. The study conformed to accepted ethical practices for research involving human subjects.

CHAPTER FIVE

Food Consumption Patterns among Urban Adolescents

5.1 General Characteristics of the Sample Students

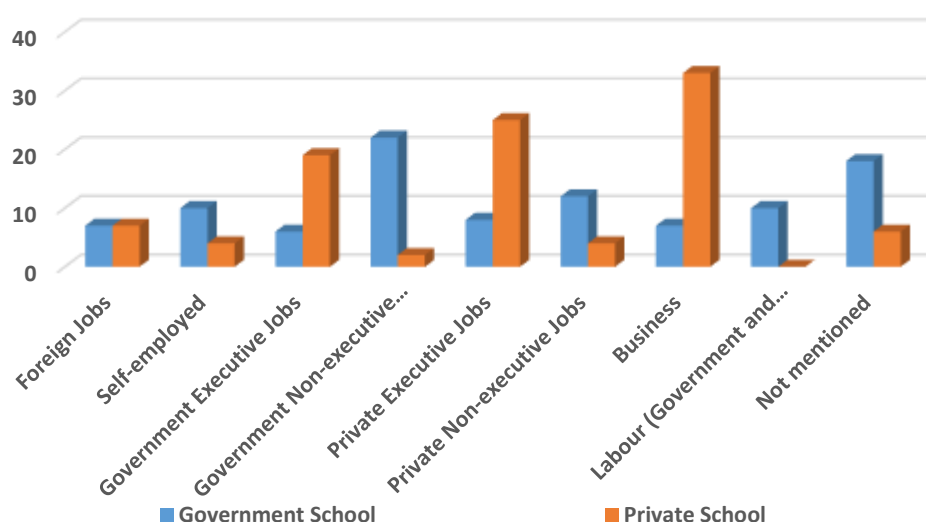
The table presents data on the general characteristics of sample students across three regions: Colombo, Gampaha, and Kandy. These students are categorized based on gender, ethnicity, religion, age, and family size and further divided based on whether they attend government (G) or private (P) schools.

Table 5.1: General Characteristics of the Sample Students

Characteristics	Category	Colombo		Gampaha		Kandy		Sub-total		Total	
		G %	P %	G %	P %	G %	P %	G %	P %	N	%
Gender	Male	54	36	48	44	46	48	50	41	226	49
	Female	46	64	52	56	54	52	50	59	237	51
Ethnicity	Sinhala	85	61	100	88	72	65	87	68	388	84
	Tamil	6	11	0	6	16	26	7	15	36	8
	Muslim	8	25	0	6	12	9	6	16	37	8
	Burgher	1	3	0	0	0	0	0	1	2	0
Religion	Buddhist	80	56	97	63	72	57	84	57	369	80
	Catholic	5	8	2	25	2	9	4	12	23	5
	Hindu	5	25	0	6	11	26	5	21	35	8
	Islam	10	11	1	6	15	8	7	10	36	7
Age	14 years	15	5	9	37	19	43	14	24	72	15
	15 years	24	11	32	50	35	43	29	29	136	29
	16 years	29	17	23	13	28	13	27	15	115	25
	17 years	27	67	31	0	16	1	26	32	123	27
	18 years	5	0	5	0	2	0	4	0	17	4
Family Size	1-2	2	6	2	6	0	0	2	2	8	2
	3-4	46	67	49	81	44	57	47	67	231	50
	5-6	46	27	45	13	52	43	47	31	205	44
	6<	6	0	4	0	4	0	4	0	19	4

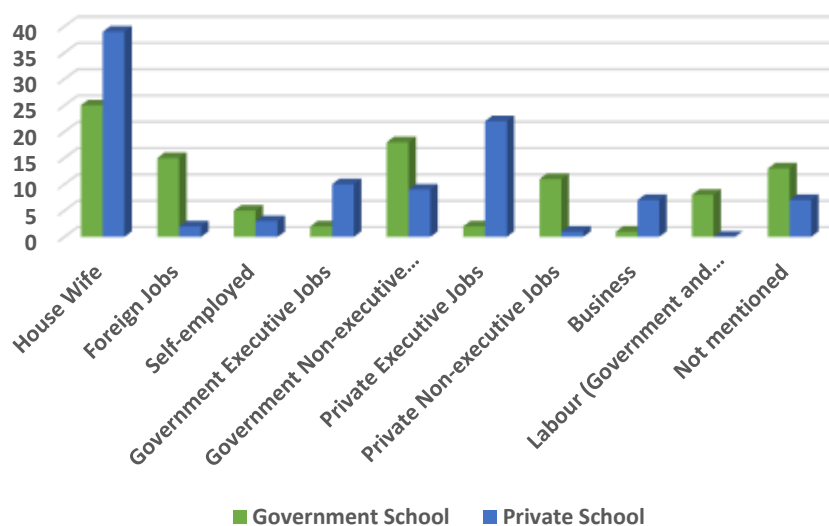
Source: HARTI Survey Data, 2024

The characteristics of the sample students reveal diverse patterns across gender, ethnicity, religion, age, and family size. Gender distribution is balanced in government schools, while private schools have a higher proportion of female students (59%). The majority of students are Sinhala (84%) and Buddhist (80%), with smaller representations of Tamils, Muslims, and other religious groups. Most students are aged 15 (29%), 17 (27%) and 16 (25%), while only a small proportion are aged 18 (4%), a group notably absent in private schools. Families with 3-4 members are predominant (50%), while very large families (more than six members) are rare (4%). Government schools show broader demographic representation compared to private schools.



Source: HARTI Survey Data, 2024

Figure 5.1: Occupation of Fathers



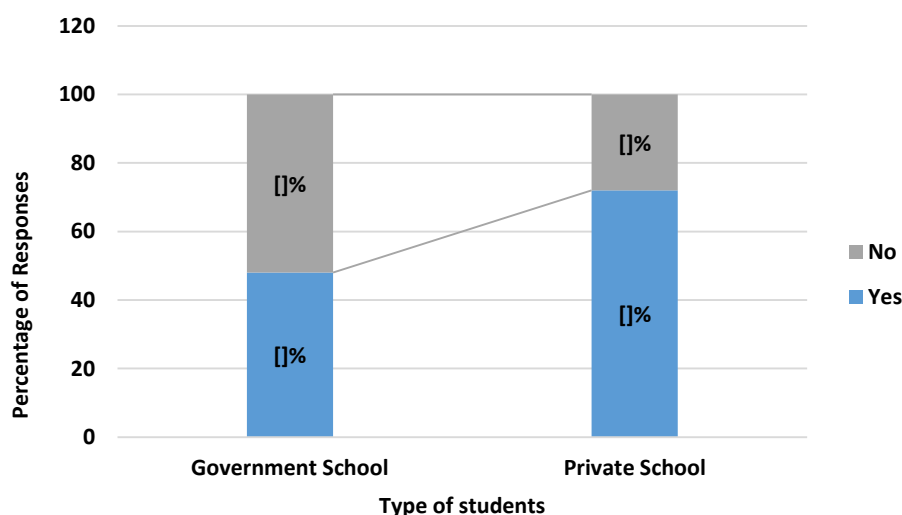
Source: HARTI Survey Data, 2024

Figure 5.2: Occupation of Mothers

Figure 5.1 and 5.2 provides an analysis of the occupation of fathers and mothers of sample students in Colombo, Gampaha and Kandy, categorized by job type. Among fathers, there is a higher representation in government-related jobs, especially Government Non-executive positions (22%) and Private Non-executive positions (12%), as well as a notable share in self-employment (10%) and labour (10%) in government schools. Conversely, private school children's fathers are more concentrated in higher-paying and business-oriented roles, with the largest group engaged in business (33%), followed by Private Executive jobs (25%) and Government Executive jobs (19%). For mothers, in both groups, the majority of

mothers are housewives, especially in private schools (39%) compared to government schools (25%). Government school children's mothers are more often in foreign jobs (15%), government non-executive roles (18%), and private non-executive roles (11%), while private school mothers are more likely in higher-income positions such as private executive jobs (22%) and government executive jobs (10%). Business involvement is higher among private school mothers (7%) than government school mothers (1%).

Physical Activities



Source: HARTI Survey Data, 2024

Figure 5.3: Participation of Physical Activities

The majority of private school students (72%) actively participate in physical activities, both within and outside the school environment. In contrast, a significant proportion of government school students do not engage in any physical activities. According to the Food-based Dietary Guidelines issued by the Ministry of Health, maintaining a healthy body requires not only a balanced diet but also regular physical activity. The primary reason cited for the lack of physical activity among students is insufficient time, attributed to heavy academic workloads and commitments to tuition classes.

Additionally, a lack of interest and certain health conditions have been reported as contributing factors for not engaging in physical activities. According to the Sri Lankan Food-based Dietary Guidelines, regular physical activity is a key recommendation alongside adopting healthy eating habits for adolescents. However, our findings indicate that the majority of government school students show a low level of participation in physical activities, which is a matter of concern.

A study conducted in the United States revealed that private high school students reported greater involvement in regular exercise programmes and participation in school-based sports teams compared to their public school counterparts. However,

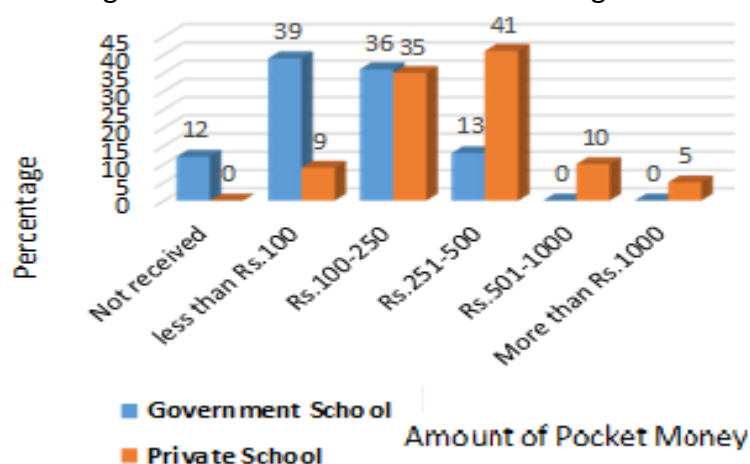
public school students reported higher participation in physical education classes. This suggests that while private schools may offer more extracurricular sports opportunities; public schools might provide more structured physical education within the curriculum (Davis et al, 2001).

Research conducted in the United Kingdom revealed that doctors have raised concerns about the significant lack of access to outdoor spaces in state schools, which they believe is exacerbating the country's child obesity crisis. In contrast, private schools often have access to ten times more green space, facilitating greater opportunities for physical activity among their students (Carrington, 2024). A study among Turkish university students identified "lack of time due to busy lesson schedules" and academic priorities set by parents as significant barriers to physical activity. These external barriers were more prominent than internal ones, highlighting the impact of academic pressures on students' ability to engage in physical activities (Capar et al, 2016).

5.2 Food Consumption Pattern

5.2.1 Pocket Money Received and Spent on Food

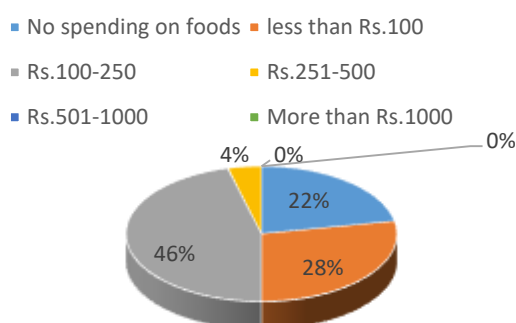
The following pie chart clearly shows a significant difference in the financial situations of government and private school students. Government school students are mostly concentrated in the lower ranges of pocket money, while private school students dominate the middle and higher ranges. This reflects broader socio-economic patterns, where families of private school students are generally more financially capable of providing higher pocket money compared to those of government school students. Most government school students receive less than Rs. 100 of pocket money, while the largest group of private school students falls within the Rs.251-500 range. Despite the differences, the Rs. 100-250 range is common to both groups, suggesting that this amount is considered as reasonable or manageable for many families regardless of their socio-economic background.



Source: HARTI Survey Data, 2024

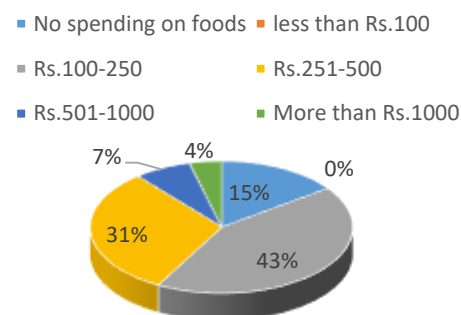
Figure 5.4: Amount of Pocket Money Received

The pie charts compare how students in government and private schools spend their pocket money on food. Most students in Government schools (46%) spend Rs.100 – 250 on foods, followed by 28% who spend less than Rs.100. Private School students also predominantly fall into the Rs.100-250 range (43%), while 31% spend between Rs.251 – 500. Notably, 4% of private school students spend more than Rs.1, 000, and 7% spend Rs.501 – 1,000 which is absent among government school students. This suggests differences in affordability, spending priorities, or socio-economic backgrounds between the two groups of students. Additionally, 22% of government school students and 15% of private school students do not spend their pocket money on food.



Source: HARTI Survey Data, 2024

Figure 5.5: Pocket Money Spent on Foods - Government School Students



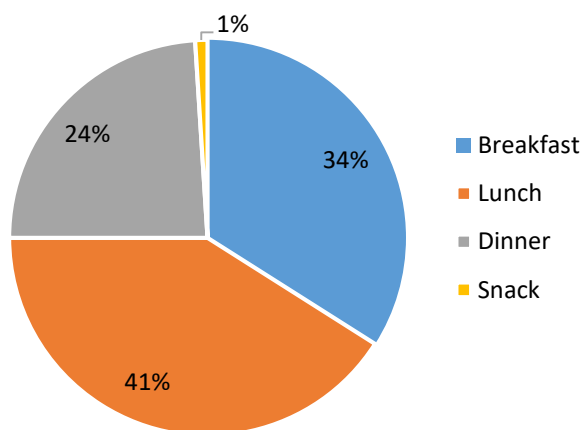
Source: HARTI Survey Data, 2024

Figure 5.6: Pocket Money Spent on Foods – Private School Students

According to a study by *Wagstaff et al, 2003*, socio-economic status significantly influences adolescent spending behaviour, particularly in terms of diet and nutrition. Adolescents from higher-income families, typically attending private schools, have greater autonomy and purchasing power, leading to increased spending on non-essential or fast foods. In contrast, students from lower-income households, often enrolled in government schools, face budget constraints that limit their food choices primarily to home-prepared or low-cost options. A more recent study by *Kaur et al. (2017)* in India also revealed that students with higher pocket money are more likely to purchase processed snacks and sugar-sweetened beverages, while those with limited allowances tend to rely on basic meals prepared at home or provided by schools.

5.2.2 Meal Frequencies

Almost all students in both government and private schools typically consume three meals a day: breakfast, lunch, and dinner. However, when asked which meal they consider their main meal, the majority (41%), regardless of school type, identified lunch as their primary meal. Meanwhile, 34% regarded breakfast as their main meal. Additionally, 80% of respondents reported regularly consuming snacks between meals as part of their daily routine.

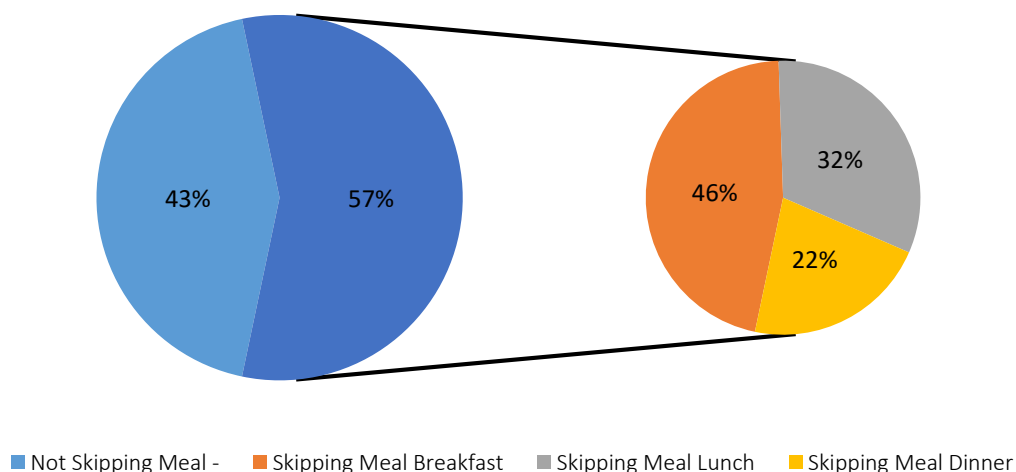


Source: HARTI Survey Data, 2024

Figure 5.7: Type of Main Meal

5.2.3 Skipping Meal

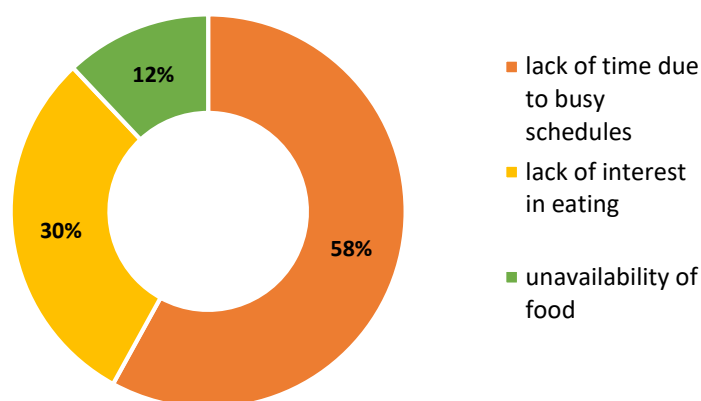
A significant portion of the sample students (57%) from both government and private schools reported regularly skipping one of their daily meals. Among the students which skipping daily meal, the majority (46%) skip breakfast, while 32% skip lunch.



Source: HARTI Survey Data, 2024

Figure 5.8: Respondent Count Skipping and Not Skipping the Main Meals

The primary reason cited for skipping meals was a lack of time due to busy schedules (58%). Additionally, 30% mentioned a lack of interest in eating, and 12% attributed it to the unavailability of food.



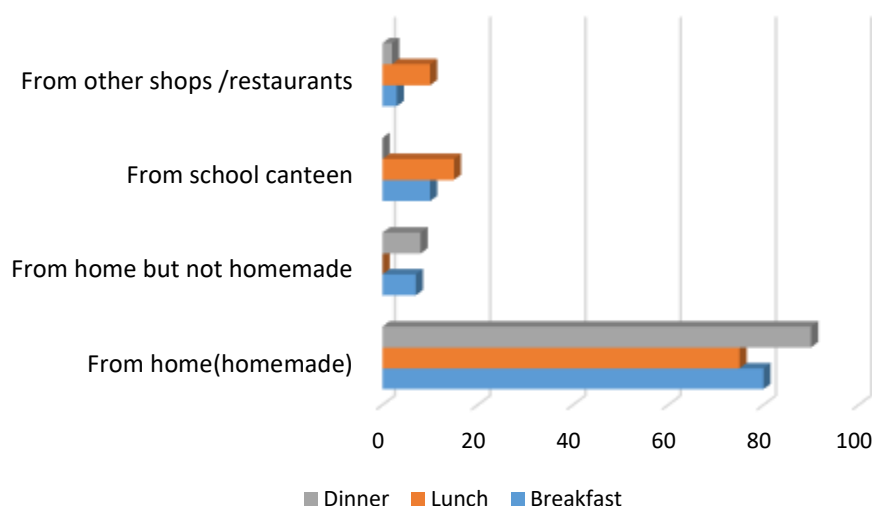
Source: HARTI Survey Data, 2024

Figure 5.9: Reasons for Skipping Meals

A study by *Story et al. (2009)* found that lack of appetite and food insecurity are major contributors to meal skipping among adolescents, particularly in low-income households. About 25–35% of adolescents surveyed reported skipping meals because they "didn't feel hungry" or due to limited access to food at home, especially in the case of lunch. Similarly, *Rampersaud et al. (2005)* found that breakfast is the most frequently skipped meal among adolescents, with time constraints due to school schedules being the most commonly cited reason. The study revealed that over 40% of high school students regularly skip breakfast, often prioritizing extra sleep or early classes over eating. The researchers also highlighted that skipping breakfast is linked to reduced cognitive performance and poorer academic outcomes, emphasizing the importance of school-based meal programmes to address this issue.

5.2.4 Sources of Main Meals Consumed by School Students

The pie chart illustrates the typical sources of main meals (breakfast, lunch, and dinner) for students from both government and private schools. A significant majority of meals, particularly dinner and lunch, are homemade, reflecting a strong preference for home-prepared food. Breakfast is also predominantly homemade, though slightly less so compared to lunch and dinner. Meals purchased from school canteens and other shops/restaurants are relatively uncommon, with lunch being the most frequently purchased meal in these categories. Meals brought from home but not homemade are the least common across all meal types. Overall, the data highlights a strong reliance on homemade meals, particularly for dinner, among the student population.



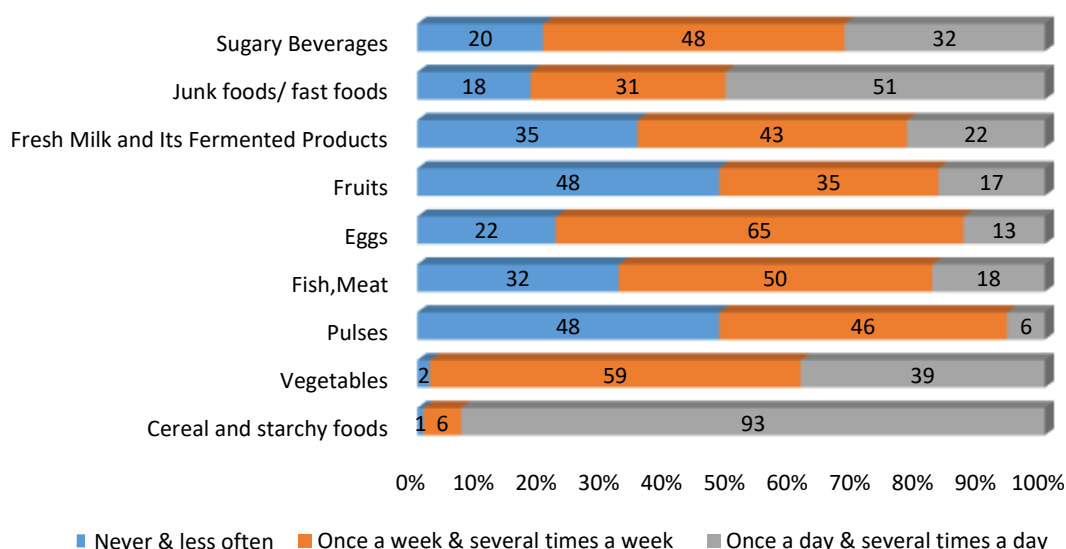
Source: HARTI Survey Data, 2024

Figure 5.10: Sources of Main Meals Consumed by School Students

5.2.5 Weekly Food Intake Frequency

The following pie chart illustrates the weekly food intake frequency of both government and private school students across various food categories. Cereal and starchy foods, predominantly rice, dominate their diet, with an impressive 93% of students consuming them at least once or multiple times daily. Vegetables are the second most commonly consumed daily item, with 39% of students including them in their meals, while 59% consume them weekly. Fruits and pulses show more varied consumption pattern, with 48% of students consuming them infrequently, and daily intake remaining low. Sugary beverages and junk/fast foods have significant daily consumption rates of 32% and 51% respectively, though notable proportions (20% and 18%) rarely consume in these items. Fresh milk and fermented dairy products are moderately consumed, with 43% of students having them weekly and 22% daily. Eggs demonstrate a balanced consumption pattern, with 65% of students including them in their diet weekly. Fish and meat are less frequently consumed, half of the students consume them weekly, but only 18% consume them daily.

Overall, this data reveals a dietary pattern heavily reliant on staples like rice, while protein-rich and nutrient-dense foods such as fruits, vegetables, and pulses are consumed less frequently on a daily basis by both government and private school students. Additionally, based on observations from the sample, the consumption of sugary beverages and junk/fast foods appears to be comparatively higher among private school children.



Source: HARTI Survey Data, 2024

Figure 5.11: Weekly Food Intake Frequency

According to the Sri Lankan Food-based Dietary Guidelines, adolescents are encouraged to consume a variety of foods, including:

- Cereal-based foods three times a day
- Plenty of fruits and vegetables
- Pulses, fish, dried fish, eggs, poultry, and lean meat
- Milk or milk products daily
- Moderate amounts of fats
- Minimal amounts of sugar, sweets, and sweetened beverages

Additionally, the Health Ministry emphasizes the importance of functional foods — those that provide physiological benefits that help reduce the risk of chronic diseases. Functional foods are typically consumed as unprocessed, minimally processed, or processed items, often involving culinary ingredients or fermentation. Fruits, vegetables, green leaves, nuts, seeds, and pulses are recognized as functional foods.

However, our findings reveal a concerning trend: the consumption of fruits, pulses, and green leaves remains significantly low compared to other food groups, while rice continues to dominate adolescents' diets. Moreover, there is a notable increase in the consumption of junk foods, fast foods, and sugary beverages.

These dietary patterns indicate a deviation from recommended guidelines, posing potential long-term health risks for adolescents. There is a critical need to raise awareness about balanced nutrition and encourage healthier eating habits, aiming to reduce reliance on junk foods and sugary drinks while increasing the intake of fruits, vegetables, and functional foods.

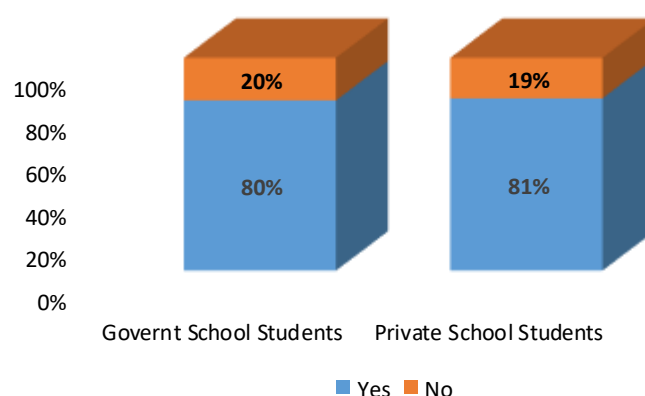
The following findings support our conclusion that students' diets tend to be imbalanced, favouring carbohydrates and processed foods over nutrient-dense options such as fruits, vegetables, and quality proteins.

A study by Mirmiran et al. (2004) found that adolescents' diets in many developing countries are heavily centered on starchy staples like rice and bread, with limited daily intake of fruits and vegetables. The study concluded that this dietary pattern leads to micronutrient deficiencies, particularly in iron, calcium, and vitamin A, which are crucial during adolescence.

According to Ludwig et al. (2001), regular consumption of sugary beverages and fast foods is significantly associated with increased caloric intake and poor diet quality among adolescents. The study highlights that students who frequently consume such items are at greater risk of obesity and metabolic disorders, especially when these foods replace more nutritious options.

5.2.6 Snacking Habits and Preferences

A significant majority of students in both government and private school (80%) reported consuming snacks daily, indicating that snacking is a common habit among adolescents. However, the choice of snacks varied widely between government and private school students. Government school students predominantly opted for comparatively low cost snacks compared to their private school counterparts. Factors influencing these choices included affordability, accessibility, and perceived quality of snacks. These patterns suggest that initiatives promoting healthy snacking habits could help to increase healthy food choice among adolescents.



Source: HARTI Survey Data, 2024

Figure 5.12: Snacking Habits and Preferences

The following studies support our point that snacking is habitual behaviour among adolescents, and that economic background and accessibility heavily influence snack choices, highlighting the need for school-based or policy-driven nutrition interventions. According to Larson et al. (2008) found that snacking is highly

prevalent, among adolescents, with over 75% reporting daily snack consumption. Their study also found that socio-economic status significantly affects snack choices, where adolescents from lower-income families tend to select cheaper, energy-dense foods due to affordability and availability, while those from higher-income backgrounds are more likely to consume branded or processed snacks perceived as higher quality.

A study by Craigie et al. (2009) highlights that snacking is a prevalent behaviour among adolescents, often influenced by socio-economic factors. Students from lower-income households often attending government schools tend to choose cheaper, energy-dense snacks due to affordability and availability. In contrast, students from higher-income families, more common found in private schools, have greater access to branded and diverse snack options, which are sometimes perceived as higher quality.

A study by Savige et al. (2007) found that adolescents often choose snacks based on convenience, taste, and peer influence, rather than nutritional value. The study also highlighted that school type and parental income play a role in the types of snacks consumed, with unhealthy snack consumption being more common among students with fewer dietary restrictions or economic constraints. The researchers recommend targeted health education to promote healthier snacking habits.

CHAPTER SIX

Food Habits, Preferences and Food Choice of Urban Adolescents

This chapter discusses the personal characteristics, school setting, and family background and other environmental factors that influence food habits, preferences, and choices among urban adolescents.

6.1 Personal Characteristics

To assess the personal characteristics influencing food habits, preferences, and choices, nine key sections were utilized, each comprising several statements. This section analyzes the scoring patterns of respondents for each variable in every section. Responses indicating disagreement (negative statements) were consolidated into a single category labeled "Disagree/Strongly Disagree (D/SD)", while agreement (positive statements) responses were grouped as "Agree/Strongly Agree". This structured approach provides a comprehensive understanding of the personal attributes that influence food habits, preferences, and choices among urban adolescents. The six sections evaluated sections are as follows:

6.1.1 Health Consciousness – (Assesses how awareness and concern for health influence dietary decisions)

According to the following table, the majority of respondents expressed indifference or disagreement toward choosing foods labeled as healthy, paying attention to nutritional information, and avoiding junk food. Only a minority (20.8%) preferred fruits and vegetables to sugary snacks. These findings indicate a generally low level of health consciousness among the respondents, suggesting that convenience or taste may take precedence over health considerations.

Table 6.1: Health Consciousness of Urban Adolescents

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Foods labeled as healthy are often chosen	38.0	36.9	25.1
Nutritional information on food packages is regularly considered	38.2	25.3	36.5
Junk food is avoided due to its negative health effects	43.6	31.7	24.6
Fruits and vegetables are preferred over sugary snacks	59.8	19.4	20.8

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.1.2 Taste Preferences (Examines the role of flavour and sensory appeal in shaping food choices)

The following table shows that a significant majority (72.8%) agreed that taste the most important factor in food choices. Similarly, 74.5% expressed a willingness to try new foods based on taste. Preferences for sweet foods over salty or spicy foods

were more varied, with only 28.1% in agreement. Meanwhile, 44.1% agreed that they enjoy foods with strong flavours. These findings highlight the strong influence of taste in food choices, with a notable trend of openness to exploring new flavours.

Table 6.2: Taste Preferences of Urban Adolescents

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Taste is the most important factor in food choices	14.3	13.0	72.8
Sweet foods are preferred over salty or spicy options	19.4	52.5	28.1
New foods are willingly tried based on their taste	14.0	11.4	74.5
Foods with strong flavours are enjoyed	31.3	24.6	44.1

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.1.3 Convenience – (Considers the role of accessibility and ease of preparation in selecting foods)

Responses regarding convenience showed mixed patterns. While 37.1% agreed that they often choose quick and easy-to-prepare foods, a considerable percentage remained neutral (26.3%). Agreement with preferring ready-to-eat snacks and eating fast food was relatively lower (30.5% and 27.9%, respectively) indicating that although convenience is important, factors such as taste or social influence may play a larger role in food choices.

Table 6.3: Convenience of Foods

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Foods that are quick and easy to prepare are often chosen	36.5	26.3	37.1
Ready-to-eat snacks are preferred over home-cooked meals	17.9	51.6	30.5
The convenience of food significantly influences eating habits	33.0	21.6	45.4
Fast food is frequently consumed due to time-saving	16.4	55.7	27.9

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.1.4 Personal Habits and Lifestyle – (Looks into how daily routines, work schedules, and personal habits shape eating behaviours)

Regular snacking is common, with 66.7% agreeing to this habit. However, adherence to specific diet plans and meal planning was quite low, with only 13.6% and 16.4% agreeing, respectively. Additionally, a majority (53.1%) reported watching TV or using electronic media during meals, reflecting a casual approach to mealtime. These findings suggest a general lack of structured eating habits among the respondents.

Table 6.4: Personal Habits and Lifestyle

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Snacking between meals is common	13.8	19.4	66.7
A specific diet or eating plan is followed	76.2	10.2	13.6
Meals are eaten at regular times each day	63.1	12.7	24.2
Meals planned in advance	71.5	12.1	16.4
Watching TV or other electronic media during meals at home is common	35.0	11.9	53.1

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.1.5 Emotional and Psychological Factors – (Investigates the influence of emotions, stress, and mental well-being on food choices)

Food appears to serve as a source of emotional satisfaction for many, with 57.7% reporting that they reward themselves with their favourite foods. Moderate agreement was observed regarding dissatisfaction when desired foods are unavailable (50.8%) and making food choices based on mood (44.1%). These findings indicate that emotions play a significant role in shaping food habits.

Table 6.5: Emotional and Psychological Factors

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Dissatisfaction arises from not being able to buy or use preferred foods.	31.1	18.1	50.8
Mood influences food choices	39.3	16.6	44.1
Favourite foods are used as a form of reward	27.0	15.3	57.7
Dissatisfaction occurs when food is not available as desired	31.5	17.7	50.8

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.1.6 Knowledge and Education (Assesses the role of awareness and understanding of nutrition and food-related information in shaping food preferences)

Only a small percentage (24.0%) of respondents agreed that they have a good understanding of a balanced diet, while the majority (70.4%) were neutral. Similarly, awareness of the benefits of food and the ability to read food labels showed moderate levels of agreement (24.8% and 20.7%, respectively). These findings suggest a potential lack of formal nutrition education or limited application of nutritional knowledge in making food choices.

Table 6.6: Knowledge and Education

Statement	Percentage (%)		
	D/SD	NAD	A/SA
There is a good understanding of what constitutes a balanced diet	5.6	70.4	24.0
Awareness exists regarding the health benefits of different foods	6.7	68.5	24.8
Nutrition and healthy eating have been taught at school	12.4	45.0	42.6
Skills to read and understand food labels are present	20.3	59.0	20.7

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

Overall, the findings suggest that adolescents' food habits are strongly influenced by convenience, taste, emotional satisfaction, and limited nutritional knowledge, while health-conscious decisions play a relatively minor role. Promoting healthy eating habits and enhancing nutrition education could help address these concerns.

Supporting this, a study by Contento et al. (2006) highlights that personal attributes such as taste preferences, food beliefs, self-efficacy, and perceived benefits and barriers significantly influence adolescents' eating behaviours.

The research found that adolescents' food choices are closely linked to their individual attitudes, personal goals (e.g., weight control), and motivation, confirming the effectiveness of structured assessment tools in capturing these influences. Similarly, research by Steinberg (2007) supports the idea that personal values, self-identity, and emotional attitudes play a vital role in shaping food preferences and dietary behaviour among urban adolescents. The study further suggests that personal beliefs and perceived social norms directly influence the acceptance or rejection of various food types, thereby validating the use of attitudinal scoring frameworks —such as “Agree/Disagree” categories in behavioural studies.

6.2 Influence of School Environment on Food Habits

The following table illustrates the influence of school environment on students' food habits, with responses categorized into three levels: Disagree/Strongly Disagree (D/SD), Neither Agree nor Disagree (NAD), and Agree/Strongly Agree (A/SA). A significant portion of students (53.1%) disagree or strongly disagree with eating breakfast at school, while 33.9% agree or strongly agree, indicating that eating breakfast at school is not a common habit. In contrast, 51.2% agree or strongly agree that they eat lunch at school, suggesting that lunch is more common compared to breakfast. Interestingly, only 15.6% of students agree that they buy lunch from the school canteen, implying that many either bring lunch from home or do not utilize the canteen facilities.

In terms of healthy eating practices, a majority (61.3%) disagree with carrying healthy snacks to school and an even higher percentage (73.4%) disagree with carrying fruits. This highlights low adherence to healthy snack and fruit consumption among students. Additionally, only 9.9% agree they received education on healthy

eating habits in school, while the majority (85.3%) remained neutral suggesting a limited or unclear impact of school-based education. Although some schools attempt to promote healthy through various initiatives, students' actual practices often do not align with these efforts. This highlights a gap between awareness and the practical implementation of healthy eating behaviours.

Peer influence on eating habits appears to be moderate, with 24.6% of students agreeing that their friends' food choices influence them, while 57.5% remain neutral. In contrast, a striking 81.2% disagree with the prohibition of bringing fast food and snacks to school, suggesting that such policies either be weakly enforced or lack widespread acceptance among students.

Overall, the data indicates a need for stronger initiatives in schools to promote healthy eating habits, including effective education programmes and stricter policies regarding unhealthy food consumption. Practical strategies such as increasing the accessibility of fruits and healthy snacks and fostering a supportive peer culture, may help bridge the gap between awareness and actual behaviour.

Table 6.7: Influence of School Environment on Food Habits

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Eat breakfast at school	53.1	13.0	33.9
Eat lunch at school	42.5	6.3	51.2
Lunch is purchased from the school canteen	50.2	34.2	15.6
Healthy snacks are carried to school	61.3	13.4	25.3
Fruits are carried to school	73.4	11.0	15.6
Received some form of education on healthy eating habits at school	4.8	85.3	9.9
Friends' food choices influence eating habits	81.2	9.5	9.3
Prohibition of bringing fast food and snacks to school.	53.1	13.0	33.9

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.3 Family Dietary Habits

The following table presents the influence of family dietary habits on individuals. The responses are categorized into percentages for Disagree/Strongly Disagree (D/SD), Neither Agree nor Disagree (NAD), and Agree/Strongly Agree (A/SA). It reveals that some healthy practices, such as eating meals at the dining table, are moderately observed (59.6%), while other important habits, such as eating breakfast at home before school, are less common, with only 11.4% agreeing. Additionally, the widespread use of screens during meals (51.2%) suggests less healthy eating practices within households.

Parental involvement in monitoring food choices and health consciousness appears limited, as the majority of respondents (65.0% and 77.1%, respectively) remained

neutral on these aspects. The availability of healthy food in the home also received mixed responses, with only 31.5% agreeing. Overall, the findings suggest that family dietary habits lack consistency in promoting healthy eating behaviours, showing a tendency toward convenience-oriented practices and limited active health monitoring by parents. This highlights the need for greater parental engagement and awareness to encourage healthier eating habits within families.

Table 6.8: Influence of Family Dietary Habits

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Eat breakfast at home before going to school	24.2	64.4	11.4
Watch television or screens while eating at home	36.9	11.9	51.2
Parents' closely monitor	9.5	65.0	25.5
Parents are health conscious.	4.3	77.1	18.6
At least one meal is eaten at the dining table	31.3	9.1	59.6
Takeaways or ordered food are consumed frequently	71.5	20.1	8.4
Family often dines out at restaurants	64.8	27.0	8.2
Plenty of healthy food is available in the home environment	10.8	57.7	31.5

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.4 Other Factors

6.4.1 Social Influence – (Explores the impact of peer groups, family, and societal trends on food habits)

Neutral responses dominated in this category, particularly regarding eating what friends eat (54.0%). However, Peer influence, particularly through popularity and social media trends, plays a significant role in shaping food habits among adolescents, with social media having a slightly weaker influence compared to peer popularity. Family preferences also exert a substantial influence, nearly half (49.0%) agreeing that they eat foods favoured by their family. The widespread neutrality across many statements suggests that urban adolescents experience diverse and complex influences on their food consumption habits.

Table 6.9: Social Influence of Urban Adolescents

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Food choices often reflect what friends eat	16.6	54.0	29.4
Certain foods are chosen since they are popular among my peers	14.0	30.5	55.5
Food trends on social media influence eating habits	37.4	20.5	42.1
Foods preferred by family members are commonly eaten	25.7	25.3	49.0

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.4.2 Economic Factors (Evaluates the influence of affordability and financial constraints on food preferences)

Cost plays a significant role food choices, with 65.2% of respondents agreeing that it is an important factor. Additionally, 76.9% are aware of the prices of the foods they buy, reflecting strong economic awareness. Affordability is a key preference, as 61.8% reported choosing affordable dining options. These results highlight that economic factors are major determinants of food choices among the respondents.

Table 6.10: Economic Factors

Statement	Percentage (%)		
	D/SD	NAD	A/SA
The cost of food is an important factor in food choices	17.9	16.8	65.2
Cheaper food options are often selected to save money	37.4	22.7	40.0
There is awareness of the prices of foods purchased	9.9	13.2	76.9
Preference is given to dining at affordable places	17.3	21.0	61.8

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.4.3 Cultural and Religious Influences - (Studies the impact of cultural traditions and religious beliefs on dietary habits).

The table highlights the varying influence of cultural and religious factors on food choices. Most respondents (64.1%) do not prioritize traditional foods, and a majority (78%) report that religious beliefs do not influence their food choices. However, a smaller group (27.2%) enjoys heritage-based foods, indicating some connection to cultural identity. Religious dietary restrictions are less strictly followed, with 69.5% disregarding them, although 25.1% adhere to such rules. Overall, cultural and religious influences appear to be insignificant for the majority of respondents.

Table 6.11: Cultural and Religious Influences

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Food choices reflect traditional cultural preferences	64.1	19.7	16.2
Religious beliefs influence food selection	78.0	6.5	15.6
Enjoyment is found in eating foods that evoke cultural heritage	46.4	26.3	27.2
Foods prohibited by religious practices are avoided	69.5	5.4	25.1

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

6.5 Awareness of Healthy Eating Habits

Table 6.12: Awareness of Healthy Eating Habits

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Unhealthy eating habits can increase the risk of health problems	22.5	65.0	12.5
Insufficient intake of fruits and vegetables can lead to illness	24.4	55.3	20.3
Consuming foods high in sugar and fat may result in diabetes or high blood pressure	35.5	45.2	19.3
Fruits help fight against certain infections	20.6	43.6	35.8
Vegetables support eye, bone and brain health	25.1	58.9	16.0
Eating breakfast daily helps improve school performance	18.2	31.0	50.8
Reducing the intake of unhealthy snacks contributes to increased strength and fitness	12.5	67.3	20.2

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

The analysis evaluates respondents' awareness of healthy eating habits through seven key statements. The responses are categorized into three groups: Disagree/Strongly Disagree (D/SD), Neither Agree nor Disagree (NAD), and Agree/Strongly Agree (A/SA). When asked about the risks of unhealthy eating, only 12.5% agreed/strongly agreed, while 22.5% disagreed/strongly disagreed, and a notable 65.0% remained neutral, suggesting limited clarity on the consequences of poor eating habits. Similarly, awareness of the importance of fruits and vegetables was mixed: 20.3% acknowledged that insufficient intake could lead to sickness, while 24.4% disagreed, and over half (55.3%) remained neutral.

Concerningly, 35.5% disagreed/strongly disagreed with the statement that excessive consumption of sugar and fat could lead to diabetes or high blood pressure, while 45.2% expressed no opinion, indicating a lack of understanding of diet-related health risks.

On a positive note, awareness the role of fruits in fighting infections showed relatively better results, with 35.8% agreeing. However, a significant 43.6% remained neutral, and 20.6% disagreed, highlighting the need for further education on this topic. Regarding the benefits of vegetables for eye, bone, and brain health, a large proportion (58.9%) remained neutral, while only 16.0% agreed, and 25.1% disagreed. Awareness about the importance of breakfast was higher, with half of the respondents (50.8%) agreeing that breakfast helps improve school performance, though 31.0% remained neutral and 18.2% disagreed. Lastly, while 20.2% agreed that eating fewer unhealthy snacks contributes to fitness, the majority (67.3%) remained neutral, and only 12.5% disagreed.

Overall, the high percentage of neutral responses suggests a lack of strong opinions or limited knowledge about the importance of healthy eating. Additionally, the notable proportion of disagreed/strongly disagreed responses on critical statements

highlights areas where awareness campaigns and educational initiatives are urgently needed. While some awareness of healthy eating benefits exists, the prevalence of neutral responses indicates that knowledge and conviction on these issues remain limited.

Areas such as understanding the risks of excessive sugar and fat intake, the importance of vegetables, and the role of a balanced diet require further educational efforts. Targeted campaigns can help bridge these knowledge gaps and foster a stronger understanding of healthy eating practices, ultimately leading to improved dietary behaviours. By increasing focused education on the health risks associated with poor eating habits and the benefits of a balanced diet, these initiatives can effectively promote healthier lifestyle choices.

6.6 Barriers to Healthy Eating Habits

The analysis of barriers to healthy eating habits among adolescent students reveals several challenges that hinder their ability to maintain a nutritious diet. A significant barrier is the issue of food brought from home being cold and unpleasant, with nearly half of the respondents (49.0%) agreed/strongly agreed, while 36.1% disagreed. Another notable concern is the unavailability of fruits at school canteens, with 46.7% agreeing and 31.2% remained neutral. Additionally, 37.5% of respondents disagreed that healthy food sold at school is expensive, while 45.2% were neutral, indicating mixed opinions regarding affordability.

The monotony of home-cooked meals was reported as a barrier by 21.6% of respondents, while a significant 60.5% remained neutral, suggesting this issue may not be widespread. Additionally, 47.9% agreed that salads are rarely served with meals at home, highlighting a gap in incorporating nutritious options into daily meals. Regarding knowledge and skills, 78.4% of respondents neither agreed nor disagreed about having sufficient knowledge to make healthy food choices. However, a positive finding is that 87.5% agreed they are confident in preparing light meals at home, indicating strong practical skills.

Parental busyness was identified as a factor limiting the availability of home-cooked meals, with 33.6% agreeing, although 44.1% disagreed. Limited access to healthy foods such as fruits, vegetables, and dairy at home was reported by 41.2% of respondents, indicating economic or availability challenges. Additionally, 30.2% agreed that obtaining even the main meal is difficult due to economic crisis, while 38.9% disagreed, reflecting disparities in economic situations among respondents.

Table 6.13: Barriers to Healthy Eating Habits

Statement	Percentage (%)		
	D/SD	NAD	A/SA
Food brought from home is often cold and unpleasant	36.1	14.9	49.0
Fruits are generally not available at the school canteen	22.1	31.2	46.7
Healthy food items sold in school tend to be expensive	37.5	45.2	17.3
Home cooked food meals are frequently repetitive and monotonous	17.9	60.5	21.6
Salads are seldom included with meals at home	18.1	34.0	47.9
There is sufficient knowledge to make healthy food choices	5.2	78.4	16.4
Preparing light meals at home is manageable	6.3	6.3	87.5
Due to parents busy schedules, home cooked meals are limited	44.1	22.3	33.6
Availability of healthy foods such as fruits, vegetables, and dairy products is limited at home	34.4	24.4	41.2
Obtaining even the main meal is challenging due to economic crisis	38.9	30.9	30.2

Note: SA-Strongly Agree, A-Agree, NAD-Neither Agree nor Disagree, D-Disagree, SD-Strongly Disagree

Source: Authors' own calculation based on field survey (2024)

The findings suggest that several barriers, including the availability, variety, and affordability of healthy food, as well as time constraints at home, hinder adolescent students' ability to maintain healthy eating habits. While students demonstrate confidence in preparing simple meals, limited access to nutritious food at home and school remains a significant challenge. Addressing these barriers through school-based initiatives, such as improving canteen offerings and promoting cost-effective healthy options, along with increased parental engagement to enhance meal variety, could help create a more supportive environment for healthier eating habits.

CHAPTER SEVEN

Potentials and Barriers for Achieving Healthy Diets for Urban Adolescents

This chapter discusses the potentials and barriers for achieving a healthy diet for adolescents. To achieve this, we conducted interviews with key informants such as school principals and teachers, healthcare professionals, school canteen owners and some parents to gather insights into the opportunities and challenges for promoting healthier eating habits among adolescents.

7.1 Description of the School Environment

Key informant interviews with 30 school principals and focus group discussions with relevant school staff were conducted to explore the opportunities and barriers to achieving healthy diets among adolescents. Discussions centered on school policies, food availability, student behaviour and preferences, parental and community influence, and identified both barriers and strategies to promote healthier eating.

7.1.1 School Policies and Environment

This section examines the formal measures implemented by schools to promote healthy eating habits, including canteen policies, healthy food initiatives, and monitoring mechanisms.

1. Canteen Policies

- A few schools enforce canteen policies that prohibit the sale of junk food.
- One school has adopted the *Hela Bojun* concept, promoting traditional and nutritious meals.
- While most schools have canteen committees to oversee operations, their effectiveness in implementing policies remains limited.

2. Canteen Committees

- Although these committees exist, they are often ineffective in monitoring and enforcing policies that support healthy eating.

3. Nutritional Awareness

- Most schools lack formal awareness campaigns or nutrition education programmes, limiting opportunities to promote healthy eating practices among students.

4. Healthy Food Initiatives

- Some schools promote traditional meals through initiatives like *kola Kenda* or cassava cultivation (e.g., Kirindiwela Central College).
- A few schools have introduced fruit juice and milk bars to encourage healthier food choices.
- Government school meal programmes are mainly limited to primary students.

- Food donation programmes, supported by donors, help provide meals for underprivileged students in upper grades.
- One or two schools conduct classroom food supervision to monitor students' meals.

5. Unique Approaches

- One school, in the absence of a canteen, provides meals through parental involvement and operates a fruit juice center in the school premises offering nutritious food items such as fruit salads, fruit pickles and fresh juices.

6. Restrictions on Food

- Most schools do not have formal restrictions on food brought to school or sold during events.
- Some schools prohibit the sale of certain items such as cakes and junk food to students.
- In a few schools, classroom monitoring programmes are occasionally implemented to oversee meals brought by students.
- Nearly all schools have banned lunch sheets to encourage environmentally friendly practices.

7.1.2 Food Availability

This section offers useful insights into the accessibility of healthy and unhealthy food options within the school environment. It highlights the facilities in school cafeterias, the quality and enforcement of canteen policies, and the presence of fast food outlets near schools.

i. Cafeterias and Snack Bars

- Most schools have functioning canteens that offer a variety of food options.
- A few schools have introduced milk and fruit juice bars to encourage healthier choices.

ii. Traditional Food Concepts

- One school operates its canteen under the *Hela Bojun* concept, emphasizing traditional and nutritious food.

iii. Schools without Canteens

- One school, despite lacking a canteen, provides a fruit juice bar offering healthy beverages.

iv. Nearby Food Outlets

- Almost all schools have food outlets near their premises, except one school that has no nearby shops or boutiques.

7.1.3 Student Behaviour and Preferences

This theme highlights the factors that influence students' food choices, including cultural, social, and economic conditions, as well as individual preferences. According to the principals, key influences include economic conditions, family

background, social media influences, parental behaviour, lack of parental care and supervision, social pressures, parents' education and occupation, children's personal preferences, and the growing trend of attending tuition classes.

i. **Popular Foods**

- Students commonly prefer snacks such as short eats and sweet foods, with *murukku* being particularly popular.
- There is a growing trend toward consuming fried rice in many schools, indicating a shift toward more substantial meals; however, this trend is still in developing stage.

ii. **Times when Unhealthy Foods are Chosen**

- Unhealthy food choices are most frequently made after school, particularly during tuition classes.

iii. **Receptiveness to Healthier Food Options**

- Introducing healthier food options remains a challenge, as students often resistant to change.
- Nonetheless, some schools have successfully implemented fruit juice and milk bars, which have been well-received by students, with many expressing a preference for these healthier alternatives.

7.1.4 Parental and Community Influence

i. **Parental Influence**

- Some schools have introduced initiatives such as *Kola Kenda* and other nutrition programmes, which have garnered strong parental support, especially in the primary grades.
- However, similar programmes are noticeably lacking in the upper grades.
- Parents' education levels and behaviours play a significant role in shaping students' dietary habits.

ii. **Community Influence**

- The wider community, including advertisements, tuition classes, peer influence, and the availability of food significantly impacts students' eating behaviours. These external factors often influence students' food choices beyond the reach of school-based programmes.

7.1.5 Barriers to Healthy Eating

Barriers to healthy eating were identified at structural, social, and individual levels, highlighting the complex challenges faced by both schools and students in promoting healthy diets. As key community leaders, principals offer valuable insights into these challenges. Together with school staff, they identified several factors influencing students' dietary behaviours across multiple levels.

i. Structural Barriers

- Gaps in educational and agricultural policies limit support available for promoting healthy diets.
- The growing presence of fast food chains in urban areas has shifted student preferences toward unhealthy options.
- Local employment conditions and ongoing urbanization further contribute to these issues.

ii. Social and Cultural Barriers

- Traditional foods are often perceived negatively, particularly due to their taste and odor.
- Locally grown ingredients may be stigmatized as indicators of lower social status.
- The presence of nearby food vendors offering unhealthy alternatives creates competing for healthier options.

iii. Individual and Awareness Barriers

- The lack of comprehensive awareness programmes limits knowledge about healthy eating among both students and parents.
- Societal shifts such as urbanization and increased female labour participation have led to a greater demand for processed convenience foods

7.1.6 Strategies to Improve Food Choices

Principals and school staff proposed several strategies to address these barriers and promote healthier eating habits among students:

- Strengthen school canteen policies to ensure compliance and encourage healthier food options.
- Implement stricter government regulations to monitor and limit the sale of unhealthy foods
- Introduce creative awareness programmes such as short films and school dramas to educate students and parents about healthy diets.
- Expand school meal programmes beyond the primary grades to benefit students at all levels.
- Provide schools with resources to support healthy eating initiatives, including the development of school gardens where feasible.
- Establish a national programmes, jointly led by the Ministry of Health and Ministry of Education, to promote healthier lifestyles and long-term well-being among students.

Based on key informant interviews and focus group discussions with school staff, it can be resolved that while some schools have implemented initiatives to promote healthy diets, significant barriers persist at structural, social, and individual levels. Limited access to healthy food options, ineffective policies, and student resistance to change continue to hinder progress. Addressing these challenges requires a multi-stakeholder approach involving schools, parents, communities, and government

authorities. By implementing robust awareness programmes, improving canteen operations, and fostering a supportive food environment, urban adolescents can be empowered to make healthier dietary choices.

7.2 Description of the School Canteen

7.2.1 Current State of Canteen Practices

Key informant discussions provided the following insights into canteen operations and the extent of adherence to established standards:

- Most canteen owners have been running their businesses for over a year; however, many do not comply with established canteen policies.
- Only a few school canteens are monitored by active canteen committees and meet acceptable standards for hygiene and food quality.
- The majority of canteens fall below expected standard due to poor cleanliness, inadequate facilities, and limited infrastructure for food preparation and sales.
- High-priced junk foods and fast foods, such as cupcakes, doughnuts, pizza, burger buns, and sugary beverages, are more prevalent in private school canteens, where no monitoring or regulatory measures are in place.

7.2.2 Popular Food Items

Canteen owners reported the following trends in students' food preferences:

- **Common Food Choices:** Rolls, patties, cutlets, *murukku*, cupcakes, buns, sweet items, fried rice, doughnuts, burgers, and *wade*.
- **Variations by Age and Gender:**
 - **Younger Children:** Tend to prefer sweet items such as cupcakes and doughnuts.
 - **Adolescents:** Prefer savory snacks like rolls and *wade*.
 - **Adolescent Girls:** Often choose lighter snacks such as *murukku*, rolls, *wade*.
 - **Adolescent Boys:** Frequently opt for buns and rice-based meals.
- **Purchasing Behaviour:** Boys are more actively involved in purchasing food from canteens, while girls, show comparatively lower participation.

7.2.3. Attempts to Promote Healthy Eating

Several canteen owners have taken steps to introduce healthier food choices. One or two schools conduct classroom food supervision to monitor students' meals.

- Healthier items such as *kurakkan porridge*, *kola kenda*, *manioc*, *iramusu*, *belimal*, and *fruit-based products (juices, salads, pickles)* are now offered.
- Innovative approaches include providing affordable healthier options, such as fruit juices or salads, priced within students' budgets (e.g., Rs. 20).

7.2.4 Challenges in Promoting Healthy Food

Canteen owners face several challenges in encouraging healthier food choices:

- **Low Demand for Healthy Items:** Students are often reluctant to purchase healthy food, resulting in significant food wastage.
- **Economic Impact:** The lack of demand for healthy items reduces canteen owners' income, discouraging them from continuing to offer such options.
- **External Factors:** Parents often send junk food with their children, undermining efforts to promote healthier eating habits through the canteen.

7.3 Recommended Strategies

To overcome key challenges, schools and canteen owners can work together by strengthening policy enforcement, conducting awareness campaigns, offering incentives, and building partnerships with parents and students. These efforts will help promote healthier food choices and foster a supportive environment for improved student nutrition.

1. Improve Policy Enforcement

- Strengthen the implementation of existing canteen policies.
- Actively involve school committees in regularly monitoring of hygiene, food quality, and adherence to standards.

2. Awareness Campaigns

- Conduct awareness sessions for parents, students, and teachers on the benefits of healthy eating and the risks associated with junk food.
- Use posters, school assemblies, and interactive activities to highlight the value of nutritious food.

3. Incentivize Healthy Choices

- Offer small rewards, discounts, or recognition to students who purchase healthy food items.
- Collaborate with schools to integrate healthier meals into existing lunch programmes.

4. Engage Students in Decision-Making

- Conduct student surveys to identify their preferred healthier alternatives.
- Organize taste-testing events to familiarize students to new and appealing healthy options.

5. Partner with Parents

- Encourage parents to support school healthy food initiatives by avoiding the inclusion of junk food in lunchboxes.
- Develop newsletters, informational brochures, or regular communications to highlight the important role parents play in promoting balanced diets

By addressing these key areas, schools and canteens can work together to improve food quality, promote healthier options, and create a supportive environment for better student nutrition.

7.4 Strategies Using in Other Countries

1. *United States: School Meal Programs*
Implementing nutritious school meal programs (e.g., USDA's National School Lunch Program) (USD Website)
2. *Japan: Nutrition Education Through "Shokuiku"*
Incorporating "Shokuiku" (Food education) into schools (MAFF Website)
3. *Brazil: Restricting Unhealthy Food Advertising*
Enforcing strict advertising regulations on unhealthy foods targeting adolescents (WHO Website).
4. *Australia: Community Gardens and Cooking Workshops*
Promoting community gardens and workshops (Health.gov.au.)
5. *France: Family Meals and Portion Control*
Encouraging shared family meals and teaching portion control (Mejean, et al.2013).
6. *India: Fortification and Midday Meal Schemes*
Providing fortified foods and balanced meals through programs like the Midday Meal Scheme (Education.gov.in).
7. *Scandinavia: Healthier Food Policies in Schools*
Ensuring healthy, government-approved meals in schools (Nordic Co-operation Website).

CHAPTER EIGHT

Key Findings, Conclusions and Recommendations for Promoting Healthy Diets for Urban Adolescents

8.1 Key Findings

- **Physical Activities** - A significant number of government school students do not engage in physical activities, primarily due to time constraints from heavy academic workloads and tuition classes. In contrast, 72% of private school students actively participate in physical activities.
- **Pocket Money** - Government school students generally receive lower pocket money, with most spending Rs. 100-250 on food. In contrast, private school students receive higher allowances, with a larger proportion spending Rs. 251-500, and some even exceeding Rs. 1,000. These spending patterns reflect the differing socio-economic backgrounds, between the two groups of students.
- **Skipping Meal** - More than half of the students (57%) from both government and private schools regularly skip a meal, with breakfast being the most commonly skipped (46%). The main reasons for skipping meals are lack of time due to busy schedules (58%), lack of interest in eating (30%), and unavailability of food (12%).
- **Weekly Food Intake Frequency** - Students' diets are heavily reliant on cereal-based foods, particularly rice, with low daily consumption of fruits, vegetables, and pulses. Sugary beverages and junk food are consumed daily by a significant proportion, while protein-rich foods such as fish, meat, and eggs are consumed less frequently. These patterns deviate from recommended dietary guidelines, highlighting the need for increased awareness of balanced nutrition and healthier eating habits, particularly promoting higher intake of fruits, vegetables, and functional foods while reducing consumption of junk food and sugary beverage.
- **Snacking Habits and Preferences** - A large majority of students (80%) snack daily. Government school students tend to choose lower-cost snacks compared to their private school counterparts, reflecting differences in affordability and accessibility. Encouraging healthier snacking habits support improved dietary choices among adolescents.
- **Personal Attributes** - The analysis reveals a generally low level of health consciousness among adolescents, with taste and convenience being prioritized over health considerations in their food choices. Emotions significantly influence eating behaviour, and many students lack of structured eating routines. Furthermore, there appears to be a gap in formal nutrition education, limiting students' ability to apply nutritional knowledge in their daily food decisions.

- **Factors in School Environment** - There is low adherence to healthy eating initiatives within schools, accompanied by moderate peer influence and significant resistance to fast food bans (81.2%). These findings highlight the need for stronger programmes, stricter policy enforcement, better access to healthy snacks, and a supportive peer culture to encourage healthier eating habits.
- **Factors in Family Environment** - Family dietary habits show inconsistency. While some moderate practices, such as dining together (59.6%), are observed, essential habits like eating breakfast are followed by only a small proportion (11.4%). Unhealthy behaviours, such as screen use during meals (51.2%), are common, and parental involvement in food monitoring and health awareness is limited. Increased parental engagement is needed to foster healthier eating behaviours at home.
- **Other Influencing Factors** - Adolescents' food choices are influenced by peer popularity, social media, and family preferences (49.0%). However, a large portion (54.0%) provided neutral responses, suggesting varied or unclear influences. Economic factors play a major role, as affordability and price awareness shape food choices. Cultural and religious influences appear minimal, with most students not prioritizing traditional or religious dietary practices, although 27.2% expressed enjoyment of heritage foods.
- **Barriers Faced by Adolescents** - Adolescents face several barriers to healthy eating, including cold home-packed meals, limited fruit availability at school, and monotony in home-cooked meals. Economic challenges further restrict access to nutritious food, while parental busyness limits meal variety. Although many adolescents feel confident preparing simple meals, improvements in school canteen options, food affordability, and parental involvement are essential to support healthier eating habits.
- **School Policies and Environment** - Schools have limited measures to promote healthy eating. While some enforce junk food ban and offer traditional meals, canteen committees are often ineffective, and most schools lack formal nutrition awareness programmes. Healthy food initiatives, such as fruit juice bars, are sporadic, and government meal programmes mainly target primary students. Some schools engage parents in meal provision or operate fruit juice centers. Many schools lack specific food restrictions, and only a few monitor meals in classrooms. However, most schools have banned lunch sheets for environmental reasons.
- **Food Availability in School Environment** - Most schools have functioning canteens offering a variety of food options, with some introducing milk and fruit juice bars to encourage healthier choices. One school follows the Hela Bojun concept, emphasizing traditional and nutritious foods, while another uses a fruit juice bar to compensate for the absence of a canteen. Nearly all schools have nearby food outlets, except one school that lacks any surrounding shops.

- **Student Behaviour and Preferences in School Environment** - Students generally prefer snacks such as short eats and sweets, with *murukku* being particularly popular. There is also a growing trend toward fried rice as a more filling meal. Unhealthy food choices are most prevalent after school, especially during tuition classes. Although introducing healthier options is challenging due to student resistance, some schools have successfully implemented fruit juice and milk bars, which have been well-received and preferred by many students.
- **Common Food Choices:** Rolls, patties, cutlets, *murukku*, cupcakes, buns, sweet items, fried rice, doughnuts, burgers, and *wade*.
- **Variations by Age and Gender:**
 - **Younger Children:** Tend to prefer sweet items such as cupcakes and doughnuts.
 - **Adolescents:** Prefer savory snacks like rolls and *wade*.
 - **Adolescent Girls:** Often choose lighter snacks such as *murukku*, rolls, *wade*.
 - **Adolescent Boys:** Frequently opt for buns and rice-based meals.
- **Purchasing Behaviour:** Boys are more actively involved in purchasing food from canteens, while girls, show comparatively lower participation.
- **Parental and Community Influence** - Parental and community factors significantly shape students' dietary habits. While initiatives like *kola kenda* and other nutrition programmes for younger students have garnered strong parental support, similar efforts are often absent in upper grade levels. Parents' education and behaviours directly influence students' food choices, while external factors, such as advertisements, tuition schedules, peer influence, and food availability, further affect eating patterns beyond the school's control.
- **Awareness of Healthy Eating Habits** - There is a general lack of understanding about diet-related health risks among students. While some awareness of the benefits of healthy eating exists, the high percentage of neutral responses across all statements suggests limited knowledge or a lack of strong opinions on the importance of healthy dietary habits.
- **Barriers to Healthy Eating in the School Environment** - Students face multiple barriers to healthy eating, stemming from structural, social, cultural, and individual factors. Structural barriers include gaps in educational and agricultural policies, the widespread influence of fast food chains, and urbanization-driven shifts in preferences. Social and cultural challenges such as negative perceptions of traditional foods, stigma toward locally grown ingredients, and competition from unhealthy food sellers further complicate healthy eating. At the individual level, limited awareness programmes and societal shifts, including urbanization, increased female workforce participation and reliance on convenience foods, also contribute to poor dietary choices.

- **Current State of Canteen Practices** - Many school canteens do not meet required standards. Most canteen operators neglect established policies, even after operating for more than a year. Only a small number of canteens are managed by active committees that ensure basic hygiene and food quality. Common issues include poor cleanliness, inadequate facilities, and limited infrastructure for food preparation and sales.
- **Efforts and Challenges in Promoting Healthy Food in School Canteens** - Efforts to promote healthy eating in school canteens have made some progress, with canteen owners introducing items like *kurakkan* porridge, *kola kenda*, manioc, fruit juices, and salads at prices affordable to students. However, these initiatives face significant challenges, including low student demand often results in food wastage and reduced income for canteen owners, discouraging them from continuing such offerings. Additionally, external factors, such as parents providing junk food from home, undermine these efforts and hinder the wider adoption of healthier eating habits among students.

8.2 Conclusions

Investing in adolescent nutrition is an investment in the future health and well-being of the nation. This study assessed the food consumption patterns, food habits, preferences and food habits among school going adolescents in urban areas. The findings reveal that students' diets are heavily reliant on cereal-based foods, particularly rice, with low daily consumption of fruits, vegetables, and pulses. While sugary beverages and junk foods are consumed daily by a significant number of students, protein-rich foods such as fish, meat, and eggs are consumed less frequently. These patterns deviate from recommended dietary guidelines, highlighting the need for greater awareness of balanced nutrition and healthier eating habits.

The study identifies a range of challenges and opportunities for promoting healthy eating habits among school students. Structural, social, and individual barriers significantly influence dietary behaviours, with factors such as inadequate policies, urbanization-driven lifestyle changes, and limited nutrition awareness contributing to unhealthy eating patterns. Although some schools and canteen owners have introduced healthier food options, these efforts are often hindered by low demand, economic constraints, and external influences such as parental and peer behaviours.

To overcome these challenges, a multi-stakeholder approach involving schools, parents, communities, and government authorities is essential. Implementing effective awareness programmes, improving canteen operations, and creating a supportive food environment can empower urban adolescents to make healthier dietary choices.

The school environment plays a critical role in shaping students' dietary habits, yet many schools lack effective policies and the necessary infrastructure to enforce

healthy eating standards. Poor canteen practices, limited parental involvement, and inadequate nutritional education further exacerbate the issue. Students' preferences for convenience, taste, and affordability over health highlight the need for targeted interventions that address both behavioural and environmental factors.

Promoting healthier eating habits requires a holistic approach. This includes stronger policy enforcement, enhanced awareness programmes, active parental and community involvement, and improved school infrastructure to ensure healthy food options are accessible, affordable, and appealing. By addressing these interconnected challenges, schools and communities can create an environment that supports balanced nutrition and long-term health of students.

8.3 Recommendations

1. Policy and Governance - Strengthen and enforce regulations to ensure healthier food environments

Strategies:

- Develop and implement comprehensive canteen policies that mandate provision of healthy food options and prohibit the sale of unhealthy items.
- Ensure regular monitoring and evaluation by school canteen committees to promote compliance with policies.
- Introduce government issued guidelines outlining standards for school canteens, including hygiene, food quality, and affordability.
- Enact regulations to restrict the marketing and advertising of unhealthy foods and beverages targeting at adolescents

2. Awareness and Education - Foster awareness of the benefits of healthy eating among students, parents, and staff.

Strategies:

- Conduct nutrition awareness campaigns using creative methods such as posters, assemblies, dramas, and short films in collaboration with the Ministry of Health.
- Integrate nutrition education into the school curriculum at all levels.
- Train teachers to serve as health ambassadors who promote and model healthy behaviours.
- Utilize social media platforms and youth-oriented platforms to reach a wider audience and engage adolescents effectively.
- Implement public health campaigns targeting both adolescents and parents to emphasize the importance of balanced diets.

3. Food Availability and Accessibility - Increase access to affordable, nutritious food options in schools.

Strategies:

- Establish milk bars, fruit juice centers, and traditional food stalls in school canteens in collaboration with the Ministry of Agriculture.

- Encourage schools to cultivate garden to provide fresh produce to school meals.
- Ensure a balance between cost and quality to make healthy options economically viable for students and canteen owners.
- Implement a nutritious meal programme for upper-grade classes in selected schools.
- Considering the high frequency of snack consumption among students, schools could actively promote healthier snack options to support students' overall well-being. Practical strategies to encourage healthier habits such as improving access to fruits and nutritious snacks and fostering a supportive peer culture that normalizes and encourages healthy eating. These measures can help bridge the gap between awareness and practice.

4. Parental and Community Engagement - Align parental and community practices with school initiatives to sustain healthy eating habits.

Strategies:

- Collaborate with parents to discourage the inclusion of junk food in lunchboxes and emphasize the importance of balanced diets. Collaborate with parents to discourage the inclusion of junk food into lunchboxes and reinforce healthy eating at home
- Distribute newsletters and informational brochures, and regular communications to educate parents on their role in promoting/supporting children's health and nutrition
- Partner with local businesses and community organizations to promote and sustain healthy food initiatives in schools.
- Collaborate with local leaders and organizations to encourage culturally appropriate dietary practices that align with health goals.

5. Student-centered Approaches - Empower students to take ownership of their dietary habits.

Strategies:

- Conduct surveys to gather student feedback on preferred healthy food options.
- Organize taste-testing events to introduce students with new and appealing nutritious food items.
- Reward students for choosing healthier foods through incentives, recognition programmes or point-based reward systems.

6. Addressing Social and Cultural Barriers - Shift perceptions around traditional and locally grown foods to make them more appealing.

Strategies:

- Promote traditional foods such as *kola kenda* and *kurakkan* porridge through engaging events or cooking competitions.

- Use storytelling or cultural programmes, and school activities to highlight the historical and health importance and health benefits of traditional meals.

7. Structural Support - Build infrastructure and resources to support healthy food practices.

Strategies:

- Provide financial assistance to upgrade school canteens, ensuring they meet hygiene, safety, and food preparation standards.
- Expand school meal programmes to include all grade levels, particularly in government schools where affordability remains a key concern.
- Collaborate with the Ministry of Health and Ministry of Education to launch a national initiative promoting healthy lifestyles among students.

Expected Outcomes with the Recommendations:

- Improved access to nutritious and affordable food options in schools.
- Increased awareness and understanding of healthy eating practices among students, parents and school staff.
- Strengthened collaboration between schools, parents/families, and communities.
- Reduced consumption of unhealthy foods and sugar-sweetened beverages among adolescents.

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Web www.harti.gov.lk

ISBN: 978-624-5973-60-9



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