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Current Diabetes Prevalence in Sri Lanka: A Comprehensive Literature Review

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Abstract

Worldwide, the prevalence of diabetes was estimated at 9.3% in 2019, affecting approximately 500 million people. This study presents a comprehensive review of existing literature to examine the trends, prevalence, causes, and distribution patterns of diabetes within Sri Lanka. Adopting a descriptive research approach, the study utilizes secondary data sourced from research articles, academic journals, publications, annual reports, books, and official online databases. The findings reveal alarming trends, with projections suggesting that one in five individuals may be affected by diabetes in Sri Lanka by 2030. Several factors contribute to this increase, including psychological stress, historical circumstances, central obesity, dietary transitions, socioeconomic determinants, and genetic predispositions. Notably, disparities exist across gender, ethnic groups, and urban-rural populations. For instance, the prevalence of diagnosed diabetes is higher in urban areas (24.7%) compared to rural areas (11.9%) and estate sectors (4.6%), and higher in women (15.3%) than men (13.2%). Delayed diagnosis and inadequate disease management further exacerbate complications, including cardiovascular disease, renal failure, and blindness. Mitigation strategies highlighted in this review include the initiatives which should be taken by the Diabetic Association of Sri Lanka, dietary modifications, increased physical activity, and lifestyle interventions. Future directions to address this growing public health challenge encompass the integration of technology, community-based programs, policy reforms, and personalized medicine. This study underscores the urgent need for tailored interventions to address the complex and multifaceted nature of diabetes in Sri Lanka, with the ultimate goal of improving population health and well-being.

Keywords: Diabetes**,** Stress**,** Disease**,** Technology, Programs

1. Introduction

According to data from the World Health Organization (WHO), noncommunicable diseases (NCDs) claim the lives of about 41 million people worldwide each year, accounting for roughly 71% of all deaths worldwide. More than 15 million of these deaths are premature deaths among people aged 30 to 69, and 85% of these people live in lower- and middle-income countries (WHO, 2022). The four major categories of NCDs, cancer, diabetes, chronic respiratory diseases, and cardiovascular conditions, are the leading contributors to this global health burden. Among these, diabetes is particularly

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concerning due to its high prevalence and significant contribution to morbidity and mortality. Globally, diabetes affected an estimated 8.5% of adults aged 18 years and older in 2014, and was directly responsible for 1.5 million deaths in 2019 (WHO, 2021). In the same year, approximately 463 million people were living with diabetes worldwide, a number projected to rise to 578 million by 2030. Notably, three out of four people with diabetes reside in resource-constrained countries, highlighting the substantial economic and social burden posed by the disease on healthcare systems and societies (Katulanda, Sheriff, & Matthews, 2006; Thayaparan et al., 2022).

Diabetes is a chronic metabolic disorder that affects the body's ability to convert food into energy (Panapitiya, 2020). There are three primary types of diabetes:

- **Type 1 Diabetes:** This form is caused by an autoimmune reaction in which the body attacks its own insulin-producing cells, leading to insulin deficiency. Type 1 diabetes accounts for 5–10% of cases and typically develops in children, adolescents, or young adults. Daily insulin administration is required for survival, and there is currently no known method for prevention.
- **Type 2 Diabetes:** Characterized by insulin resistance, type 2 diabetes makes it difficult to regulate blood glucose levels. It represents 90–95% of all diabetes cases and usually develops gradually in adults, although incidence among children and young adults are rising. Many individuals may remain asymptomatic, making regular monitoring essential.
- **Gestational Diabetes:** This form develops during pregnancy in women without a prior history of diabetes. While it often resolves postpartum, it increases the mother's long-term risk of developing type 2 diabetes and may pose health risks for the child (Centers for Disease Control and Prevention, 2023).

Diabetes can significantly reduce life expectancy and adversely affect quality of life. In 2019, the global prevalence of diabetes was approximately 9.3%, affecting around 500 million people, with projections indicating an increase to 10.2% in the coming years (Ramachandran, 2012). The disease frequently co-occurs with hypertension, further complicating its management and increasing the risk of serious complications (Thuvaragan et al., 2022).

In Sri Lanka, diabetes has become a pressing public health concern, with its prevalence steadily increasing across both urban and rural communities. Although several national surveys and individual studies have been conducted,

there remains a noticeable gap in the comprehensive synthesis of existing evidence on the distribution, determinants, and socio-demographic variations of diabetes within the country. Bridging this gap is vital for designing targeted public health interventions and formulating evidence-based policies. A detailed understanding of the prevalence patterns, underlying risk factors, and challenges within the healthcare system will enable policymakers, healthcare professionals, and community organizations to implement more effective strategies for prevention, management, and public awareness. Therefore, this study was conducted to provide a comprehensive analysis of the current evidence on diabetes in Sri Lanka, aiming to support informed decision-making and contribute to the development of effective health strategies that can reduce the disease burden and improve the overall well-being of the population.

2. Objectives

I. To analyze the major causes and associated risk factors contributing to the prevalence of diabetes in Sri Lanka.

II. To evaluate the current prevalence, emerging trends, and demographic distribution of diabetes across different regions of Sri Lanka.

III. To examine existing mitigation measures and propose effective strategies for the management and prevention of diabetes within the Sri Lankan context.

3. Methodology

In order to achieve the objectives of this study, data were collected from secondary sources. Relevant secondary data, including research articles, journals, publications, annual reports, books, and official online sources, were gathered and analyzed. In addition, to supplement the secondary data, references were drawn from pertinent national and international literature and research papers related to the subject matter of this study. The collected data were subjected to qualitative analysis, and the findings are presented descriptively in this research.

4. Results and Discussion

4.1 The Global Trends and Prevalence of Diabetes

Studies show that by 2030, diabetes will be the fifth most common cause of death worldwide. Today, over 420 million people worldwide have diabetes, a number that has quadrupled since 1980 and is projected to rise beyond half a billion by the end of the decade. Worldwide deaths from diabetes rose by

70% between 2000 and 2019 (World Diabetes Day 2021, n.d.). It is currently the seventh leading cause of death worldwide, according to the World Health Organization. Nearly 6% of people worldwide suffer from diabetes, making it the most prevalent endocrine condition at the moment. In 2017, there were about 425 million adults aged 20 to 79 who had diabetes, according to recent estimates from the International Diabetes Federation. By 2035, there will be nearly 600 million diabetic patients, and by 2045, there will be 700 million. Approximately one-fifth of the 382 million individuals with diabetes worldwide are between the ages of 40 and 59, and the International Diabetes Federation (IDF) reports that diabetes is particularly prevalent in low- and middle-income nations. (Rannan-Eliya et al., 2023).

South Asia, sometimes known as the Indian subcontinent, is home to nearly 25% of the world's population. Specifically, South Asian countries are seeing an increase in the prevalence of diabetes (Shaw et al., 2010), with an estimated 58.7 million diabetic patients in 2010 and 101 million in 2030. According to the International Diabetes Foundation, South Asia spent about US $9.5 billion on diabetes-related medical care in 2017. Increased life expectancy, fast population growth, unplanned urbanization, and low healthcare spending may all contribute to the growing burden (Islam & Zaffar Tahir, 2002). South Asian immigrants are more likely than other ethnic groups to have type 2 diabetes, according to numerous studies conducted in the West. Furthermore, compared to Europeans, South Asians typically develop prediabetes earlier in life and develop diabetes more quickly (Feng et al., 2019).

Urban South Asia has a high prevalence of diabetes, which has been linked to sedentary lifestyles and increased consumption of fast food high in sugar and saturated fats as a result of social, cultural, and economic globalization (Goryakin et al., 2015). However, compared to urban areas, rural areas have weaker health systems and worse outcomes from diabetes complications. According to reports, between 7.5% and 32% of people with hypertension also have diabetes. Research on hypertensive individuals revealed diabetes risk factors that were comparable to those found in the general population (Gupta et al., 2008). such as medical issues (overweight or central obesity and dyslipidemia), unhealthy lifestyle factors (smoking and lack of physical activity), and demographic factors (older age and male gender). Studies comparing the cross-country prevalence and determinants of diabetes among hypertensive people in rural South Asia are scarce, though (Feng et al., 2019). Similarly, we can observe the pattern of diabetes worldwide.

4.2 The Trend of Diabetes in Sri Lanka: An Overview

Sri Lanka, a middle-income South Asian nation of approximately 21 million people, is at the forefront of the global effort to combat non-communicable diseases, one of the biggest health threats facing the world today. According to WHO (2016) and Assalla (2018), the leading causes of death in Sri Lanka are cancer, diabetes, chronic respiratory conditions, and cardiovascular diseases, which take the lives of 103500 people annually. With the exception of some Middle Eastern nations and Pacific Island hotspots, Sri Lanka has the highest age-standardized prevalence of any nation, according to the NCD-Risk global estimates for 2014. Given the high relative risk of diabetes in South Asian populations and recent estimates of comparable diabetes prevalence in Tamil Nadu, the Indian state closest to Sri Lanka and one with significant cultural and ethnic ties, this is not surprising. Being the wealthiest country in South Asia with the highest rates of overweight and obesity may be the cause of Sri Lanka's high prevalence (Rannan-Eliya et al., 2023).

Increased rates of obesity and physical inactivity are major contributors to the rising prevalence of diabetes. 8% of adults had diabetes, according to the 2015 STEPS survey. According to the survey, 30.4% of Sri Lankan adults did not meet the recommended weekly intake of 150 minutes of moderate-intensity physical activity, with women (38.4%) being more inactive than men (22.5%). However, there are more deaths from diabetes in men than in women. In Sri Lanka, the three primary forms of diabetes are gestational, type 1, and type 2 (Madhusanka et al., 2020). One in twelve adults in Sri Lanka has diabetes, with 1,198,100 cases reported in total in 2017. The World Health Organization estimates that 8.5% of adults over the age of 18 had diabetes in 2014. Diabetes was the direct cause of 1.6 million deaths in 2016, and high blood glucose was the cause of 2.2 million deaths in 2012. In Sri Lanka, there are 4 million people with diabetes. One in five Sri Lankans, or about 20% of the country's total population, suffers from diabetes (Panapitiya, 2020).

In addition, the percentage of Sri Lankans aged 20 and older who have diabetes was 10.3% in 2006 and is expected to rise to 13.9% by 2030. Both locally and globally, the prevalence of pre-diabetes and diabetes has gradually and steadily increased in recent decades. Approximately one-third of adults in Sri Lanka who present with pre-diabetic or diabetic conditions go undiagnosed, which is a significant cause for concern. The overall prevalence of dysglycemia, which includes different levels of impaired glucose regulation, was 21.8% (Katulanda et al., 2008). According to a recent study conducted in Sri Lanka, there was a noticeable increase in the urban

prevalence of diabetes and pre-diabetes compared to data collected ten years earlier. Additionally, in 2019, the combined prevalence of diabetes and pre-diabetes within the Colombo metropolitan area was found to be 57.9%. At the same time, the rate of death and morbidity from both macrovascular and microvascular complications of diabetes has uncomfortably increased in Sri Lanka. Notably, 714 hospital deaths in 2019 were related to diabetes, which accounts to a death rate of 3.3 per 100,000 population members. In particular, compared to other districts, the Batticaloa district had a comparatively higher mortality rate (Munasinghe, 2021). A significant percentage of people are unaware that they have diabetes because the disease is latent and asymptomatic (Thayaparan et al., 2022).

To control their diabetes and prevent complications, people with the disease need constant care and assistance. Since diabetes is a leading cause of blindness, kidney failure, heart attacks, strokes, and lower limb amputation, the consequences of inadequate treatment are dire. Therefore, we must understand the causes of diabetes and its distribution pattern throughout Sri Lanka if we hope to lessen this problem.

4.3 The Causes of Diabetes in Sri Lanka.

This thorough analysis explores Sri Lanka's complex diabetes causes. This analysis seeks to clarify the interactions between different factors that contribute to the prevalence of diabetes among people in Sri Lanka by synthesizing recent research. Formulating successful prevention and management strategies within the healthcare system requires an understanding of these determinants.

High blood glucose (or blood sugar) levels are a hallmark of diabetes, a chronic metabolic disease that over time causes major harm to the heart, blood vessels, eyes, kidneys, and nerves (WHO, 2023).

4.3.1 Psychological Stress and Historical Context

Sri Lankans are still affected by the long-lasting effects of the country's civil war, which ended in 2009. One significant effect has been the increased incidence of anxiety and depression in Sri Lankans, which has been epidemiologically associated with a higher risk of diabetes. The physiological impacts of stress on the body, such as the release of hormones like cortisol and catecholamines, are the cause of this association. Increased glucose production, decreased insulin sensitivity, central fat accumulation, inflammation, and the adoption of unhealthy lifestyle choices are all consequences of these hormonal changes (Munasinghe, 2021).

4.3.2 Unmeasured Factors and Interaction

Unmeasured variables such as dietary habits, exposure to organochlorine pesticides, family history of diabetes, and inflammatory markers may also be responsible for the higher prevalence of diabetes among hypertensive people in Sri Lanka. The complex interactions between these variables within various ethnic groups may be a major factor in the increased risk of diabetes (Eliya, Wijemunige, Parera , Kapuge, & Gunawardhana, 2023)

4.3.3 Central Obesity

Studies show that among South Asian populations, central obesity, as measured by waist circumference, is a better predictor of diabetes comorbidity than total body mass index (BMI). The significance of this factor is highlighted by the propensity of South Asians to have higher levels of insulin resistance and abdominal fat than Caucasians. A higher risk of diabetes can result from insulin resistance and glucose intolerance caused by abnormal patterns of abdominal fat distribution (Thayaparan et al., 2022).

4.3.4 Dietary Factors

One of the main causes of Sri Lanka's rising diabetes prevalence has been the country's move toward Westernized eating habits. These dietary habits, which are marked by a low intake of fiber and a high intake of processed foods, sugars, and unhealthy fats, have significantly increased the disease's prevalence. Regression analyses revealed several noteworthy factors, including dietary practices like eating whole grains and egg yolks frequently and consuming fewer sweetened foods (Thayaparan et al., 2022; Katulanda, Sheriff, & Matthews, 2006). It is recognized that people with diabetes may change their diets to include fewer sweets and more whole grains as part of their management, even though consuming fewer sweets is traditionally linked to a lower risk of developing the disease (Feng et al., 2019).

4.3.5 Socioeconomic Status and Awareness

In contrast to patterns seen in other areas, it was discovered that people from higher socioeconomic strata in Sri Lanka had a surprisingly higher prevalence of comorbid diabetes. This disparity demonstrates the difficult situation, where access to high-quality diabetes treatment is still scarce, even in rural areas with comparatively higher socioeconomic status. Significantly, poor diabetes outcomes continue to exist in South Asia across all socioeconomic levels, highlighting the pressing need for improved access to healthcare (Panapitiya, 2020). Moreover, delayed diagnoses and subpar disease management have resulted from Sri Lankans' lack of knowledge about

diabetes risk factors and the importance of leading a healthy lifestyle (Munasinghe, 2021).

4.3.6 Lifestyle Factors and Genetic Predisposition

Several factors, including advanced age, high body mass index, neck circumference, hypertension, and a family history of diabetes, significantly raise the risk of developing the disease. The onset and management of diabetes in Sri Lanka are significantly influenced by lifestyle decisions, such as dietary patterns and medication adherence (Feng et al., 2019).

Additionally, some people may be genetically predisposed to diabetes, especially if they have a family history of the disease. Compared to their peers without such family histories, they are more prone to developing diabetes because of this genetic predisposition. There are several factors that contribute to diabetes in Sri Lanka, especially in people who also have high blood pressure. Contributing factors include lifestyle factors, socioeconomic status, familial predisposition, psychological stress, historical conflict contexts, unmeasured variables like dietary patterns and inflammatory markers, central obesity, and dietary habits (Thayaparan et al., 2022). To develop effective diabetes prevention and management strategies within the nation's healthcare system, a comprehensive understanding and focused approach to addressing these determinants are essential (Munasinghe, 2021).

4.4 The Distribution of Diabetes in Sri Lanka

Diabetes has emerged as a serious health concern in Sri Lanka, impacting a sizable portion of the populace across a number of demographic groups. Over 2.1 million adults are afflicted, accounting for about 10% of the population. The severity of the problem is underscored by the startling statistic that 100 people nationwide die from diabetes-related causes every day (Sheriff, 2014; Panapitiya, 2020)

Understanding these nuances is crucial for developing targeted interventions regarding this issue. and public health campaigns can be used to address the rising incidence of diabetes in Sri Lanka. With an age-adjusted death rate of 47.34 per 100,000, diabetes-related mortality is high in Sri Lanka (Munasinghe, 2021). The prevalence increased from 2% to 6% in the 1990s to 8% to 15% in the 2000s and 2010s, highlighting the urgent need for widespread and well-coordinated efforts to combat this epidemic. Even though previous research has been instructive, it has often been inconsistent and limited in scope, underscoring the need for accurate national estimates and concerted efforts to prevent and manage diabetes in the country.

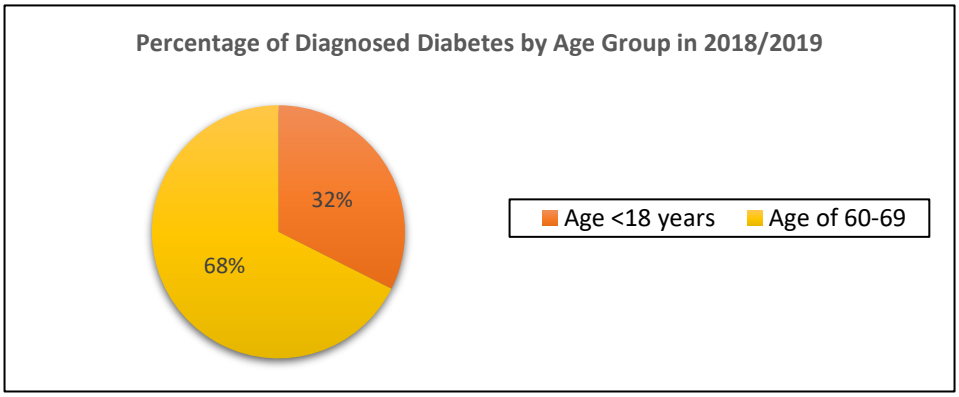

Figure 01: Percentage of Diagnosed Diabetes Cases by Age Group: 2018/2019
Source: (Rannan-Eliya et al., 2023).

In 2019, 14.3% of adults aged ≥18 years had a weighted crude prevalence of diagnosed diabetes. The prevalence rose with age, reaching a peak of 29.8% at the 60–69 age range and then declining as people aged. Three main risk factors for predisposal are sedentary lifestyle, family history, and obesity

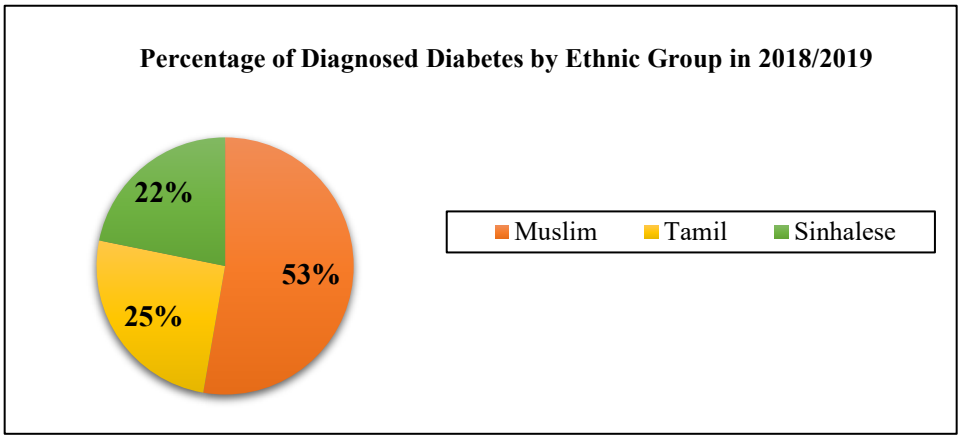

Figure 02: Percentage of Diagnosed Diabetes Cases by Ethnic Group: 2018/2019
Source: (Rannan-Eliya et al., 2023).

Muslims were diagnosed with diabetes at a higher rate (29.0%) than Sinhalese (12.4%) and Tamils (14.7%). Diabetes is more common in Muslims, primarily due to a mix of cultural, genetic, and lifestyle factors. Diabetes risk can be increased by dietary practices, such as consuming sugary and high-calorie

foods during religious celebrations. Furthermore, in some populations, genetics might also be important.

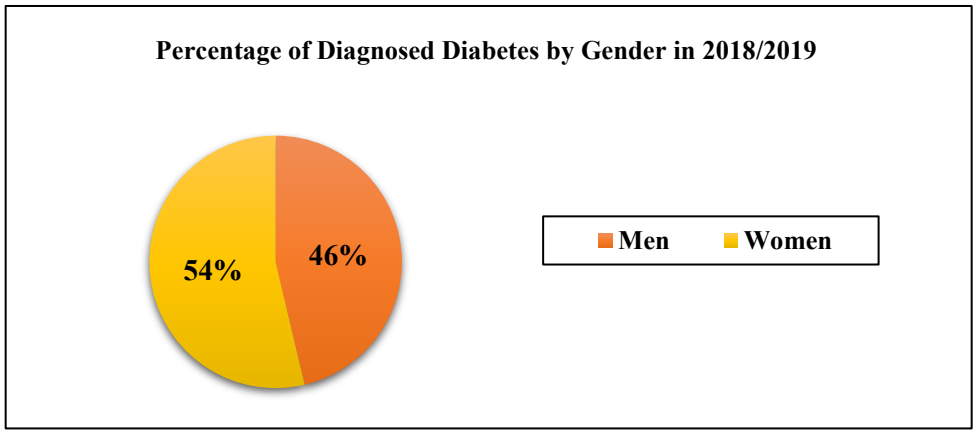

Figure 03: Percentage of Diagnosed Diabetes Cases by Gender: 2018/2019
Source: (Rannan-Eliya et al., 2023).

Diabetes is primarily more common in women (15.3%) than in men (13.2%). There are a number of biological, hormonal, and lifestyle factors that contribute to the higher prevalence of diabetes in women than in men.

- Hormonal Influence: Insulin sensitivity and glucose metabolism can be impacted by hormonal changes that occur throughout a woman's life, including during puberty, pregnancy, and menopause. This could raise the chance of getting diabetes.
- Obesity and Body Fat Distribution: Compared to men, women typically have a higher percentage of body fat and a different distribution of fat. Type 2 diabetes is associated with excess body fat, especially abdominal obesity.
- Polycystic Ovary Syndrome (PCOS): Many women of reproductive age suffer from PCOS, a hormonal condition. Insulin resistance and a higher risk of diabetes are frequently linked to it (Munasinghe, 2021).
- Gestational Diabetes: Pregnant women who have gestational diabetes are more likely to develop type 2 diabetes in the future.
- Lifestyle Factors: Women may adopt different lifestyle choices as a result of social and cultural norms, such as dietary habits and levels

of physical activity, which may affect their risk of developing diabetes.

- Longer Life Expectancy: Women generally have a longer life expectancy than men, which means they are exposed to potential diabetes risk factors for a longer duration (Munasinghe, 2021).

It's crucial to remember that even though diabetes is more common in women, men can still be at risk. To lower the risk of diabetes and its complications, both sexes should place a high priority on leading healthy lives.

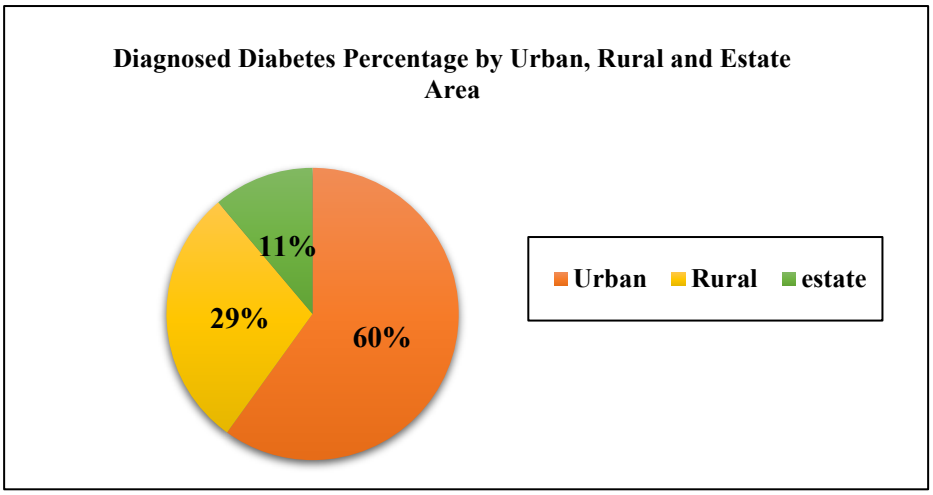

Figure 04: Percentage of Diagnosed Diabetes Cases by Urban, Rural and Estate Area 2018/2019
Source: (Rannan-Eliya et al., 2023).

In the estate (4.6%) and urban (24.7%) sectors compared to the rural (11.9%) sectors. The Western, Northern, and Eastern provinces had the highest prevalence, which rose with household SES. A number of variables pertaining to lifestyle, healthcare access, socioeconomic circumstances, and environmental factors can be attributed for the disparity in diabetes prevalence between urban, rural, and estate areas. It's critical to understand that these are broad patterns and specific instances may differ. The observed variations in diabetes prevalence between urban, estate, and rural areas are a result of the intricate interactions between these factors (Rannan-Eliya et al., 2023; Eliya, Wijemunige, Parera, Kapuge, & Gunawardhana, 2023)

Lastly, the prevalence of diabetes in Sri Lanka is alarming, as a considerable section of the population suffers from this long-term illness. According to 2019 estimates, 14.3% of adults who are 18 years of age or older had a diagnosed case of diabetes; rates rise with age and peak in the 60–69 age

range. Another factor is ethnicity: among Muslims diabetes cases are more prevalent (29.0%) than Sinhalese (12.4%) and Tamils (14.7%). Because of hormonal influences, obesity, PCOS, gestational diabetes, lifestyle factors, and longer life expectancy, women are more likely than men to have this condition (15.3% vs. 13.2%). Furthermore, the prevalence varies by province and socioeconomic status, with urban areas showing a higher prevalence (24.7%) than rural areas (11.9%) and estate sectors (4.6%) (Munasinghe, 2021). The complex nature of these findings emphasizes how urgently comprehensive, specialized interventions are needed to address this expanding health-issue.

4.5 Improving Diabetes Management in Sri Lanka: Key Mitigation Strategies.

According to a 2005–2006 study, 10.3% of Sri Lankan adults have diabetes. The progression of diabetes is significantly influenced by lifestyle factors, even though the pharmacological approach to managing the disease is only partially successful. Pharmacological treatments and lifestyle changes are essential for managing diabetes effectively ((Panapitiya, 2020; Munasinghe, 2021). Whether taken on its own or in combination with insulin and oral medications, physical activity is essential for blood sugar regulation. Effective management requires maintaining a healthy body weight, or Body Mass Index (BMI), through regular exercise and a balanced diet. Because diabetes is chronic and expensive, prevention becomes crucial, particularly in developing nations. Regular exercise combined with even modest weight loss can dramatically reduce the prevalence of diabetes (Feng et al., 2019). Among the suggestions are lowering body weight by 5% to 10% to restore normal blood sugar levels, as well as tactics like controlling portion sizes, calorie cutting, and steering clear of high-fat and high-carbohydrate diets. Preventive actions are mostly focused on eating a range of vegetables, fruits, lean protein sources, and whole grains (Panapitiya, 2020).

In addition to 30 minutes of aerobic exercise at least five days a week, physical activity should ideally incorporate strength-training exercises twice a week. There are many benefits, including improved insulin sensitivity, weight loss, and decreased blood sugar. Suggested activities include weight training, dancing, swimming, walking, and flexibility exercises. Additionally, diabetes prevention and control depend on dietary changes ((Katulanda, Sheriff, & Matthews, 2006; Feng et al., 2019). Strategies include reducing starch intake, consuming fruits before meals, and using smaller plates to control portion sizes. Eating slowly, incorporating whole grains, plenty of vegetables,

adequate fish and plant-based proteins, and limiting meat consumption are all part of a balanced approach. In addition to these lifestyle changes, addressing Other Lifestyle Factors can significantly impact diabetes prevention. This includes quitting smoking, abstaining from excessive alcohol consumption, and ensuring a restorative amount of sleep each night (7-8 hours). These comprehensive lifestyle modifications, when integrated with proper medical treatment and regular monitoring, can substantially improve diabetes management and reduce its adverse effects on individuals and communities alike.

Ongoing Initiatives in Sri Lanka

The Diabetic Association of Sri Lanka (DASL) has implemented various prevention methods to combat the rising prevalence of diabetes:

- Education and Awareness:

To raise public awareness of diabetes prevention and management, DASL regularly hosts lectures, workshops, and media campaigns. They work to spread important information to a large audience through programs like the Diabetes Information Services offered by platforms like Mobitel. Notably, the "Seeni Meanie" campaign, which is being implemented in 70 schools across the country, attempts to educate schoolchildren about the dangers of diabetes and the value of leading healthy lives (Sherimon & Krishnan, 2015).

- Wellness Program:

The Wellness Program focuses on people who are at risk for diabetes, building on the "Diabrisk-SL" research project. In addition to biochemical and clinical evaluations, this program gives participants individualized lifestyle modification guidance from medical officers. The objective is to equip people with the information and resources they need to make better decisions and lower their risk of developing diabetes (Katulanda, Sheriff, & Matthews, 2006; Sherimon & Krishnan, 2015)

- Insulin Bank:

A crucial DASL initiative, the Insulin Bank, offers 560 Type I diabetes patients in need vital support. This program provides a full range of services, including free insulin, glucose monitoring equipment, counseling, and nutritional support. Generous public donations and investment income support the Insulin Bank, guaranteeing that those in need of diabetes management have access to vital resources (Eliya, Wijemunige, Parera, Kapuge, & Gunawardhana, 2023).

- Research Study "Diabrisk-SL":

DASL is participating in an open randomized controlled trial called "Diabrisk-SL" in partnership with King's College London. In order to close the gap between scientific advancements and real-world applications in diabetes management and prevention, this study focuses on translational research. This project intends to create efficient plans for preventing diabetes in Sri Lanka by carrying out thorough research and utilizing evidence-based practices (Sherimon & Krishnan, 2015).

The Diabetic Association of Sri Lanka's ongoing efforts show a thorough and multidimensional approach to tackling the problems caused by diabetes. Here, we examine possible long-term plans for reducing diabetes in Sri Lanka.

- **Integration of Technology**: Patient engagement and treatment plan adherence can be greatly improved by implementing mobile health (mHealth) applications for diabetes management, such as glucose monitoring and medication reminders. Furthermore, the use of AI algorithms for diagnostics in conjunction with continuous glucose monitoring (CGM) devices for real-time data collection holds promise for early detection and individualized treatment strategies (Health, 2017).

- **Community-Based Programs**: Local populations can benefit greatly from the establishment of community health centers devoted to diabetes prevention through lifestyle modifications and education. These facilities can hold seminars, give people access to dietitians and fitness professionals, and provide community-specific educational initiatives. Access to healthcare can also be improved by implementing telemedicine services for remote monitoring and consultations, particularly for people living in remote or underserved areas (Health, 2017; Eliya, Wijemunige, Parera, Kapuge, & Gunawardhana, 2023).

- **Policy Changes**: Healthy food choices can be encouraged by supporting laws that encourage them, such as sugar taxes and better food labeling. It is essential to incorporate diabetes education into school curricula from an early age in order to promote a culture of prevention and instill healthy habits (Eliya, Wijemunige, Parera, Kapuge, & Gunawardhana, 2023).

- **Genetic Screening and Personalized Medicine**: By funding genetic testing facilities, high-risk individuals can be identified and customized preventive measures can be created. Healthcare professionals can provide more targeted and effective individualized

interventions by knowing the genetic predispositions to diabetes (Panapitiya, 2020).

5. Conclusion

A chronic condition affecting millions of people all around, diabetes Uncontrolled instances can lead to major diseases including blindness, renal failure, heart disease, and others. Diabetes is becoming more common fast among male and female adults in Sri Lanka. This report meant to find definition of diabetes, Global and Sri Lankan trend of diabetes and also, Causes, distribution patterns and preventing methods of diabetes in Sri Lanka. Mostly, Muslim people were found more likely to acquire diabetes than Sinhalese and Tamil people; urban people were found more capacity to develop diabetes in Sri Lanka. As a result, reducing the number of diabetic patients in the nation and taking steps to prevent diabetes are crucial. Future-focused tactics that have the potential to lessen the prevalence of diabetes in Sri Lanka include investing in genetic screening, integrating technology, setting up community health centers, promoting policy changes that encourage healthy lifestyles, improving support systems, and offering counseling services. There is a great chance to address the problems caused by diabetes and enhance population health and well-being through an all-encompassing and cooperative approach.

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