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Non–Communicable Diseases (NCDs) in Asia and Africa

Study case in Indonesia, China, Sierra Leone, Nigeria and Somalia. What does the world need to know?

Siti Rahayu, Martynova Alina V, Yao Mingjie, Geeka Francis Kpanabom, Abdisamad Hassan Osman, Solomon Nnaemeka Ogujuba, Taye Olusola Bello

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Authors:
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Jawa Tengah.
Email: penerbit.penapersada@gmail.com
Website: penapersada.id. Phone: (0281) 7771388

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Despite the rapid economic growth, stable politics, and industrialization in Asia and Africa, global health crises have shown that a deeper understanding of the distribution, strategy, health policy, and technology is needed to effectively eliminate non-communicable diseases in these regions.

This timely and authoritative monograph provides a critical analysis of non-communicable diseases in Asia and Africa. The monograph includes case studies through literature reviews and observations conducted in several countries, including Indonesia, China, Sierra Leone, Nigeria, and Somalia. The themes covered in the monograph include cancer, diabetes, mental health, and hypertension.

This comprehensive and well-written monograph will be of great interest to scholars involved in public health, global health policy, and international health. It will also be an enlightening read for policymakers working in this important area.

Agus Suprapto is the Expert Staff Minister of Health for Sustainable Development, Coordinating Ministry for Human Development and Culture, Ministry of Health. A Chairman of the National Social Security, Republic of Indonesia. Former Head of Biomedical and Basic Health Technology, National Institute of Health Research and Development, Ministry of Health, RI.

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Edited by
Siti Rahayu, Health Policy Agency, Ministry of Health Republic of Indonesia.
Far Eastern Federal University, Vladivostok, Russia.

Reviewed by
Agus Suprapto
The Expert Staff Minister of Health for Sustainable Development, Coordinating Ministry for Human Development and Culture. A Chairman of the National Social Security Board, Republic of Indonesia. Former Head of Biomedical and Basic Health Technology, National Institute of Health Research and Development, Ministry of Health, RI.
Martynova Alina V
Professor, Epidemiology Department, Pacific State Medical University and Public Health Department, Far Eastern Federal University, Vladivostok, Russia
Nelly Puspandari
Senior Policy Analyst, Health Policy Agency, Ministry of Health, Republic of Indonesia. Project Manager Officer, Health Policy Agency, Ministry of Health, Republic of Indonesia and Head of Infectious and Non-Communicable Diseases, Center for Biomedical and Health Technology, Ministry of Health, Republic of Indonesia

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Abbreviations

ADHD	Attention Deficit Hyperactivity Disorder
AI	Artificial Intelligence
AIDS	Acquired Immune Deficiency Syndrome
API	Africa Polling Institute
ASD	Autism Spectrum Disorder
ASEAN	Association of South East Asia Nations
ASR	Age Standardized
BMI	Body Mass Index
BP	Blood Pressure
CDC	Center for Diseases Control
CHWs	Community Health Workers
COVID-19	Corona Virus in 2019
DALY	Disability Adjusted Life Year
DM	Diabetes Mellitus
DMT2	Guidelines for Management Prevention of Diabetes Mellitus Type-2
DHMT	District Health Management Teams
GDP	Gross Domestic Product
GBD	Global Burden Diseases
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HICs	High Income Countries
HPV	Human Papillomavirus
IAEA	International Atomic Energy Agency
ICD-11	International Classification of Diseases 11th Revision
IDF	International the Diabetes Federation
IDPs	Internally Displaced
IHME	Institute of Health Metric Evaluation
LMICs	Low- and Middle-Income Nations
MI	Madrasah Ibtidaiyah
MNS	Mental, Neurological and Substance abuse
MoHS	Ministry of Health and Sanitation of Sierra Leone
NAPEP	National Poverty Eradication Program
NCCP	National Cancer Control Plan
NCDs	Non-Communicable Diseases
NDE	National Directorate of Employment
NGOs	Non-Government Organizations
NIHRD	National Health Research and Development
OECD	Organization for Economic Co-operation and Development
PAP	Poverty Alleviation Program
PHC	Primary Health Care

PPP	Purchasing Power Parity
PTSD	Post-Traumatic Stress Disorder
RISKESDAS	Indonesia Basic Health Research (*Riset Kesehatan Dasar*)
RPJMN	National Medium Term Development Plan
SDGs	Sustainable Development Goals
SMEs	Small and Medium-Sized Enterprises
SURE-P	Subsidy Reinvestment and Empowerment Program
SUSENAS	National Socio-Economic Survey
UNFPA	United Nations Population Fund
UN	United Nations
UV	Ultraviolet
WHA	World Health Assembly
WHO	World Health Organization
WC	Water Closet
YLDs	Years of Healthy Life Lost to Disability
YLLs	Years of Life Lost to Premature Mortality

Contributors

Siti Rahayu, Policy Analyst, Health Policy Agency, Ministry of Health Republic of Indonesia and Master Degree Candidate in Leadership and Governance in Public Health, Far Eastern Federal University, Vladivostok, Russia

Yao Mengjie, Master Degree Candidate in Leadership and Governance in Public Health, Far Eastern Federal University, Vladivostok, Russia

Geeka Francis Kpanabom, Senior Public Health Superintendent Ministry of Health and Sanitation Sierra Leone and Master Degree Candidate in Leadership and Governance in Public Health, Far Eastern Federal University, Vladivostok, Russia

Abdisamad Hassan Osman, Medical Laboratory Technologist at Hidaya Hospital in Mogadishu, Somalia and Master Degree Candidate in Leadership and Governance in Public Health, Far Eastern Federal University, Vladivostok, Russia

Solomon Nnaemeka Ogujuba, Master Degree Candidate in Leadership and Governance in Public Health, Far Eastern Federal University, Vladivostok, Russia

Taye Olusola Bello, Occupational Therapist in Agbor Central Hospital, Delta State Nigeria and Master Degree Candidate in Leadership and Governance in Public Health, Far Eastern Federal University, Vladivostok, Russia

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Siti Rahayu
Far Eastern Federal University, Vladivostok, Russia
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1. Introduction
Global Non-Communicable Diseases (NCDs)

Martynova Alina V, MD, PhD, DDSc
Epidemiology Department Pacific State Medical University
Public Health Department, Far Eastern Federal University

Non-communicable diseases represent one of the greatest health and development challenges of this century worldwide. One person under the age of 70 dies every two seconds from non-communicable diseases.

The main non-communicable diseases are cardiovascular diseases, such as heart disease and stroke, as well as cancer, diabetes, chronic respiratory diseases and mental disorders. Together, they claim 41 million lives each year and are responsible for nearly three quarters of deaths worldwide [1.46]. However, 17 million people under the age of 70 die from NCDs each year; 86 percent of these premature deaths occur in low- and middle-income countries. Low- and middle-income countries account for 77 percent of all deaths from NCDs. Cardiovascular diseases account for the largest share of NCD deaths, accounting for 17.9 million deaths each year, followed by cancers (9.3 million), chronic respiratory diseases (4.1 million) and diabetes (2.0 million, including diabetes-related kidney disease). These four disease groups cause 80 percent of all premature deaths from NCDs. Factors such as tobacco use, physical in activity, alcohol abuse and unhealthy diet increase the risk of dying from NCDs.

In the European region, the regions of South-East Asia and the Western Pacific, mortality rates from non-communicable diseases exceed 8 million per year in each of them [7-9]. In the Russian Federation, the standardized (WHO standard) mortality rate (per 100,000 population) from non-communicable diseases is one of the highest in the world and in 2012 was 790.0. Only 12 countries in the world had mortality rates from non-communicable diseases higher than Russia's in 2012. Only 12 countries, mostly developing countries, such as the Republic of Côte d'Ivoire (794.0), the Republic of Fiji (804.0), Uzbekistan (811.0), Kyrgyzstan (835.0), Afghanistan (846.0), Armenia (848.0), Republic of Mali (866.0), Kazakhstan (950.0), Republic of Sierra Leone (964.0), Mongolia (967.0), State of Guyana (1,024.0) and Turkmenistan (1,025.0).

Due to the global socio-economic and demographic impact of non-communicable diseases, these diseases were actively discussed in the agenda of the 136th regular session of the Executive Board of the World Health Organization (WHO), held from 25 January to 3 February 2015 at WHO headquarters in Geneva (Switzerland), during which the need to define the determinants of health using standardized approaches, the awareness of the priority of non-communicable diseases as a cause of high mortality was identified. The need to develop such Guidelines is due to the adopted WHO global plan for the prevention and control of non-communicable diseases, in which one of the main places is given to the prevention and control of diabetes mellitus [2,3]; strengthening epidemiological surveillance, continuation of a sustainable and innovative process in the fight against viral (Ebola) and infectious (tuberculosis, discussion and adequate response to humanitarian crises and emergencies, opportunities for their solution; ensuring coordinated international cooperation.

The main suggestions for developing basic programs for the prevention of non-communicable diseases include recognizing the importance of both nutritional deficiencies (including micronutrient supplementation) and excesses in the development of chronic infectious and non-communicable diseases at all life stages of human existence, the contribution of nutrition to maternal and child health, nutritional deficiencies in times of military conflict and mass population migrations, the unstable and uneven availability of food both inter- and intra-communicable and non-communicable.

The following statements were made by WHO member country delegations when discussing the "Follow-up to the 2014 United Nations (UN) General Assembly High Level Meeting on the Comprehensive Review and Assessment of Progress Made in the Prevention and Control of Non-communicable Diseases" documents: The causes of premature deaths from non-communicable diseases, in particular the role of tobacco use, need to be presented and assessed; Recognize that the progress made in the implementation of the Global Action Plan for the Prevention of Non-communicable Diseases, in particular the role of tobacco use, needs to be recognized; and recognize that the progress made in the implementation of the Global Action Plan for the Prevention of Non-communicable Diseases, in particular the role of tobacco use, needs to be recognized.

At the same time, it was suggested that the development of criteria for assessing progress in the implementation of the Global Plan would require additional WHO technical assistance and financial resources. On the submitted draft "Work Plan for the Global Coordination Mechanism for the Prevention and Control of Non-communicable Diseases covering the period 2016-2017", which focuses on the need and opportunities for advocacy activities within the Global Coordination Mechanism, it was proposed: - to develop principles and requirements for the creation of a web platform (structure and content), criteria for the effectiveness of its functioning in order to carry out not only advocacy activities, but also to develop a web-based platform for the prevention and control of non-communicable diseases.

Thus, non-communicable diseases remain the main cause of death in the world population, and the number of deaths from them, according to expert forecasts, will grow and double by 2060, if effective measures to prevent their development and progression are not applied [15]. The Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013-2020 presents the values of nine global targets, the achievement of which will reduce the projected cumulative mortality from major non-communicable diseases (cardiovascular diseases, malignant neoplasms, chronic respiratory diseases and diabetes mellitus) by 25 percent by 2025 [2, 3, 8]. [2,3,8]. These targets include: 10 percent reduction in hazardous alcohol use, 10 percent reduction in the prevalence of physical inactivity, a 30 percent reduction in average salt/sodium intake, and 30 percent reduction in adult tobacco use. The targets and indicators presented in the Global Plan of Action, as well as the reduction in mortality from non-communicable diseases are averaged across all WHO member countries.

The implementation of the Global Plan and the achievement of country or regional targets for reducing mortality from non-communicable diseases by 2025 for each WHO country and region will depend on many conditions, including the underlying situation of morbidity and mortality from non-communicable diseases, the structure and effectiveness of health services, availability and accessibility of effective preventive, including educational, diagnostic and treatment technologies, the adequacy of human and financial resources, and the availability of appropriate health services. The creation of such conditions and their effective utilization will require the expert and professional support of WHO, it should be recognized that implementation of the provisions presented in the Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013-2020 in terms of preventive measures (legislative and regulatory) will make it possible to prevent the development of

non-communicable diseases to a greater extent. However, given the limited time available, the planned reduction in mortality from non-communicable diseases requires parallel (simultaneous) active actions by health services to inform the population, early diagnosis and effective treatment of patients. In this regard, among the main activities of preventive health care programs in Asian and African countries remains screening, including within the framework of population health check-ups, for early diagnosis and identification of groups of patients at risk of development and progression of socially significant non-communicable diseases for subsequent implementation of individual programs of prevention, treatment and preventive (dispensary) follow-up of such patients.

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2. Indonesia Cancer and Diabetes Diseases

Siti Rahayu
Health Policy Agency, Ministry of Health Republic of Indonesia
Far Eastern Federal University, Russian Federation

Cancer and diabetes are two of the most prevalent non-communicable diseases (NCDs) in Indonesia. According to the Indonesia Ministry of Health, cancer is the second leading cause of death in the country, while diabetes is a major public health concern affecting millions of people. Cancer incidence in Indonesia has been increasing over the years. In 2018, there were an estimated 407,000 new cases of cancer, with breast cancer being the most common type among women and lung cancer among men. The most common risk factors for cancer in Indonesia include tobacco use, unhealthy diet, physical inactivity, and exposure to environmental pollutants. Diabetes is also a growing problem in Indonesia, with an estimated 10 million people living with the disease. The prevalence of diabetes in Indonesia has increased significantly in recent years due to changes in lifestyle and dietary habits. Risk factors for diabetes in Indonesia include obesity, physical inactivity, poor nutrition, and genetic predisposition.

The Indonesian government has implemented various initiatives to address cancer and diabetes, including promoting healthy lifestyles, increasing access to screening and treatment services, and improving public awareness about the importance of early detection and prevention. However, much more needs to be done to effectively tackle these diseases and reduce their burden on the Indonesian population. At the World Health Assembly (WHA) in 2020, Indonesia committed to *"Recognizing the importance of a holistic health systems approach to cervical cancer prevention and control, integrating vaccination programs, screening and treatment programs, adolescent health services, HIV, sexual and reproductive health services, and communicable disease and non-communicable disease health services, as well as the importance of inclusive and strategic national, regional, and global partnerships that extend beyond the health sector"(Ministry of Health, 2023).*

This chapter explained that Indonesia has implemented several strategies and concerns to eliminate NCDs especially for cancer and diabetes, including: Geography and Demography; Socioeconomic and lifestyles; Definition and distribution of cancer and diabetes diseases; Health policy: roles of Indonesia government; Cervical cancer elimination plan 2023-2030; Diabetes Mellitus guidelines 2008; Guidelines for the Management and Prevention of Diabetes Mellitus Type-2 (Pedoman Pengelolahan dan Pencegahan DMT2); and research and publications.

Republic of Indonesia

Indonesia geographical location is in Southeast Asia, directly bordering Brunei Darussalam, Malaysia and Singapore. Indonesia's territory is mostly ocean and has five large islands, namely Sumatra, Java, Kalimantan, Sulawesi and Papua. There are many provinces in Indonesia. The number of provinces in Indonesia is 38 provinces. This number increased

after the inauguration of Southwest Papua as the newest province in 2023. The larger islands of Sumatra, Java, Kalimantan (which comprises two-thirds of the island of Borneo), Sulawesi, and Irian Jaya are quite mountainous, with some peaks reaching 12,000 ft. These mountains on the major Indonesian Islands are densely forested and volcanic in origin. The mountains with the highest elevations (over 16,000 ft) are found on Irian Jaya in the east. Located in the Papua province and as a part of the Sudirman mountain range is Puncak Jaya – the highest point in Indonesia. At an elevation of 16,502 ft. (5,030 m), Puncak Jaya is also the world's highest island peak and the Southwestern Pacific's tallest mountain. The lowest point is the Indian Ocean (0 m). Indonesia's former tallest peak, Mount Tambora (8,930 ft, 2,722 m), is an active stratovolcano whose 1815 eruption was the largest ever in recorded history - killing nearly 71,000 people. The explosion alone was heard as far west as Sumatra island, some 1,200 miles (2,000 km) away, and ashfalls were recorded on the islands of Borneo, Sulawesi, Java, and Maluku.

At the moment, Indonesia government is in the process of moving the capital Jakarta to the new capital in the island of Kalimantan. The relocation of the capital had a major impact on social conditions and public health. The main reason for moving the capital is that Indonesia must reduce gas emissions which can cause climate change. As we know this issue is a major topic in the world and Indonesia need to take responsibility to eliminate it. Apart from that, the government wants to reduce population density on the island of Java, especially in the capital of Jakarta. The high level of community mobilization in Jakarta causes several diseases, for instance respiratory tract infections, due to high air pollution. Apart from that, traffic jams can cause mental health problems due to high levels of depression.

Indonesia was 273.8 Million people in 2021 then population is estimated at 277.5 Million people at mid-year of 2023. Indonesia population is equivalent to 3.45 percent of the total world population. Indonesia ranks number four in the list of countries (and dependencies) by population. World Bank also estimated using total population and age/sex distribution of the United Nations Population Division's World Population Prospects: 2022 data revision that the number of male population in 2021 was 137.9 Million people, it increased to 138.7 Million people in 2022. Meanwhile, the number of female population was 135.9 Million people in 2021. It increased to 136.8 Million people in 2022. Overall, the number of male population was more than female population in 2021-2022 in Indonesia, (World Bank, 2023). The population on the island of Java is around 150 million. Java Island is inhabited by 60 percent of total population. This has decreased compared to the 1905 population census which reached 80.6 percent of the entire Indonesian population. The percentage decline in population on the island of Java is due to population movement (transmigration) from the island of Java to other regions in Indonesia.

The capital city of Indonesia is Jakarta and is located in the northwestern part of Java (precisely at the westernmost tip of the Pantura Route). United Nations Population Division, World population Prospects in 2022 revision data (World Bank, 2023) showed that the population ages 25-29, female (percent of female population) in Indonesia decreased from 2010-2011, but stagnant in 2011-2022 was 9 percent (2010) to 8 percent (2011-2022) while the male population age 25-29 decreased in 2013 was 9 percent (2012) to 8 percent (2013-2022). Then, age dependency ratio, old (percent of working-age population) decreased from 2021 was 48 percent to 47 percent in 2020. Age dependency ratio, young (percent of working-age population) in Indonesia also decreased from 2021 was 38 percent to 37 percent in 2020. The number of population ages 65 and above (percent of total population) was 7 percent in 2020, it increased from 2018 to present.

The population in Indonesia, starting from the productive age group and the non-productive age group, will influence the prevalence of non-communicable diseases in the future. Geographical conditions also greatly influence future health conditions, such as

climate change which affects food security, natural disasters, and even other extraordinary events. All of these things affect the life expectancy and per capita income of a country, especially Indonesia. Like an interconnected cycle, geographical conditions influence demographic conditions, which in turn will influence people's health conditions which will directly impact life expectancy and Gross Domestic Product (GDP) Per Capita. WHO, 2023 explained that the life expectancy at birth in Indonesia was 68.81 years and increased 0.25 percent in 2023 is 72.32 years and life expectancy for Indonesia in 2022 was 72.14 years, 0.25 percent increased from 2021. The life expectancy for Indonesia in 2021 was 71.96 years, 0.25 percent increased from 2020. Indonesian life expectancy at birth affects to life style is influenced by economic and environment especially social media. In this era, youth generation is living in the digital environment where this is greatly influenced by increasing income and the job you have. They tend to develop styles according to environmental conditions, not the conditions they actually have. This kind of social life has positive and negative impacts depending on the perspectives of each group.

Indonesia GDP per capita was 3.932,33 USD in 2020, it has increased in 2021 was 4.362,68 USD, in 2022 was 4.798,12 USD also estimated increased in the end of 2023 is 5.016,64 USD. That data is little bit different to Organization for Economic Co-operation and Development (OECD) data, OECD explained that Indonesia GDP per capita was 80K USD in 2019, 100K in 2020, 120K in 2021, increased 140K in 2020, (Statistic data, 2023). Per capita income greatly affects the economic condition of the people of Indonesia, and also directly affect healthy lifestyles and other factors that influence public health are measured by the income level, Human Development Index (HDI) and Psychology. Lifestyle also influences other non-communicable diseases, one of which is diabetes. In addition, socioeconomic status has also significant association with the prevalence of diabetes mellitus among people above 15 years old in Indonesia. The government needs to design a preventive program to control this disease by considering the risk factors that may lead to the development of diabetes mellitus in Indonesia, (Indrahadi D, et al, 2021). On the other hand, the lives of middle-class Indonesians have more unhealthy lifestyles. Fast food is the main menu for employees and some people who are busy working to earn money. They cannot fulfill their main need for healthy foods, sometimes the need for cigarettes and alcoholic drinks are much more important than eating healthy foods. The economy is the basis for fulfilling household needs for life. The higher the economic level of family, the better the need for healthy food should be met. Sometimes these conditions are inversely proportional, the higher the household's economic level, the worse the healthy lifestyle they lead, because it is easier to buy fast food and other necessities. Diet, obesity and sedentary lifestyle are risk factors of breast cancer and diabetes among women in Indonesia. High Body Mass Index (BMI), physical inactivity, and lower Water Closet (WC) were associated with the lower breast cancer and diabetes risks, while preserved food and soft drink consumption significantly increase the risk. Although sedentary lifestyle seems to have a small protective effect, healthy lifestyle should be encouraged and effective strategies are required to encourage women to adopt healthy lifestyle, (Solikhah, et al, 2022).

Worldwide, socioeconomic developments over the past 40-50 years have dramatically changed lifestyles from traditional to modern, causing physical inactivity due to technological advances, prosperity leading to consumption of foods rich in fat, sugar, and calories and high mental stress levels. All of these can affect insulin sensitivity and lead to obesity. The group of higher socioeconomic status had a twofold higher prevalence of diabetes than the lower socioeconomic group. The high majority has been linked to unhealthy foods such as foods rich in calories and fat and lack of physical activity. The same study also showed that most insulin resistance syndrome components, including diabetes, hypertension, dyslipidemia, and

obesity are more common among higher economic conditions than those with lower economic conditions.

Unemployment rate in Indonesia has decreased in recent years, but it was not significant. The unemployment is also a determining factor in the occurrence of cancer and this is caused by psychological problems, including anxiety, depression and stress. The research founded that demonstrate the importance of consultation for psychological distress among cancer patients as means of effectively resolving their psychological problems and ultimately improving the quality of oncology medical care. Clinical recommendations for cancer management should incorporate the early identification of (and therapy for) psychological distress, as well as their monitoring during treatment, (Ostovar S, et al, 2021). Meanwhile, Indonesian healthcare professionals believed that, for culturally congruent advance care planning in Indonesia, it was essential to respect the cultural aspects of collectivism, communication norms, and patient's religious beliefs. Family hierarchical structure and certain religious beliefs may complicate patients engagement in advance care planning, considerate approach to involving family and religious patients perspectives in advance care planning may actually facilitate their engagement in it, (Martina D, et al, 2022). Furthermore, World Bank, 2023 explained that Indonesia unemployment rate for 2022 was 3.55 percent, a 0.28 percent declined from 2021. Unemployment rate for 2021 was 3.83 percent, a 0.42 percent declined from 2020. Indonesia unemployment rate for 2020 was 4.25 percent, a 0.66 percent increased from 2019. The unemployment rate in Indonesia also affects people's lifestyles. The current phenomenon is that many young people are being eroded by the modern era. They are willing to not eat just for the sake of lifestyle. So it can be concluded that the unemployment rate influences healthy lifestyles in society.

Non-Communicable Diseases (NCDs): Cancer and Diabetes

World Health Organization (WHO, 2023) explained that non-communicable diseases (NCDs) killed 41 million people each year, equivalent to 74 percent of all deaths globally. Each year, more than 15 million people die from a NCD between the ages of 30 and 69 years; 85 percent of these *"premature"* deaths occur in low- and middle-income countries. Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.3 million), respiratory diseases (4.1 million), and diabetes (1.5 million). These four groups of diseases account for over 80 percent of all premature NCD deaths. Every year 703.000 people take their own life and there are many more people who attempt suicide. Suicide occurs throughout the lifespan and was the fourth leading cause of death among 15-29 year-olds globally in 2019. Suicide does not just occur in high-income countries, but is a global phenomenon in all regions of the world. In fact, over 77 percent of global suicides occurred in low- and middle-income countries in 2019.

Non-communicable diseases have become a major public health problem in Indonesia. This is marked by a shift in epidemiological disease patterns from infectious diseases which tend to decrease to non-communicable diseases (NCDs) which are increasing globally and nationally have occupied the top ten causes of death and the most cases, including diabetes mellitus (DM) and metabolic disease, such as cancer. With over 600,000 new cases and more than 340,000 estimated deaths globally, cervical cancer remains the fourth leading cause of cancer in women worldwide. The Human Papillomavirus (HPV), the most common viral infection of the reproductive tract, causes almost all cases of cervical cancer and is attributed to several other types of cancer. Adopting evidence-based interventions is important to both prevent infection and detect abnormalities early, reducing the risk of progression to invasive cervical cancer, when treatment is less intensive and incurs a lower cost, (Ministry of Health RI, 2008). There are several Non-Communicable Diseases (NCDs) that are of concern to the world today, namely mental health, cancer, diabetes, hypertension and obesity. Each disease

has its own characteristics and distribution in each country. Therefore, the World Health Organization (WHO) provides Sustainable Development Goals (SDGs) targets for eliminating non-communicable diseases through programs that can be measured and implemented by countries in the world. The 2030 Agenda for Sustainable Development recognizes NCDs as a major challenge for sustainable development. As part of the Agenda, heads of state and government committed to develop ambitious national responses, by 2030, to reduce by one third premature mortality from NCDs through prevention and treatment (SDG target 3.4).

In the Asia Pacific region, including South Korea, as many as 20.5 percent of the population has a body weight of more than 1.5 percent, which is classified as obese. In Thailand, 16 percent of the population is overweight and 4 percent are classified as obese. Meanwhile in China, 12 percent of men and 14.4 percent of women have more body for urban areas. Meanwhile, in rural areas, 5.3 percent of men and 9.8 percent of women are overweight. Obesity does not only occur in adults but also in children and adolescents. Recent research conducted in Malaysia shows that the prevalence of obesity reached 6.6 percent in the seven years age group and 13.8 percent in the 10 year age group. In China, 5-11 percent of school children are obese among children aged 6-14 years.

Cancer

Cancer is the second leading cause of death globally, accounting for an estimated 9.6 million deaths or 1 in 6 deaths, in 2018. Lung, prostate, colorectal, stomach and liver cancer are the most common types of cancer in men, while breast, colorectal, lung, cervical and thyroid cancer are the most common among women. The cancer burden continues to grow globally, exerting tremendous physical, emotional and financial strain on individuals, families, communities and health systems. Many health systems in low- and middle-income countries are least prepared to manage this burden, and large numbers of cancer patients globally do not have access to timely quality diagnosis and treatment. In countries where health systems are strong, survival rates of many types of cancers are improving thanks to accessible early detection, quality treatment and survivorship care.

Cancer disease control has been effect in Indonesia since the early 1920s. It was the Dutch Colonial Government who started with Institution for Cancer Control, which was closed by the Japanese Occupation Administration between 1942 and 1945. After the independence of the Republic of Indonesia, a cancer control foundation was established in 1962. At present, clinical and non-clinical departments in government teaching hospitals (there are 13 teaching hospitals) usually handle all cancer problems. In 1993, Dharmais Cancer Center in Jakarta was established and has become the top referral cancer hospital for Indonesia. Until the article published, there have been no nationwide accurate data on cancer registration, owing to a lack of funds and manpower. Cancer data collection was usually provided as a relative frequency study from several departments of the teaching hospitals. It is currently estimated that there will be at least 170-190 new cancers are cervix, breast, lymph node, skin and nasopharynx. Since Indonesia is in transition phase and has many problems concerning the economy and healthcare, the authors suggested a well-planned cancer control program. It includes the primary, secondary and tertiary prevention of cancer in cities, where inhabitants can afford to subsidize a certain proportion of the budgets for the implementation of this program, (Tjindarbumi D and Mangunkusumo R, 2001). But in 2023, Indonesia has some digital technology concept to create one health data where we can search all respiratory accurate data around Indonesia, It is integrated all hospitals in Indonesia.

Figure 1
Form of Cancer cells

Source: https://www.alodokter.com/penyakit-kanker
Online accessed in November 2023

World Health Organization (WHO), 2023 explained that cancer is a large group of diseases that can start in almost any organ or tissue of the body when abnormal cells grow uncontrollably, beyond their usual boundaries to invade adjoining parts of the body and/or spread to other organs. The latter process is called metastasizing and is a major cause of death from cancer. A neoplasm and malignant tumor are other common names for cancer. Ministry of Health Republic of Indonesia explained by *"AloDokter"* website that cancer cells can damage healthy cells and tissues and organs in the body. These cells grow quickly, uncontrollably, and can easily spread. It is important to detect the presence of cancer cells in the body as early as possible to prevent serious health problems. The severity or stage of cancer is determined based on the development of cancer cells. The stage of cancer can also provide an overview of the growth of cancer cells and their spread. Also, cancer is a disease caused by uncontrolled growth of abnormal cells in the body. This abnormal cell growth can damage normal cells around it and in other parts of the body. However, there is no specific type of cancer that is only triggered by one factor. The type of cancers namely: Breast, prostate, lung, colorectum, cervix uteri, stomach, liver, corpus uteri, ovary and thyroid.

Factors thought to be at risk of causing genetic mutations in normal cells and the body's failure to repair them including family history of cancer, age over 65 years, although some types of cancer are more common in children, smoking habit, exposure to radiation, chemicals (such as asbestos or benzene), or sunlight viral infections, such as hepatitis B, hepatitis C, and HPV, exposure to high levels or long-term hormones, obesity, not moving much and not exercising regularly, diseases that cause long-term inflammation, such as ulcerative colitis, decreased immune system, for example due to suffering from HIV/AIDS. Symptoms of cancer also vary, depending on the type of cancer and the body organs affected. Some complaints that cancer sufferers often experience are: a lump appears, pain in one part of the body, pale, weak and tired quickly, weight dropped drastically, disorders of defecation or urination, chronic cough, spontaneous bruising and bleeding and continuously recurring fever. There are several healing methods that can be used, namely chemotherapy, surgery, radiotherapy, bone marrow transplantation, immunotherapy, hormone therapy, targeted drug therapy.

Cancer Distribution

WHO, 2023 estimated age-standardized (ASR) incidence and mortality rates (World) in 2020, both sexes and all ages. Based on type of cancer diseases, the highest incidence of cancer was breast cancer namely those over 45 ASR (World) per 100.000 people and the lowest number of cancer sufferers was ovarian and thyroid cancer, namely those under 10 ASR (World) per 100.000 people. The highest mortality of cancer was lung namely those over 15 ASR (World) per 100.000 people and the lowest number of cancer mortality was thyroid, namely those under 5 ASR (World) per 100.000 people. Besides that, the estimate number of prostate cancer was also being the second incidence, those between 30 and 40 ASR (World) per 100.000 people. Lung cancer has been third incidence then colorectum cancer diseases, all of those were over 18 ASR (World) per 100.000 people. The number of cervix uteri incidence was more than 10 ASR (World) per 100.000 people and followed by stomach, liver and corpus uteri. The number of breast cancer was also high, namely over 15 ASR (World) per 100.000 people followed by colerectum, liver, prostate, stomach, ovary and cervix urteri. There were available for 2.4 Million women with breast cancer from 81 countries. Globally, the proportion of cases with distant metastatic breast cancer at diagnosis was high in sub-Saharan Africa, ranging from 5.6 percent to 30.6 percent and low in North America ranging from 0.0 percent to 6.0 percent. The proportion of cases diagnosed with distant metastatic stage ranging from 2.0 percent to 17.7 percent among the younger to 4.1 percent to 33.9 percent among the oldest age group, and from 1.7 percent to 8.3 percent in the least disadvantaged groups to 2.8 percent to 11.4 percent in the most disadvantaged group, (Fuentes JDB, et al, 2023).

The distribution of cancer cases in the world can also be classified based on cancer cases (at all anatomical sites) among both sexes (worldwide) in 2012 attributable to excess body mass index. The data showed that the obesity was the one of the triggers for cancer, and in my opinion it will happen until now. High cases of cancer caused by obesity makes the world must reduce obesity rates. The cases of obesity-related cancer was breast cancer then the second order was the corpus uteri, followed by colorectum, kidney, pancreas, rectum and the last was the ovary cancer. More than 5.6 percent cancer case caused by obesity was in Europe and in African countries was 4.4–5.6 percent. There are two fractions in Asia countries, namely <1.1 percent to more than 5.6 percent, especially Indonesia was under 1.1 percent to more than 4.4 percent of cancer cases among both sexes in 2012 attributable to excess body mass index (obesity), (Rumgay H Et al, 2021 in Global Cancer Observatory). In 2020, the highest number of cancer cases attributable to alcohol drinking for both sexes was over 400K populations in Asia, followed by Europe was over 150K populations, North America was under 100K populations then Latin America and the last was in Africa, (WHO, 2023).

In addition to alcohol and obesity, cancer can also be caused by infection and Ultraviolet (UV) radiation is also cause of cancer disease. The number of cancer cases in 2012, among men and women of all ages (30+years), attributable to ultraviolet (UV) radiation exposure, by continent can be comprehended in the diagram. The data showed that there are some infections can be trigger of cancer cases are Helicobacter pylori, HPV, Hepatitis B Virus and other agents. In African Region, the main cause of cancer was HPV infection and the last was an infection caused by the hepatitis C virus. The proportions of cancer cases caused by infection was almost the same in the Southeast Asia Region, which the highest proportions of cancer cases was caused by HPV infection, followed by Helicobacter pylori and the last was an infection caused by Hepatitis C Virus. But there is difference proportions of the second level, other agents cause the second highest number of

cancers due to infections but in South-East Asia Region, Helicobacter pylori was highest proportions of cancer cases due to infection and followed by other agents.

Cancer is a major health concern in Indonesia, with an estimated 1.2 million new cancer cases and 800,000 cancer-related deaths occurring each year. The most common types of cancer in Indonesia are breast cancer, cervical cancer, lung cancer, liver cancer, and colorectal cancer. Breast cancer is the most common type of cancer among women in Indonesia, accounting for 25. Liver cancer is also a significant health concern in Indonesia due to the high prevalence of hepatitis B and C infections. Colorectal cancer is becoming more common in Indonesia due to changes in diet and lifestyle. Cancer incidence and mortality rates vary across different regions of Indonesia. The highest incidence and mortality rates are found in Java, Bali, and Sumatra. This is partly due to the higher population density and greater access to healthcare services in these regions. Indonesia Basic Health Research Data, 2018 showed that the prevalence of cancer based on the diagnosis of doctors in the population of all ages by provinces, the highest prevalence of cancer was 4.86 percent in DI Yogyakarta (Special Region of Yogyakarta) and the lowest prevalence of cancer was 0.85 percent in Nusa Tenggara Barat region. The total number prevalence of cancer in Indonesia was 1.79 percent and the total population of cancer cases was 1.017.290 people.

Prevalence (per mil) of cancer by Physician diagnosis in populations of all ages according to Characteristics explained that the highest prevalence of cancer cases was age group population between 55-64 years at 4.62 percent. The lowest prevalence of cancer cases was age group population <1 years at 0.03 percent. The productive people were 1.21 percent, age group population between 25-34 years old. Indonesia Basic Health Research data, 2018 also explained that the highest prevalence of characteristics was female at 2.85 percent whereas prevalence of men cancer was 0.74 percent. Based on education, the highest prevalence of cancer sufferers was College/University graduates, namely 3.57 percent, followed by elementary school graduates at 2.25 percent. Most people of cancer cases were government employees, namely 4.10 percent, then unemployed or not working, a prevalence of 3.48 percent. The lowest prevalence rate was in school children at 0.41 percent. The highest prevalence of cancer cases was population in city area at 2.06 percent, while the population of rural area was 1.47 percent. The burden of cancer in Indonesia is expected to increase in the coming years due to population growth, ageing, and changes in lifestyle factors such as diet and physical activity. Improving access to cancer screening, early detection, and treatment services is crucial for reducing the impact of cancer in Indonesia. The estimated number of new cases from 2020 to 2040, both sexes, age (0-85+) will be increasing for all cancers, the data showed that estimated number of new cancer cases from 2020 to 2040 increase significantly. In Asia, the estimated new cases increase by 59.2 percent, this is the highest increase of all regions in the world, followed by North America which is predicted to experience an increase of 37.9 percent. The number of new cancer cases in the Asia region is predicted to be more than 5 million people, the lowest estimated number is in the Oceania region, namely less than 3 million people. Demography will greatly influence the number of new cases of cancer, the higher the population directly proportional the higher the number of new cases, namely from 19.3 million people to 30.2 million. Thus, it can be predicted that the higher the population in an area, the higher the number of new cancer cases. The government must pay attention to this in dealing with new cases of cancer in the future, programs and projects must be prepared as well as possible to be able to deal with new cases, (WHO, 2022).

Indonesia Government has made national cervical cancer elimination plan for 2023-2030. The Government forecasted the number of cancer will increase in Indonesia especially for cervix cancer. Cervical cancer is a devastating disease that has affected millions of women and generations of families. Today, it is preventable and can be eliminated. Cervical

cancer is both preventable and treatable and thus can be eliminated from a population. However, in 2020 alone, there were more than 600,000 new cervical cancer cases and over 340,000 estimated deaths globally, despite the availability of modern interventions. It is the second most common cancer among women in Indonesia, with the majority of women (70 percent) diagnosed in advanced stages when treatment is less effective. As a result, 50 percent of women diagnosed with cervical cancer die from the disease. Reducing cervical cancer incidence and mortality rates in Indonesia will require a comprehensive, multi-stakeholder approach to strengthen health system capacity, increase the availability of advanced treatment technologies and address social, financial, cultural, societal and structural barriers to prevention and treatment.

Diabetes

WHO, (Tobacco and Diabetes, 2023) explained that diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood glucose. Hyperglycaemia, also called raised blood glucose or raised blood sugar, is a common effect of uncontrolled diabetes and, over time, leads to serious damage to many of the body's systems, especially the nerves and blood vessels. Type-2 diabetes affects how your body uses sugar (glucose) for energy. It stops the body from using insulin properly, which can lead to high levels of blood sugar if not treated. Type-2 diabetes is largely preventable and, in some cases, potentially reversible, if identified and managed early in the disease course. Type-1 diabetes is characterized by deficient insulin production and requires daily administration of insulin. Gestational diabetes is hyperglycaemia with blood glucose values above normal but below those diagnostic of diabetes. Gestational diabetes occurs during pregnancy. Other forms of diabetes also exist. More than 95 percent of people with diabetes have type-2 of diabetes and this type will therefore be the predominant focus of this report.

Currently, three new pathogenesis pathways from the ominous octet have been discovered which mediate the occurrence of hyperglycemia in type-2 DM. Eleven important organs in impaired glucose tolerance (egregious eleven) need to be understood because the pathophysiological basis provides the concept: (1) Treatment must be aimed at correcting pathological disorders, not only to reduce HbA1c; (2) The combination treatment required must be based on drug performance according to the pathophysiology of type 2 DM; (3) Treatment must be started as early as possible to prevent or slow the progression of beta cell damage that has occurred in patients with impaired glucose tolerance, (Soelistijo AS, et al, 2021).

Schwartz in 2016 said that not only muscles, liver and pancreatic beta cells play a central role in the pathogenesis of type-2 DM patients but there are eight other organs that play a role, referred to as the egregious eleven. In general, the pathogenesis of hyperglycemia is caused by eleven things (egregious eleven), namely: (1) pancreatic beta cell failure, (2) pancreatic alpha cell dysfunction, (3) fat cells, (4) muscle, (5) liver, (6) brain, (7) colon or microbiota, (8) small intestine, (9) kidney, (10) stomach, (11) immune system. Type-2 DM is characterized by peripheral insulin resistance and decreased insulin production, accompanied by chronic low-grade inflammation in peripheral tissues such as adipose, liver and muscle. In recent decades, it has been proven that there is a relationship between obesity and insulin resistance to inflammation. This illustrates the important role of inflammation in the pathogenesis of type-2 DM, which is considered an immune disorder. Other metabolic abnormalities related to inflammation also occur frequently in type-2 DM.

There is positive relationship between the higher prevalence of obesity nutritional status according to BMI in the adult population, the higher the proportion of less physical activity, and the higher the proportion of sweet drink consumption habits in the population more than

once per day, the higher the prevalence of diabetes mellitus. Otherwise, there is negative relationship between the poor people percentage and the diabetes mellitus prevalence in Indonesia, (Amarta OR, et al, 2021). Furthermore, high cholesterol, hypertension and overweight were risks associated with diabetes mellitus in Indonesia. Of the three risks, overweight was the most significant risk for diabetes and striving for healthy living behaviors and periodic screening programs can reduce overweight rates because they can be detected quickly, (Nugroho PS, et al, 2020).

People in diabetes need to do self-management (learning, choosing and acting) of diabetes in Indonesia as the basic social process of how people learn about their diabetes. People with diabetes acted after they had received recommendations that they considered to be trustworthy. Factors that influenced their choice of recommendations to adopt are also identified. Awareness of the complexity involved in their decision making will assist healthcare professionals to engage effectively with people living with diabetes, (Ligita T, et al, 2019). The role of patients and families in managing DM is also very important, because DM is a chronic disease that will last a lifetime. Therefore, education is needed for patients and their families to provide an understanding of the course of the disease, prevention, complications and management of DM. The existence of a community or organization is also very helpful and needed in managing DM. Organizations and communities can improve the abilities of patients, health professionals in managing DM and other communities can help increase patients knowledge about the disease and increase their active role in participating in the management and control of DM, so as to reduce the incidence of DM. Diabetes Mellitus disease will have an impact on the quality of human resources and a significant increase in health costs, therefore all parties, both society and government, should participate in efforts to overcome DM, especially in prevention efforts. Management of this disease requires the participation of doctors, nurses, nutritionists and other health workers. In the health service strategy for DM patients, the role of general practitioners is very important as the spearhead in primary health services. Simple DM cases without complications can be managed completely by general practitioners in primary health care. DM patients with uncontrolled blood glucose levels need comprehensive management as an effort to prevent complications. This procedure can be implemented in every health service facility with the community.

Diabetes Distribution

Diabetes is also a significant health issue in Indonesia, with an estimated 10.3 million adults living with diabetes in 2019. The prevalence of diabetes in Indonesia has been increasing over the past few decades, with a particularly high prevalence among urban populations. The distribution of diabetes in Indonesia varies across different regions, with the highest prevalence found in urban areas and in the western part of the country. This is partly due to changes in lifestyle factors such as diet and physical activity, as well as the higher prevalence of obesity in these areas. The burden of diabetes in Indonesia is expected to continue to increase in the coming years, with projections suggesting that the number of people living with diabetes in Indonesia will reach 16.7 million by 2045. Improving access to diabetes prevention and management services, as well as promoting healthy lifestyle behaviors, is crucial for reducing the impact of diabetes in Indonesia.

Indonesia Basic Health Research Data (*RISKESDAS*), 2018 showed that the highest prevalence of diabetes mellitus based on the diagnosis of doctors in the population of all ages by province was in the province of DI Yogyakarta which was equal to 2.4 percent, while the lowest prevalence was in the province of East Nusa Tenggara by 0.6 percent, the total prevalence in Indonesia was 1.5 percent. The highest prevalence of diabetes mellitus based on doctor's diagnosis in the population of all ages according to characteristics was the age group 55-64 years at 6.29 percent, female gender at 1.78 percent, tertiary education at 2.84

percent, workers for civil servant, army, police, state-owned enterprises were 4.17 percent and living in urban areas amounting to 1.89 percent. The lowest prevalence was the group 1-14 years at 0.00 percent, not finish elementary school at 1.36 percent and living in the rural areas at 1.01 percent. The prevalence of obesity is one of the risk factors for diabetes also increased, namely 14.8 percent in 2013 to 21.8 percent in 2018. This is also in line with an increase in the prevalence of overweight, namely from 11.5 percent to 13.6 percent, and for central obesity (waist circumference ≥90 cm in men and ≥80 cm in women) increased from 26.6 percent to 31 percent. The data above shows that the number of DM patients in Indonesia is very large and heavy burden for anyone to handle alone specialist/subspecialist doctors or even all health workers, (Riskesdas, 2018).

Currently, Indonesia has estimated 1.2–2.3 percent prevalence among people over 15 years. Geographically variation appears to be an influential factor, due to differences in ethnics, race, culture and lifestyle. Studies of diabetic families show a significantly high prevalence and, clinically speaking, the mode of treatment indicates the type of diabetes. The level of obesity among the general population has increased, due partly to increased calorie intake and is a significant factor in the increased rate of diabetes. It is also more common among the elderly, as our results will show. The new types of the disease are clinically more difficult to assess than the classical types 1 and 2, as they require relatively costly genetic and immunological studies. A consensus on diabetes management has now been formulated in Indonesia and these guidelines are now used by all Indonesian health care professionals, (Sutanegara D, Darmono, Budhiarta A.A.G, 2000).

Based on data from the Indonesian Central Statistics Agency in 2003, population in Indonesia over the age of 20 is 133 million people, with DM prevalence of 14.7 percent in urban areas and 7.2 percent in rural areas, so it is calculated that in 2003 there were number 8.2 million DM patients in rural areas. Based on the increase pattern population, it is estimated that by 2030 there will be 194 million populations aged over 20 years and assuming the prevalence of DM in urban (14.7 percent) and rural (7.2 percent), it is estimated that there are 28 million diabetes patients in urban areas and 13.9 million in rural areas. Further, Report Basic Health Research (*RISKESDAS*) in 2018 by the Department Health using data from the 2015 the consensus explained that the prevalence of DM in 2018 is estimated at 10.9 percent. The frequency of diabetes is rising around the world, and studies are showing not only adult but also children are at increasing risk of developing the disease. Over time, diabetes can damage the heart, blood vessels, eyes, kidneys and nerves, causing chronic problems and early death, various epidemiological studies showed that it exist tendency to increase the incidence and prevalence of diabetes type-2 mellitus in various parts of the world.

The WHO organization predicts there has been a significant increase in the number of type-2 DM patients in future years. WHO health agency predicts in Indonesia increased from 8.4 million in 2000 to around 21.3 million in 2030. Predictions from International the Diabetes Federation (IDF) also explained that in 2013-2017, there was an increase in the number of DM patients from 10.3 million to 16.7 million, and will be significantly increase in 2045. Predications indicate a potentially explosive increase in the prevalence of diabetes worldwide, especially in developing countries such as Indonesia. Some studies provided that people living in rural areas of East Java and Bali showed a prevalence rate of 1.5 percent in 1982 to 5.7 percent in 1995 among the urban population. Ujung Pandang also experienced an increased and recent studies in Manado found a dramatically high rate of 6.1 percent in urban areas. Preliminary results indicate varying prevalence between those living in urban and rural areas.

Health Policy

The government plays critical roles in eliminating cancer and diabetes in Indonesia by developing and implementing cancer prevention programs, increasing access to cancer screening, improving cancer diagnosis and treatment, investing in cancer research, and raising public awareness. However, Indonesia government has taken steps to address cancer and diabetes in the country, such as formulate some regulations, launching a national cancer control program in 2015, National cervical cancer elimination plan for 2023-2030 and increasing funding for cancer research and treatment, take partnership with the world in some programs to eliminate diabetes and cancer. The government has also implemented various initiatives to promote healthy lifestyles and improve access to cancer screening and treatment services.

The implementation of promoting cervical cancer screening services in the Association of South East Asia Nations (ASEAN) was impeded by multiple challenges regarding service delivery, acceptance, follow-up and treatment as well as funding sustainability. Effective solutions targeting these challenges were crucial to improve early detection and treatment of cervical cancers, including offering HPV self-sampling as part of cervical cancer screening, adopting optimal screening and treatment strategy, applying mobile health interventions to overcome health system barriers to cervical cancer screening, enhancing health education and incorporating the existing health resource with screening services. In fact, given the shared value, culture norms and development agreement with the common goals, every nation in ASEAN is intertwined with the shared destiny. Therefore, considering ASEAN as an entirety, and advocating for the collaborations among various countries and stakeholders regarding cervical cancer prevention, is pivotal for improving public health services of this community. ASEAN as one of the largest economies in the world is the home for more than 650 million people. Achieving cervical cancer elimination among ASEAN economies will not only contribute to a healthy, dynamic and prosperous ASEAN, but also benefit the humankind community as a whole, by accelerating the process of global cervical cancer elimination, (Zhao S, et al, in 2021).

The Roles of Government

WHO also plays a key leadership role in the coordination and promotion of the global fight against NCDs and the achievement of the Sustainable Development Goals (SDGs) target 3.4, and in 2019, the World Health Assembly extended the WHO Global action plan for the prevention and control of NCDs 2013–2020 to 2030 and called for the development of an Implementation Roadmap 2023 to 2030 to accelerate progress on preventing and controlling NCDs. The Roadmap supports actions to achieve a set of nine global targets with the greatest impact towards prevention and management of NCDs.

Global action plan for the prevention and control of NCDs 2013–2030 and the following five voluntary global diabetes-related targets for 2025: 25 percent relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases; halt the rise in diabetes and obesity; at least 50 percent of eligible people receive medicinal treatment (including glycaemic control) and counselling to prevent heart attacks and strokes; 80 percent availability of the affordable basic technologies and essential medicines, including generics, required to treat major NCDs, including diabetes in both public and private facilities; and 30 percent relative reduction in prevalence of current tobacco use in persons aged 15+ years. Also, the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of NCDs (United Nations General Assembly resolution (2011), which recognizes the primary role and responsibility of

Governments in responding to the challenge of NCDs diseases by developing adequate national and multisectoral responses for their prevention and control.

Indonesia aspires to become a nation where cervical cancer is eliminated as a public health concern and envision a future where cervical cancer is a disease of the past, and every women can live a healthy life free from it is threat. Therefore, Indonesia government under the Ministry of Health has made several policies related to cancer and diabetes from 2013-2023. The following are several policies regarding cancer and diabetes:

1. Regulation of the minister of health of the Republic of Indonesia number 29 of 2017 about amendment to regulation of the minister of health number 34 of the year 2015 on overcoming breast and cervix cancers *(Peraturan Menteri Kesehatan Republik Indonesia No. 29 Tahun 2017 tentang perubahan atas peraturan Menteri Kesehatan No. 34 Tahun 2015 tentang Penanggulangan Kanker Payudara dan Kanker Leher Rahim);*
2. Regulation of the Minister of Health of the Republic of Indonesia Number 22 of 2018 about Technical Instructions for Restrictions on the use of the Drug *Transtuzumab Metastasic* Breast Cancer in National Health Insurance Services *(Peraturan Menteri Kesehatan Republik Indonesia No. 22 Tahun 2018 Tentang Petunjuk Teknis Restriksi Penggunaan Obat Transtuzumab untuk Kanker Payudara Metastasik pada Pelayanan Jaminan Kesehatan Nasional);*
3. Regulation of the Minister of Health of the Republic of Indonesia Number 5 of 2017 about National Action Plan for Management of Non-Communicable Diseases Year 2015-2019 *(Peraturan Menteri Kesehatan Republik Indonesia No. 5 Tahun 2017 Tentang Rencana Aksi Nasional Penanggulangan Penyakit Tidak Menular Tahun 2015-2019);*
4. Regulation of the Minister of Health of the Republic of Indonesia Number 69 of 2019 about Organization and Work Procedures *"Dharmais"* Cancer Hospital Jakarta (*Peraturan Menteri Kesehatan Republik Indonesia No. 69 Tahun 2019 Tentang Organisasi dan Tata Kerja Rumah Sakit Kanker Dharmais Jakarta);*
5. Regulation of the Minister of Health of the Republic of Indonesia Number 46 of 2020 about Organization and Work Procedures *"Dharmais"* Cancer Hospital Jakarta (*Peraturan Menteri Kesehatan Republik Indonesia Nomor 46 Tahun 2020 tentang Organisasi dan Tata Kerja Rumah Sakit Kanker Dharmais Jakarta);*
6. Regulation of the Minister of Health of the Republic of Indonesia Number 21 of 2020 about Ministry of Health Strategic Plan Year 2020-2024 (*Peraturan Menteri Kesehatan Republik Indonesia No. 21 Tahun 2020 tentang Rencana Strategis Kementerian Kesehatan Tahun 2020-2024);*
7. Regulation of the Drug and Food Control Agency Number 36 of 2019 about Guidelines for Assessing the Efficacy and Safety of Anti-cancer Drugs (*Peraturan Badan Pengawas Obat dan Makanan No. 36 Tahun 2019 tentang Pedoman Penilaian Khasiat dan Keamanan Obat Anti Kanker);*
8. Decree of the Minister of Health of the Republic of Indonesia Number HK.01.07/Menkes/603/2020 about National Guidelines for Medical Services Management of Adult Type-2 Diabetes Mellitus (*Keputusan Menteri Kesehatan Republik Indonesia Nomor HK.01.07/Menkes/603/2020 tentang Pedoman Nasional Pelayanan Kedokteran Tata Laksana Diabetes Mellitus Tipe-2 Dewasa);*
9. Regulation of the Minister of Health of the Republic of Indonesia Number 3 Year 2023 about Internal Health Services Tariff Standards Implementation of the Health Assurance Program (*Peraturan Menteri Kesehatan Republik Indonesia No. 3 Tahun*

2023 tentang Standar Tarif Pelayanan Kesehatan Dalam Penyelenggaraan Program Jaminan Kesehatan);

10. Regulation of the Minister of Finance of the Republic of Indonesia Number 66/PMK.05/2013 about General Service Agency Service Rates *"Dharmais"* Cancer Hospital Jakarta at The Ministry of Health (*Peraturan Menteri Keuangan Republik Indonesia No. 66/PMK.05/2013 tentang Tarif Layanan Badan Layanan Umum Rumah Sakit Kanker Dharmais Jakarta Pada Kementerian Kesehatan).*

The government also formulated several policies and programs for eliminating of diabetes and cancer, namely: (1) Cervical cancer elimination plan for Indonesia 2023-2030; (2) Diabetes Mellitus guidelines 2008; (3) Guidelines for the Management and Prevention of Diabetes Mellitus Type-2 *(Pedoman Pengelolahan dan Pencegahan DMT2);* (4) Book on Health Development Performance in Indonesia 2020 (Buku Kinerja Pembangunan Kesehatan di Indonesia 2020); (5) Track Record of Non-Communicable Disease Cohort Study in Bogor City in 2020 *(Rekam Jejak Studi Kohor Penyakit Tidak Menular di Kota Bogor Tahun 2020).* Apart from making policies in the form of the regulations, Indonesia government has also made several strategic plans, guidelines and researches for eliminating cancer and controlling diabetes. The government also continues to make efforts through healthy living community movement programs as well as campaigns to prevent cancer, especially for women. Research on cancer and diabetes continues to be carried out, because the government is obliged to provide policies based on existing evidence in society. In addition, Indonesia has been trying to make traditional medicine to overcome cancer and diabetes through several studies. Meanwhile, the challenges of diabetes management in Indonesia was there were a number of limitations in the data retrieved including the paucity of data representative at the national level, lack of a clear reference date, lack of primary care data, and lack of data from certain regions of the country. If left unaddressed, the growing prevalence of diabetes in the country will pose a tremendous challenge to the Indonesian healthcare system, particularly in view of the Government's 2010 mandate to achieve universal health coverage by 2014. Essential steps to address this issue would include: placing diabetes and non-communicable diseases high on the Government agenda and creating a national plan; identifying disparities and priority areas for Indonesia; developing a framework for coordinated actions between all relevant stakeholders, (Soewandono P, et al, 2013).

Cervical Cancer Elimination Plan for Indonesia 2023 – 2030

The National Cervical Cancer Elimination Plan for Indonesia (2023-2030), developed by the Ministry of Health in partnership with key national and international stakeholders, is a comprehensive, whole-of-society strategy to accelerate progress towards the elimination of cervical cancer. The goal of this elimination plan is to provide national vision and clarity at the national level for all stakeholders on the path to cervical cancer elimination. This Plan builds upon and adopts national, regional, and international guidance and planning on cervical cancer elimination. Anchored on this vision, the Elimination Plan is built upon four pillars of action: (1) service delivery, (2) education, training, and outreach; (3) key enablers of progress, and (4) governance and policy. Through robust local and national leadership, evidence-based programming, and multi-stakeholder collaboration, these pillars lay the foundation for specific priority areas and corresponding strategies and actions to *"leapfrog"* Indonesia to cervical cancer elimination.

Pillar 1 is service delivery: There are three priorities of service delivery, namely: *Priority-1 is vaccination*. Goals for this priority is to ensure the nationwide expansion of the HPV vaccination program is properly implemented in elementary schools, Madrasah Ibtidaiyah (MI), and other entities that can reach target populations, including in and out-

ofschool children (girls and boys) and women between ages 21 and 26. The strategies for reaching this goal are (1) Secure sufficient, affordable, and reliable HPV vaccines, prioritizing the local procurement of high-quality products; (2) Increase the quality and coverage of vaccine delivery; (3) Improve the efficiency of vaccine delivery. *Priority-2 is screening*. Goal of this priority is to ensure the nationwide rollout and implementation of a screening program targeting all women aged 30 to 69. There three strategies for achieving this priority are (1) Ensure an affordable supply of quality-assured, high-performance screening test, prioritizing the local procurement of high-quality products; (2) Increase the quality and coverage of cervical cancer screening; (3) Review and improve the efficiency of screening methods, tools and technologies. *Priority-3 is treatment*. The purpose of this priority is to establish a timely and comprehensive treatment pathways for women diagnosed with cervical pre-cancer and cervical cancer to have access to quality treatment and care. To reach this goal the government make four strategies are: (1) Strengthen overall service capacity for cancer treatment and care services in alignment with the national cancer control plan; (2) Strengthen pathology services for quality and timely diagnosis; (3) Improve access to surgery, cryotherapy, radiotherapy, chemotherapy, pathology, and palliative care services for quality and timely treatment; (4) Create an enabling environment for patients to receive cervical cancer treatment.

Pillar 2 is Education, Training and Outreach: Priority-4 is healthcare workforce strengthening. Goal of this priority is strengthen the healthcare workforce through training and capacity building to provide evidence- based information and timely, quality cervical cancer interventions comprehensively and equitably. There are two strategies for achieving this priority are: (1) Strengthen a clinical and allied health capacity building and training to health professionals on cervical cancer interventions and evidence-based information that are in line with national guidelines; (2) Optimize the size and distribution of the healthcare workforce to deliver cervical cancer interventions in a comprehensive and equitable manner. *Priority-5 is public awareness and education*. Goal for this priority is Rally the community towards the goal of cervical cancer elimination, and improve community understanding of the role all interventions including HPV vaccination, primary cervical cancer screening and secondary prevention have in reducing cancer risk, severity, and mortality. There are four strategies for this priority namely: (1) Widely disseminate the national goal of cervical cancer elimination to rally individuals and communities to work together towards the cause; (2) Develop and disseminate evidence-based messaging for the public on the benefits, availability, safety, and efficacy of HPV vaccination; (3) Develop and disseminate evidence-based messaging to communicate the benefits of cervical cancer primary screening; (4) Ensure communities and patients have equitable access to quality information about cervical cancer symptoms and that each cancer patient has tailored information about their diagnosis, intended treatment, and planned optimal care pathways.

Pillar 3 is Enablers of progress: Priority-6 is monitoring, evaluation and research. Goal for this priority is to ensure a robust nationwide monitoring, evaluation and research strategy to monitor progress and advance efforts to strengthen cervical cancer elimination activities continuously. For achieving this priority, there are three strategies are: (1) Strengthen and enhance existing cervical cancer registries that guide monitoring, evaluation, and research, in line with international standards and definitions; (2) Set specific time-bound targets, milestones and indicators for monitoring and evaluating the national cervical cancer elimination program; (3) Strengthen the local evidence base through scientific, behavioral, and implementation of research to better inform cervical cancer elimination policies and programs that translate to better patient and population outcomes. *Priority-7 is Digital Enablers*. Use digital tools, as an appropriate, to facilitate access to cervical cancer prevention and control services, improve programs effectiveness and efficiency, and promote

accountability is goal for this priority. There are two differences of strategies to reach this goal are: (1) Establish and integrate digital registries to support the program implementation, monitoring, and impact; (2) Develop a digital cervical cancer elimination information platform, paired with data from *"Satu Sehat"* as a repository for information for providers, patients, and partners on cervical cancer elimination policies, programs, and services.

Pillar 4 is Stewardship and Coordination: Priority-8 is Governance and Policy. Goal for this priority is to ensure a robust governance mechanism to efficiently and effectively fulfill the national commitment to cervical cancer elimination goals, strategic priorities, and actions as outlined in the Elimination Plan. There are three priorities for achieving this goal are: (1) Empower and strengthen the role of the Ministry of Health to govern Indonesia's cervical cancer elimination Program and monitor its progress; (2) Ensure a whole-of-government approach that aligns with and draws on the respective strengths and mandates of relevant Ministries and local development planning agencies; (3) Ensure prioritization of local products and local manufacturing that help increase the opportunities for domestic industry, while adhering to global quality standards. *Priority-9 is financing for elimination*. Goal for this priority is Ensure sufficient and sustainable funding and its efficient allocation for the achievement of national cervical cancer elimination goals. Strategies for this goal are: (1) Undertake a costing analysis that estimates and projects the budgetary needs in support of the Elimination Plan; (2) Establish a cervical cancer elimination budget for the Ministry of Health and other entities to deliver cervical cancer elimination goals; (3) Engage with domestic and international funders to channel alternative sources of financing for the Elimination Plan. *Priority-10 is Intersectoral collaboration and partnership*. Goal for this priority is to promote a whole-of-society commitment to cervical cancer elimination through intersectoral collaboration and partnerships. There are two strategies are: (1) in partnership with the multi-stakeholder cervical cancer elimination task force and establish a multi-stakeholder platform for cervical cancer elimination dialogue; (2) Promote and catalyze partnership opportunities between sectors, including government, international and regional multilateral organizations, global policy and scientific fora, private sector, and civil society.

Diabetes Mellitus guidelines 2008

This guideline regulates several things, namely: (1) Policies, strategies and activities; (2) Main activities of central stakeholders, provincial health services, district/city health services, hospitals, community health centers; (3) Work mechanism consisting of planning, implementation, monitoring and evaluation.

Policies, strategies and activities: Policy and program, to achieve the goal of controlling diabetes, several technical policies have been established, including the following: (1) Preventing and controlling risk factors, finding and managing cases appropriately, epidemiological surveillance and communication, information and education on diabetes mellitus; (2) Establish standards, norms, guidelines and work procedures by referring to applicable guidelines and regulations; (3) Increase the capacity of officers and the community and ensure the availability of facilities and infrastructure to control diabetes mellitus; (4) Increasing work networks across sectors, programs and related stakeholders both at the center and provinces and districts/cities; (5) Developing community potential towards independence through an institutional approach at the village/district level. *Strategy implementation*, there are several implementation strategies regulated in the diabetes mellitus control guidelines to achieve program success effectively and efficiently, including: (1) Control of diabetes mellitus based on facts and priority scale; (2) Carrying out outreach and advocacy to the government, legislative parties and stakeholders as well as regional governments; (3) Carry out guidance and monitoring and evaluation of diabetes mellitus control programs; (4) Intensification of efforts to prevent and control risk factors, epidemiological surveillance,

discovery and management of DM cases; (5) Increasing partnerships through national, regional and international networks; (6) Utilize science and technology as well as the results of research or studies that support efforts to improve DM control programs; (7) Community empowerment through the formation of various community groups in villages/sub-districts such as "*posyandu*" (for toddlers), "*poslansia*" (for the elderly), etc.; (8) Increasing roles and functions according to regional authority and utilizing central resources through a budgeting system (de-concentration and assistance funds). *Project and Activities,* there are several activities in controlling DM, namely prevention and management of risk factors, case discovery and management, epidemiological surveillance, networking and advocacy.

Main activities of central Government, provincial health services, district/city health services, hospitals, community health centers: *Central Government,* in this guideline there are 12 main activities carried out by the central government, including: (1) Formulate general and technical policies; (2) Develop norms, standards, procedures, modules and guidelines; (3) Prepare a DM program plan according to activity priorities; (4) organizing training of trainers; (5) Carry out outreach and advocacy to cross-programs, cross-sectors and policy holders in the central, provincial and district/city governments; (6) Providing technical guidance for DM control programs; (7) Monitoring and evaluating the implementation of DM policies; (8) Compiling an annual report in the field of DM control. *Provincial health services,* the provincial health service has several main activities regulated in this guideline, namely: (1) implementing policies, regulations and legislation in the field of DM; (2) Disseminate general and technical guidelines, modules, standards and procedures in the field of DM; (3) Carrying out early detection of DM in districts/cities in an evidence-based framework by collecting research data; (4) DM epidemiological surveillance; (5) Organizing training of trainers for district/city DM program holders or managers; (6) Counseling, outreach, advocacy, monitoring and evaluation; (7) Carry out recording and reporting and send it to the central government (ministry of health). *Hospital and Puskesmas,* the main activities that must be carried out by hospitals and health centers (district level) are: (1) Carrying out early detection of DM risk factors; (2) Carry out active discovery and management of DM cases; (3) Organizing DM control training; (4) Carry out DM epidemiological surveillance; (5) Carry out recording and reporting to the central government.

Work mechanism consisting of planning, implementation, monitoring and evaluation: DM control work mechanism in stages starting from the planning, implementation to monitoring and evaluation stages. *Planning,* the planning stage consists of three stages, namely: (1) Estimation of community needs and policy advocacy; (2) Coordination of policy integration and DM control strategies; (3) Identification of policies and strategies for implementing activities. *Implementation,* the implementation of DM control is carried out through three stages, including the core implementation stage and the desired implementation stage. *Monitoring and Evaluation*, monitoring and evaluation are needed to ensure that DM control strategies can be implemented, monitored and evaluated efficiently and effectively. Monitoring is carried out in two ways, namely: field visits and progress reports. Evaluation can be carried out at the planning stage (ex-ante evaluation), activities in progress (on-going evaluation), activities that have been completed (terminal evaluation) and activities that are already functioning (ex-post evaluation).

Guidelines for the Management and Prevention of Diabetes Mellitus Type-2 (Pedoman Pengelolahan dan Pencegahan DMT2)

This guideline for the management and prevention of adult type-2 diabetes mellitus in Indonesia contains DM management which consists of: (1) Diagnosis; (2) Management of DM is divided into two, namely general and specific implementation steps. At the special

management stage there are several things, namely education, medical nutritional therapy, physical exercises, pharmacological therapy, management principles and control criteria; (3) Integrated management of cardiovascular risk in diabetes mellitus. At this stage, several things are explained, namely: dysplidemia, hypertension, obesity and coagulation disorders; (4) Diabetes complications consisting of acute and chronic complications; (5) prevention of type 2 diabetes mellitus, namely primary, secondary and tertiary prevention. Apart from that, this guide also explains special problems that occur such as infections, diabetic feet and osteomyelitis, etc.

Research and Publications

The government through Ministry of Health RI has allocated a budget for research and scientific publications to solve public health problems. This is done to implement evidence-based policymaking, it helps the government makes correct decisions based on accurate evidences. There is several research carried out by the government through the National Health Research and Development (NIHRD) which has now changed its name to the Health Policy Agency. This research is published in the form of books, monographs, journals and articles. Apart from that, research results are also made in the form of policy briefs, memos and policy recommendations. Research that has been carried out by the government and is national in nature includes: (1) Indonesia Basic Health Research; (2) Health Facilities Research; (3) Total Diet Study; (4) Cohort Study and; (5) Studies in collaboration with other institutions namely: WHO, Global Fund, Center for Diseases Control (CDC), etc.

Indonesia Basic Health Research (Riskesdas): Riskesdas is national scale research that is used as a basis for evidence-based policy making. *Riskesdas* uses the HL Blum conceptual framework by looking at the determinants of health status, health services, behavior, environment and biomedicine. Scope of this research is research collected at the level public. Most of the indicators collected can illustrate district/city level. Indicators collected through blood tests and dental and oral examination can only reflect the national level. Design of this study is a cut-off design latitude (cross-sectional) and non-intervention. In this *Riskesdas* book, you can see the achievements of Sustainable Development Goals (SDGs) indicators and the National Medium Term Development Plan (RPJMN) on Health, which presents national and provincial level data. *Riskesdas* is also integrated with the National Socio-Economic Survey (SUSENAS), it is hoped that it will be able to produce complete information within the framework of building *"One data"* approach. General purposes for this research are to provide information on the degree of health that has been achieved over the period the last 5 years and information on the magnitude of the problem, risk factors related to degree measured health, as a consideration in formulating health development policy in Indonesia and availability of health data based on community characteristics as following: (1) Health status: prevalence of infectious diseases, non-communicable diseases, mental illness, congenital defects, injuries, disability status, teeth and mouth, reproductive health, infant and toddler health, nutritional status, hematology and blood chemistry; (2) Health knowledge and behavior: comprehensive knowledge and HIV/AIDS stigma, hygienic behavior, use of tobacco, alcohol, frequency of eating risky foods, physical activity, fruit and vegetable consumption, drug use behavior, tobacco use and drinking alcoholic; (3) Sanitary status of the residential environment; (4) Health service efforts: access and health services, coverage maternal and child health services.

Cohort Study: Cohort studies are the strongest observational research design and are longitudinal in nature to describe patterns in the rate of emergence of new cases (incidents) and changes in risk factors for non-communicable diseases and the natural history of the disease. This book is historical evidence of the journey of the Cohort Study which is

described chronologically and in detail covering the dynamics of changes that occurred including the preparation process, human resources, substance, data collection process, results of the development of the cohort study and plans to make the cohort an integrated information service, (Riyadina W, et al, 2020).

Some studies also found evidences that the effective policy and interventions have resulted in decreased proportions of women diagnosed with metastatic breast cancer at diagnosis in high-income countries, yet inequality persists, which needs to be addressed through increased awareness of breast cancer symptoms and early detection. Improving global coverage and quality of population-based cancer registries, including the collection of standardized stage data, is the key to monitoring progress, (Fuentes JDB, et al, in 2023). In addition, the knowledge and attitude score did not reflect on student's practice on cervical cancer and its prevention. Effort to increase the awareness toward cervical cancer should be endorsed through university curriculum and public health policy, (Winarto H, et al, 2022). *R*ecommendations for Government made by public participation as well, for instance: *"Bibliometric"* surveillance and *"Scientometric"* Analysis are method to analyze the scientific publication. These methods can make it easier for researchers to carry out mapping and visualization of diseases research. It is necessary to analyze the scientific publications on cancer epidemiology in Indonesia through bibliometric analysis for aiming to complement the national survey data. The bibliometric data is retrieved from Scopus database and data is further presented in a table, distribution map, and visualized co-occurrence network. The visualization of co-occurring keywords was performed on VosViewer, and further analyzed qualitatively and quantitatively, (Iqhrammullah M, 2023). Also, mapping and visualization of cancer research use *"scientometric analysis"*. Scientometric study using descriptive analysis to determine annual growth patterns in publications across all cancer research literature from Indonesia is comfortable to develop a classification system for both research type and study design which is applied to all included publications. A visualization software tool (VOSviewer) can use to explore the geographical distribution of research activity. The Wilcoxon rank-sum test use to determine the influence of international collaboration on the impact factor of journals in which articles will be published. This method can increase in the number and range of topics explored in cancer-related publications over time is identified. The summary of the current corpus of cancer-related research for Indonesia can be used to direct the development of the national cancer control plan alongside informing the national cancer research strategy. The novel and feasible scientometric approach can be used to direct future national and regional mapping or cancer research, (Puspitaningtyas H, et al, 2021).

Diabetes mellitus is a severe metabolic disorder that can promote various complications and reduce the quality of life of diabetic patients, even causing death, threatening public health in the world. Medicinal plants can potentially treat DM due to the effectiveness stage of diabetes progression and its complications, toxicity and safety profile, availability. Indonesia is known for biodiversity and ethnic richness. Numerous reports discussed traditional medicine system, including the ethnopharmacological studies of antidiabetic properties. Medicinal plants used to treat Diabetes Mellitus might be used for further research to explore the discovery and development of phytomedicines, (Arifah FH, et al, 2022).

Conclusions

Cancer and diabetes are significant public health problem in Indonesia and WHO and IDF predictions, these will be increase in the future. The government plays crucial roles in addressing these issues. Several roles have been implemented by government to eliminate cancer in Indonesia, including: (1) Developed and implemented cancer prevention programs: The government developed and implemented cancer prevention programs to promote healthy lifestyles, such as smoking cessation campaigns, promoting physical activity, and healthy

eating; (2) Increased access to cancer screening services, such as mammography, Pap Tests, and colonoscopies, to detect cancer early when it is most treatable; (3) Improved cancer diagnosis and treatment. The government improved cancer diagnosis and treatment by providing training for healthcare professionals, increasing the availability of cancer drugs and equipment, and improving the quality of cancer care; (4) Invested in cancer and diabetes researches. The government invested in cancer and diabetes researches to better understand the causes of these diseases and developed new treatments; (5) Raised public awareness. The government raised public awareness about cancer and diabetes prevention, early detection, and treatment through educational campaigns and public health programs; (6) Used Artificial Intelligence (AI) to do best treatment for diabetes and cancer detection or monitoring, such as one health data, health technology and some medical devices; (7) Increased research and publications.

Furthermore, Indonesian government has implemented several strategies to eliminate diabetes, including: (1) National diabetes control program: The program aims to improve diabetes prevention and control through health promotion, early detection, and management of diabetes complications. It includes a national registry system for diabetes patients and a diabetes management information system; (2) Healthy lifestyle campaign: The government has launched campaigns to promote healthy lifestyles, including regular exercise, healthy diet, and weight management; (3) Community-based diabetes management: The government has established community-based diabetes management programs to provide education and support for diabetes patients and their families; (4) Health system strengthening: The government is working to strengthen the health system by improving access to diabetes care, including screening, diagnosis, treatment, and follow-up.

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3. Mental Health in China

Yao Mengjie
Far Eastern Federal University, Russian Federation

Mental health is the foundation for the well-being and effective functioning of individuals. It conditions contribute to poor health outcomes, premature death, human rights violations, and global and national economic loss. Mental health is increasingly valued and has become part of the Sustainable Development Goals. This article puts forward the author's suggestions by introducing the distribution of mental illness in the world and China, WHO's guidance on mental health and the Chinese government's policies on promoting mental disorders.

People's Republic of China

The People's Republic of China is located in the east of Asia, on the west coast of the Pacific Ocean. It was established on October 1, 1949, with a land area of about 9.6 million square kilometers, making it the third largest country in the world. And the water area of the inland and border sea is about 4.7 million square kilometers. There are more than 7,600 large and small islands in the sea area, of which Taiwan Island is the largest, with an area of 35,798 square kilometers.

China has a land border of more than 20,000 kilometers with North Korea to the east, Russia and Mongolia to the north, Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, Pakistan, India, Nepal and Bhutan to the northwest and Laos, Myanmar and Vietnam to the south. China has total of 34 provincial level administrative regions, including four municipalities (the capital Beijing, Shanghai, Tianjin, Chongqing), 23 provinces (including Taiwan), five autonomous regions, and two special administrative regions (Hong Kong and Macao). China's terrain is high in the west and low in the east, complex and diverse. China's climate is complex and diverse, spanning tropical, subtropical, warm temperate, mid-temperate, cold temperate, frigid and other climate zones from south to north. In 2021, excluding Hong Kong, Macao, Taiwan and other regions, there was a total of 1.41 billion people living in mainland China, accounting for about 18 percent of the world's total population, the female population accounted for 48.94 percent of the total population, and the average annual population growth rate was about 0.1 percent (World Bank, 2021). China has become one of the countries with the slowest population growth in the world. According to the standards of the World Health Organization, China has entered an aging society in 1999, and the population aged 65 and above accounted for 13.15 percent of the total population in 2021 (World Bank, 2021). The proportion of China's population with high school education or above in the total population had increased from 19.7 percent in 2010 to 30.6 percent in 2020, and the illiteracy rate had dropped from 4.08 percent in 2010 to 2.67 percent in 2020 (National Bureau of Statistics, 2021).

Figure 2
Map of China

Source: Ministry of Natural Resources of China
http://bzdt.ch.mnr.gov.cn/browse.html?picId=4o28b0625501ad13015501ad2bfc0277

Since the mid-1980s, due to the rapid development of the economy, people moved to cities to sought better job opportunities and living conditions, China experienced rapid urbanization. In 2011, the number of urban residents in China exceeded the number of rural residents for the first time. In 2020, floating population accounted for 26.6 percent (376 million) of the total population, and the floating population mainly flowed from rural areas to cities (National Bureau of Statistics, 2022). The distribution of population density in China is very uneven. The eastern and central areas are densely populated, while the western plateau areas are sparsely populated. Population ageing and unbalanced regional development will be the test of future development in China.

The life expectancy at birth in China is 78.81 years in 2023 and 81.5 years for females and 76.2 years for male, females always have longer life expectancy than males. The life expectancy of Chinese residents has increased greatly, from 43.7 years in 1950 to 68 years in 1990 and 78.1 years in 2020. However, while the overall level is improving, there are still large differences in life expectancy between urban and rural areas and regions. Shanghai, one of the most economically developed regions, has an average life expectancy of 84.11 years in 2021, while the average life expectancy of Yunnan, which is economically less developed, is less than 74 years in the same period, (Worldometers, 2023).

Since reformation in China and opening up in 1978, the economic growth of China has maintained a relatively high rate, with an average annual GDP growth rate of about 10 percent. In 2010, China's economy ranked second in the world and became the world's second largest economy. In 2021, Chinese GDP per capita was US$12,556, and purchasing power parity (PPP)-adjusted per capita GDP was US$19,160, which has entered the ranks of

middle-developed countries (World Bank, 2022). The country's economic success can be attributed to a combination of factors, including government policies, large labor force, and focus on manufacturing and exports.

However, the country has faced issues such as income inequality, environmental degradation, and slowing economy in recent years. The government has implemented various policies to address these issues, including efforts to promote domestic consumption and shift towards more sustainable economic model. Furthermore, China unemployment rate for 2022 was 5.6 percent and 10 percent increase from 2021 but the unemployment rate for 2021 was 5.1 percent, 1.9 percent declined from 2020 and unemployment rate for 2020 was 5.2 percent, same as 2019, (National Bureau of Statistics of China, 2022). Based on the data can be explained that there is relevance between the unemployment rate and mental health disease that is the higher unemployment rate, it influence people anxious.

Mental health and mental disorders

Mental health

According to the WHO data, 2023 that the definition of mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being that underpins our individual and collective abilities to make decisions, build relationships and shape the world we live in. Mental health is a basic human right. And it is crucial to personal, community and socio-economic development. Mental health is more than the absence of mental disorders. It exists on a complex continuum, which is experienced differently from one person to the next, with varying degrees of difficulty and distress and potentially very different social and clinical outcomes. Mental health conditions include mental disorders and psychosocial disabilities as well as other mental states associated with significant distress, impairment in functioning, or risk of self-harm. People with mental health conditions are more likely to experience lower levels of mental well-being, but this is not always or necessarily the case.

Mental disorders

As defined by the International Classification of Diseases 11th Revision (ICD-11), a mental disorder is a syndrome characterized by cognition, emotional regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes that underlie mental and behavioral functioning. These disturbances are usually associated with distress or impairment in personal, family, social, educational, occupational, or other important areas of functioning. There are many different types of mental disorders.

In 2019, 1 in every 8 people, or 970 million people around the world were living with a mental disorder, with anxiety and depressive disorders the most common. Mental health conditions can have a substantial effect on all areas of life, such as school or work performance, relationships with family and friends and ability to participate in the community. Depression is one of the leading causes of disability. Suicide is the fourth leading cause of death among 15-29 years olds. People with severe mental health conditions die prematurely as much as two decades early, due to preventable physical conditions. Mental disorders cause huge losses to countries every year. Despite mental health's critical importance to our health and well-being, too many of us do not get the support we need. The services, skills and funding available for mental health remain in short supply, and fall far below what is needed. Throughout our lives, multiple individual, social and structural determinants may combine to protect or undermine our mental health and shift our position

on the mental health continuum. Individual psychological and biological factors such as emotional skills, substance use and genetics can make people more vulnerable to mental health problems. The exposure of unfavorable social, economic, geopolitical and environmental circumstances including poverty, violence, inequality and environmental deprivation can also increases people's risk of experiencing mental health conditions. Risks can manifest themselves at all stages of life, but those that occur during developmentally sensitive periods, especially early childhood, are particularly detrimental. For example, harsh parenting and physical punishment is known to undermine child health and bullying is a leading risk factor for mental health conditions. Protective factors similarly occur throughout our lives and serve to strengthen resilience. They include our individual social and emotional skills and attributes as well as positive social interactions, quality education, decent work, safe neighborhoods and community cohesion, among others. Mental health risks and protective factors can be found in society at different scales. Local threats heighten risk for individuals, families and communities. Global threats heighten risk for whole populations and include economic downturns, disease outbreaks, humanitarian emergencies and forced displacement and the growing climate crisis. Each single risk and protective factor has only limited predictive strength. Most people do not develop a mental health condition despite exposure to a risk factor and many people with no known risk factor still develop a mental health condition. Nonetheless, the interacting determinants of mental health serve to enhance or undermine mental health.

The symptoms of different mental disorders vary, are: *Anxiety Disorders:* Anxiety disorders are characterized by excessive fear and worry and related behavioral disturbances. Symptoms are severe enough to result in significant distress or significant impairment in functioning. There are several different kinds of anxiety disorders, such as: generalized anxiety disorder (characterized by excessive worry), panic disorder (characterized by panic attacks), social anxiety disorder (characterized by excessive fear and worry in social situations), separation anxiety disorder (characterized by excessive fear or anxiety about separation from those individuals to whom the person has a deep emotional bond), and others.

Depression: Depression is different from usual mood fluctuations and short-lived emotional responses to challenges in everyday life. During a depressive episode, the person experiences depressed mood (feeling sad, irritable, and empty) or a loss of pleasure or interest in activities, for most of the day, nearly every day, for at least two weeks. Several other symptoms are also present, which may include poor concentration, feelings of excessive guilt or low self-worth, hopelessness about the future, thoughts about dying or suicide, disrupted sleep, changes in appetite or weight, and feeling especially tired or low in energy. People with depression are at an increased risk of suicide.

Bipolar Disorder: People with bipolar disorder experience alternating depressive episodes with periods of manic symptoms. During depressive episode, the person experiences depressed mood (feeling sad, irritable, and empty) or loss of pleasure or interest in activities, for most of the day, nearly every day. Manic symptoms may include euphoria or irritability, increased activity or energy, and other symptoms such as increased talkativeness, racing thoughts, increased self-esteem, and decreased need for sleep, distractibility, and impulsive reckless behavior. People with bipolar disorder are at an increased risk of suicide.

Post-Traumatic Stress Disorder (PTSD): PTSD may develop following exposure to an extremely threatening or horrific event or series of events. It is characterized by all of the following: (1) re-experiencing the traumatic event or events in the present (intrusive memories, flashbacks, or nightmares); (2) avoidance of thoughts and memories of the event(s), or avoidance of activities, situations, or people reminiscent of the event(s); and (3) persistent perceptions of heightened current threat. These symptoms persist for at least

several weeks and cause significant impairment in functioning.

Schizophrenia: Schizophrenia is characterized by significant impairments in perception and changes in behavior. Symptoms may include persistent delusions, hallucinations, disorganized thinking, highly disorganized behavior, or extreme agitation. People with schizophrenia may experience persistent difficulties with their cognitive functioning.

Eating Disorders: Eating disorders, such as anorexia nervosa and bulimia nervosa, involve abnormal eating and preoccupation with food as well as prominent body weight and shape concerns. The symptoms or behaviors result in significant risk or damage to health, significant distress, or significant impairment of functioning. Anorexia nervosa often has its onset during adolescence or early adulthood and is associated with premature death due to medical complications or suicide. Individuals with bulimia nervosa are at a significantly increased risk for substance use, suicidality, and health complications.

Disruptive behavior and dissocial disorders: This disorder, also known as conduct disorder, is one of two disruptive behavior and dissocial disorders; the other is oppositional defiant disorder. Disruptive behavior and dissocial disorders are characterized by persistent behavior problems such as persistently defiant or disobedient to behaviors that persistently violate the basic rights of others or major age-appropriate societal norms, rules, or laws. Onset of disruptive and dissocial disorders is commonly, though not always, during childhood.

Neurodevelopmental disorders: Neurodevelopmental disorders are behavioral and cognitive disorders, arise during the developmental period, and involve significant difficulties in the acquisition and execution of specific intellectual, motor, language, or social functions. Neurodevelopmental disorders include disorders of intellectual development, autism spectrum disorder, and attention deficit hyperactivity disorder (ADHD) amongst others. ADHD is characterized by a persistent pattern of inattention and/or hyperactivity-impulsivity that has a direct negative impact on academic, occupational, or social functioning. Disorders of intellectual development are characterized by significant limitations in intellectual functioning and adaptive behavior, which refers to difficulties with everyday conceptual, social, and practical skills that are performed in daily life. Autism spectrum disorder (ASD) constitutes a diverse group of conditions characterized by some degree of difficulty with social communication and reciprocal social interaction, as well as persistent restricted, repetitive, and inflexible patterns of behavior, interests, or activities.

Distribution Mental Disorders in the World

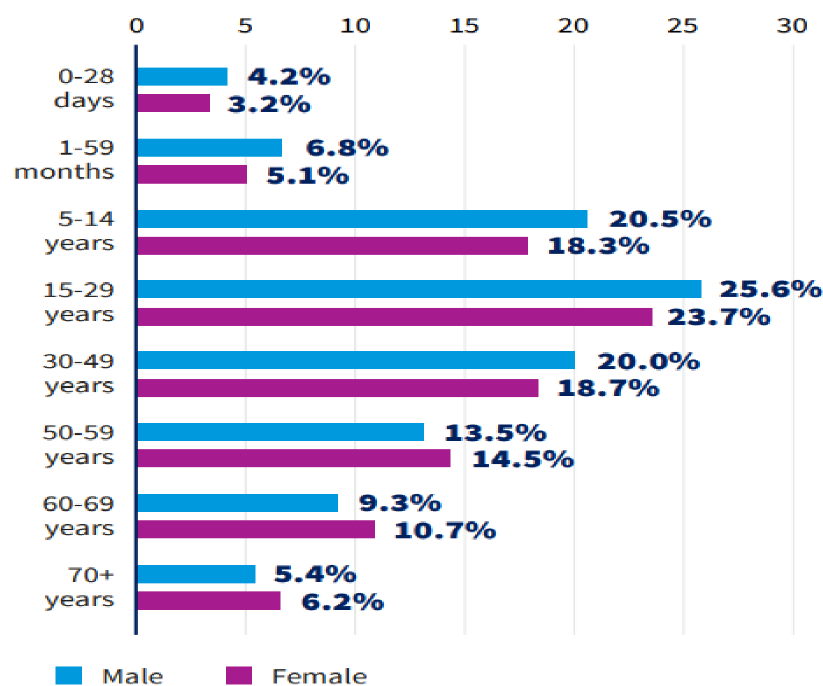
Global Burden of Disease 2019 showed an estimated 970 million people in the world were living with a mental disorder, which means 13 percent of global population is living with mental disorders. More females than males suffer from mental disorders, among them, females account for 52.4 percent, males account for 47.6 percent. Prevalence varies by age, the prevalence is highest among those aged 25 to 49, is 14.9 percent, Then 15 to 19 years old, 50 to 69 years old, the prevalence rate is 14.7 percent. The lowest prevalence is among those younger than 5 years old, is 3 percent. The prevalence of different diseases is shown in the figure.

Prevalence of mental disorders differs between male and female. The prevalence of mental disorders in male is 12.5 percent and the prevalence of mental disorders in female is 13.5 percent. People suffer from different mental disorders at different rates, but depressive disorder and anxiety disorder are the most common. People suffer from higher rates of depressive disorder and anxiety- disorder; the rates are 3.8 percent and 4.0 percent. People suffer from lowest rate of schizophrenia, the rate is 0.3 percent. The prevalence of mental disorders in male, ranked from first to third, are depressive disorders 3 percent, anxiety disorders 3 percent. Other mental disorders 1.9 percent, and the lowest prevalence is eating

disorders 0.2 percent. The prevalence of mental disorders in female, ranked from first to third, are anxiety disorders 5 percent, depressive disorders 4.5 percent, developmental disorder (idiopathic) 1.4 percent, and the lowest prevalence are Eating disorders 0.2 percent and autism spectrum disorders 0.2 percent. I argue it's because of the different roles they play in work and life.

Mental disorders are common in all countries: they occur across all WHO Regions, ranging from 10.9 percent prevalence in the WHO African Region to 15.6 percent in the WHO Region of the Americas. The two most common are mental disorders, depressive disorder and anxiety disorder. Mental disorders can affect people's work and life, and even cause of people to have suicidal thoughts which has brought a heavy burden to the country. Burden of disease studies estimate the population-wide impact of living with disease and injury and dying prematurely. They involve calculations using the Disability-Adjusted Life Year (DALY), where one DALY represents the loss of one year of full health. DALYs combine in one measure the years of life lost to premature mortality (YLLs) and years of healthy life lost to disability (YLDs) to estimate the overall burden from each cause of disease and injury. In 2019, across all ages, mental, neurological and substance use disorders together accounted for one in ten DALYs (10.1 percent) worldwide. Mental disorders accounted for 5.1 percent of the global burden.

Figure 3
Proportion of all-cause years lived with disability (YLDs) attributable to mental disorders, across the life-course, 2019



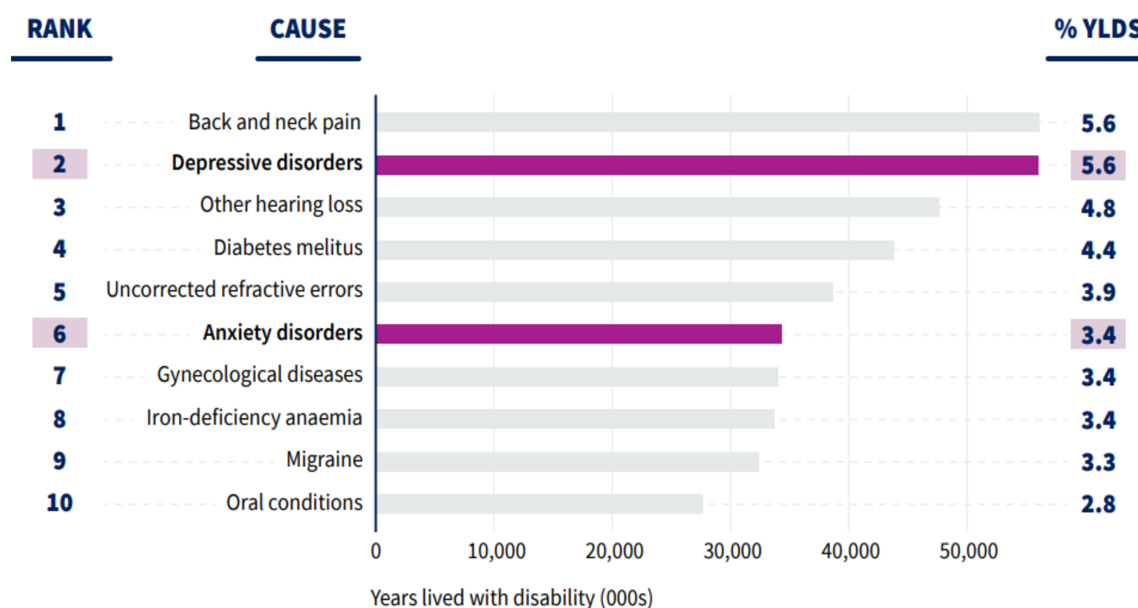
Source: WHO, 2019. Online accessed in December 2023

In all countries, the burden of mental disorders spans the entire life-course: from early life, where conditions such as developmental disorders and childhood behavioral disorders are the biggest contributors to burden; through to adulthood and old age, where depressive

and anxiety disorders dominate. The greatest burden is carried during early adulthood. Across all mental disorders, most of the burden manifests as YLDs, rather than YLLs. This is because of the way burden estimates are calculated, which does not attribute any deaths to conditions such as depressive disorders or bipolar disorder, and which includes self-harm and suicide under a separate category of intentional injuries. Mental disorders are the leading cause of years lived with disability, accounting for one in every six (15.6 percent) YLDs globally. The contribution of mental disorders to YLDs varies across the lifespan, from less than 10 percent for children and older adults to more than 23 percent for young people aged 15–29 years.

Since 2000, both depressive and anxiety disorders have consistently been among the top ten leading causes of all YLDs worldwide. Depressive disorders are the second leading cause of global YLDs, accounting for 5.6 percent of all YLDs in 2019. Two important risk factors for these common mental disorders have been quantified as part of Global Burden Diseases (GBD) 2019: childhood sexual abuse (exposure before 15 years to any unwanted sexual contact); and bullying victimization (intentional and repeated harm of children and adolescents attending school by peers). In 2019, global age-standardized levels of lifetime exposure to childhood sexual abuse and bullying victimization in the preceding year amounted to 9.4 percent and 7.3 percent. Together, these modifiable risk factors accounted for 7.1 percent of all anxiety disorder DALYs and 9.9 percent of all major depressive disorder DALYs globally.

Figure 4
Top ten leading causes of global years lived with disability (YLDs), 2019



Source: WHO, 2019. Online accessed December 2023

Distribution Mental Disorders in China

In 2019, Professor Huang Yueqin and others published the article "Prevalence of mental disorders in China: a cross-sectional epidemiological study" in "The Lancet Psychiatry". This is China's first national mental health survey. It surveyed 32,522 Chinese community residents over the age of 18 from 31 provinces in China, The survey results indicate: The

weighted lifetime prevalence of mental disorders, excluding dementia, is 16.6 percent. Among them, anxiety disorders were the highest (7.6 percent), followed by mood disorders (7.4 percent). Prevalence of mental disorders, mood disorders, substance use disorders, and impulse-control disorder showed differences by gender; substance use disorders, impulse-control disorder, and schizophrenia and other psychotic disorders showed differences in prevalence by age; and schizophrenia and other psychotic disorders showed differences in prevalence by region.

Table 1
Prevalence of Mental Disorder

Mental disorders	Life-time prevalence percent	12-month prevalence percent
Mood disorders	7.4	4.1
Anxiety disorders	7.6	5.0
Substance-use disorders	4.7	1.9
Impulse-control disorders	1.5	1.2
Eating disorders	0.1	<0.1
Schizophrenia and other psychotic disorders	0.7	0.6
Dementia	5.6	

Table 2
Prevalence of Mental Disorder by Gender

Mental disorders	Male prevalence percent	Female Prevalence percent	Urban Prevalence percent	Rural prevalence percent
Mood disorders	3.5	4.6	3.9	4.3
Anxiety disorders	4.8	5.2	5.1	4.9
Substance-use disorders	3.6	0.3	2.1	1.8
Impulse-control disorders	1.7	0.8	1.2	1.3
Eating disorders	<0.1	<0.1	<0.1	<0.1
Schizophrenia and other psychotic disorders	0.7	0.5	0.1	1.1
Dementia	5.8	5.3	4.2	6.6

Table 3
Prevalence Mental Disorder by Age

Mental disorders	18-34years prevalence percent	35-49years prevalence percent	50-64years prevalence percent	≥65years prevalence percent
Mood disorders	4.1	3.8	4.5	3.9
Anxiety disorders	4.3	4.8	6.5	4.7
Substance-use disorders	2.3	2.2	1.8	0.3
Impulse-control disorders	1.6	1.1	1.4	0.2
Eating disorders	<0.1	<0.1	<0.1	<0.1
Schizophrenia and other psychotic disorders	1.4	0.4	0.1	0.1

The prevalence rate in this survey was higher than in 1982 (point prevalence 1.1 percent and lifetime prevalence 1.3 percent), 1993 (point prevalence 1.1 percent and lifetime prevalence 1.4 percent), and 2002 (12-month prevalence 7.0 percent and lifetime prevalence 13.2 percent). The social changes brought about by China's rapid development in the past 30 years, which may lead to psychological stress, and the wide coverage of this study, as well as the reduction of patients who deliberately conceal their symptoms due to the stigma of mental disorders, observation data can find that in the past 30 years, Most mental disorders become more common in China. However, mental health resources in China are in short supply. By the end of 2019, there were 40,850 licensed psychiatrists and psychiatric registrars, averaging 2.9 per 100,000 populations, compared to the average in developed countries of 6.6 per 100,000. Although the lifetime prevalence of mental disorders (16.6 percent) remains low by ICD and DSM standards, if China's population of 1.3 billion is considered, this prevalence value indicates that a very large number of individuals are affected by mental disorders. As mental disorders bring about substantial disease burden, the Chinese Government should pay more attention to mental health care. Effective interventions must take into account national and local political and economic circumstances, which are unique to different areas across China.

In 2021, Huang Xiaolu published her master's thesis on the mental health of high school students. This thesis investigated and analyzed the influencing factors of mental health of high school students in a high school in Zhejiang Province, China. The results of this thesis show that the factors affecting the mental health of high school students include school factors, family factors, social factors, and self-factors. With the gradual severity of employment pressure in China, many parents have exerted more pressure on their children, and teachers have mainly adopted a stricter education model. But more severe stress can lead to long-term anxiety and depression in students. Single-parent families, parents with low income levels and low education levels, left behind children, children are more likely to have mental health problems. The severe employment situation in China and the comparison with

material things will also make some students feel anxious and helpless. Due to individual differences, students with insufficient psychological maturity are more likely to have psychological problems.

After entering society, work pressure and interpersonal pressure will also make people more susceptible to psychological problems, especially now that the competition for employment is severe. People are busy running around in order to survive and have no time to care about their mental health or even physical health. The elderly left behind in rural areas will also suffer from mental problems due to this. Lack of companionship from relatives causes psychological problems.

Health Policy

Over the past few decades, WHO has been an important force in promoting mental health based on the WHO constitution states: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity", it makes people aware that mental health is an integral and essential component of health. It also calls on countries to take mental health issues seriously. The 66th World Health Assembly adopted the WHO Comprehensive Mental Health Action Plan 2013-2020 in May 2013. The action plan is a landmark achievement that focuses international attention on a long-neglected problem and is firmly rooted in the principles of human rights. In 2019, the action plan was extended until 2030 by the 72nd World Health Assembly. This Comprehensive Mental Health Action Plan 2013–2030 builds upon its predecessor and sets out clear actions for Member States, the WHO Secretariat and international, regional and national partners to promote mental health and well-being.

There are four major objectives of the action plan, are: (1) Strengthen effective leadership and governance for mental health; (2) Provide comprehensive, integrated and responsive mental health and social care services in community-based settings; (3) Implement strategies for promotion and prevention in mental health; (4) Strengthen information systems, evidence and research for mental health. Following the WHO calls, the Chinese government has also paid more attention to people's mental health and promulgated a series of laws to protect the right of people to overcome mental health problem. The following are some policies on mental health promulgated by the Chinese government:

1. Mental Health Law of the People's Republic of China (Order of the President of the People's Republic of China No. 62) Date of promulgation: 2012-10-26 Promulgating authority: Standing Committee of the National People's Congress
2. Notice on the issuance of the Work Standards for the Management and Treatment of Severe Mental Disorders (2018 Edition) Release Date: 2018-06-08 Issuing Department: National Health Commission
3. Notice from the General Office of the National Health Commission on exploring the development of special services for the prevention and treatment of depression and Alzheimer's disease (Health Office Disease Control Letter [2020] No. 726)
4. Notice from the General Office of the National Health Commission on the Implementation of Psychological Care Projects for the Elderly (National Health Office Letter on Aging [2019] No. 322)
5. The Central Committee of the Communist Party of China and the State Council issued the "Healthy China 2030" Planning Outline. Date of Issuance: October 25, 2016.

The Chinese government has not only introduced series of policies, but also given specific solutions and many development goals are listed, namely:

1. Notice from the Ministry of Education and 17 other departments on the issuance of the "Special Action Plan to Comprehensively Strengthen and Improve Student Mental Health in the New Era (2023-2025)" Date of Issuance: April 20, 2023
2. The 14th Five-Year Plan for National Economic and Social Development and the Outline of Long-term Goals for 2035 - Mental Health Parts (March 2021)
3. Guidance on strengthening mental health services (National Health and Disease Control and Prevention [2016] No. 77)
4. Notice on issuing psychological counseling and social work service plans for immigrants (National Health Office Disease Control and Prevention Letter [2020] No. 319).

The Chinese government has recommended different solutions for patients with different condition of mental health, namely: For the prevention of mental disorders, the best way is to spread mental health methods and advocate healthy lifestyles for people with mental health problems; for people with mental disorders, it is necessary to actively promote psychological counseling and psychotherapy services; for people who are in For people in psychological crisis, it is necessary to pay attention to psychological crisis intervention and psychological assistance. Besides that, the Chinese government issued many policies to address the following three aspects: the government should improve the mental health service system. Psychological consultation rooms should be generally set up in all departments, industries and communities. All medical institutions should improve their mental health service capabilities; strengthen the construction of mental health professionals; and regulate the development of the mental health service industry.

Under the leadership of global health organizations, China has formulated a series of laws to protect people's rights to mental health and issued many policies to promote people's mental health. But China's national conditions are special, because in the past forty years, it has devoted all its efforts to economic development, which has made China's economy make a huge leap and greatly improved people's material life, but it has neglected environmental protection and people's mental health. Although economic development has slowed down in recent years, the problem will not be solved overnight. However, in addition to the above-mentioned policies and solutions to promote mental health, the Chinese government should also actively solve employment problems, protect the rights of workers, ensure that companies comply with labor laws, and establish a healthy working environment for workers. Strict employment and poor working environments bring a heavy psychological burden to people. Beyond that, the issues that people are most concerned about are the left-behind children, the academic pressure of primary and secondary school students, and the issue of living alone for the elderly, because a healthy working and living environment is more beneficial to people’s mental health.

Conclusions

China has formulated a series of laws to protect people's rights to mental health and issued many policies to promote people's mental health. But China's national conditions are special, because in the past forty years, it has devoted all its efforts to economic development, which has made China's economy make a huge leap and greatly improved people's material life, but it has neglected environmental protection and people's mental health. in addition to the above-mentioned policies and solutions to promote mental health, the Chinese government should also actively solve employment problems, protect the rights of workers, ensure that companies comply with labor laws, and establish a healthy working environment for workers. Strict employment and poor working environments bring a heavy psychological burden to

people. Beyond that, the issues that people are most concerned about are the left-behind children, the academic pressure of primary and secondary school students, and the issue of living alone for the elderly, because a healthy working and living environment is more beneficial to people’s mental health.

China has been making efforts to improve mental health care in recent years, and has implemented several initiatives to address the issue. Here are some of the key aspects of China's mental health strategy: (1) Increased funding: The Chinese government has increased funding for mental health services in recent years. In 2019, the government allocated 11.6 billion yuan (about $1.7 billion) for mental health services, an increase of 20 percent from the previous year; (2) mental health education: China has launched campaigns to raise awareness about mental health issues and reduce stigma. The government has implemented mental health education programs in schools and workplaces, and has encouraged media outlets to report on mental health issues; (3) Community-based care: China has been working to shift mental health care from hospitals to community-based settings. The government has established community mental health centers throughout the country, which provide counseling, therapy, and other services; (4) Telemedicine: China has been using telemedicine to improve access to mental health care in remote areas. Patients can consult with mental health professionals via videoconferencing or other remote technologies; (5) Research and development: China has been investing in research and development of new treatments for mental health disorders. The government has established research institutes and partnerships with international organizations to advance research in this field. Overall, China's mental health strategy is focused on improving access to care, reducing stigma, and advancing research and development. While there is still much work to be done, these efforts represent an important step forward in addressing mental health issues in China.

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4. Cancer Disease In Sierra Leone

Geeka Francis Kpanabom
Ministry of Health and Sanitation Sierra Leone
Far Eastern Federal University

Sierra Leone is finally able to look beyond immediate crises after years of war, the devastating effects of Ebola, and the Corona Virus (Covid-19) outbreak. Confronted with the expanding number of citizens affected by cancer, the Government of Sierra Leone chose, to construct a nuclear medicine and radiotherapy program at a new hospital close to Freetown with the assistance of the International Atomic Energy Agency (IAEA). Like every other illness that influences public healthcare, cancer is one of the driving causes of mortality within the nation and must be considered as a public health crisis. Due to a lack of early diagnostic services, most cancer patients in Sierra Leone only seek medical attention when their disease is incurable or far advanced. There are no radiotherapy services available in the nation, and a serious shortage of personnel and medical supplies makes it difficult to provide other cancer treatment modalities like chemotherapy or surgical oncology. Patients who develop cancer have a low chance of surviving because there is limited access to cancer care services, including trained personnel.

Nowadays, diseases that can be avoided with vaccinations should not cause suffering or death to anyone. In addition, Sierra Leone should strengthen community and individual empowerment, promoting sustainable social and economic development, and protecting people health by making these life-saving services available. Subsequently, the government ought to finance activities to move forward the quality of life of cancer patients within the nation by preparing healthcare experts and clinical staff, building healthcare structures and back public awareness on cancer treatment and early diagnosis campaigns.

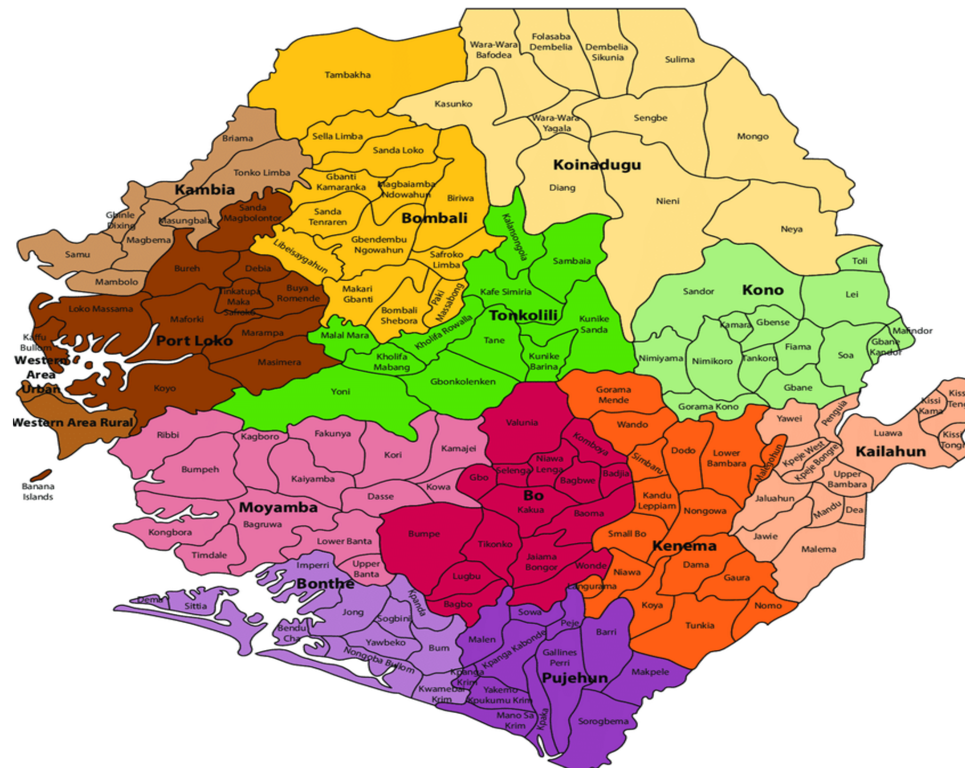
Republic of Sierra Leone

Sierra Leone, formally the Republic of Sierra Leone, is a nation in West Africa, by the Atlantic Ocean. It's known for the white-sand beaches lining the Freetown peninsula. Freetown is the capital city. Sierra Leone is bordered to the west by the Atlantic Ocean, to the north and east by Guinea and to the southeast by Liberia, and. Its range is 71,740 square kilometers, and the country's population is 8,869,688 in 2023 agreeing to World Population Review 2023.

Sixteen ethnic groups make up Sierra Leone, and they all talk particular dialects. Mende (31 percent) and Temne (35 percent), by distant there are the two biggest ethnic groups. In Sierra Leone, the Mende are basically found within the South-Eastern region, whereas the Temne are concentrated within the country's north and encompassing regions. Natives to the region and dwelling in Northern Sierra Leone, the Limba (8 percent), make up the third-largest ethnic group. The Fula (7 percent) comprise the fourth group; they are come from Fulani migrants who arrived from Guinea within the 17th and 18th centuries. Other significant ethnic groups include the Mandingo (2 percent), Kono (5 percent) and Krio (3 percent). Sherbro, Kissi, Loko (2 percent), are natives to Sierra Leone. Krio is broadly spoken within

the nation and English is the official dialect, (World Population Review, 2023). In spite of the fact that there is no official religion in Sierra Leone, nearly all of the populations are Christian or Muslim. Muslims include almost 78 percent of the populace, whereas Christians account for 21 percent. The nation of Sierra Leone is famous for being among the most religiously tolerant countries within the world, with Christians and Muslims as often as possible coexisting gently, (World Population Review, 2023).

Figure 5
Map of Sierra Leone with districts and chiefdoms



Source: *Statistics Sierra Leone. Online accessed in December 2023.*
https://www.researchgate.net/figure/Political-map-of-Sierra Leone-with-districts-and-chiefdoms-Source-Statistics-Sierra_fig1_325894430

The burden of infectious diseases, very high rates of maternal and newborn child mortality and insufficient healthcare framework have been difficult for Sierra Leone to overcome. Various issues have put weight on the nation's public health sector including inadequate funding, a deficiency of healthcare experts and workforce, ineffective resource management, shoddy health administration, and inadequate healthcare infrastructure. These issues have a significant effect on the access of population to, affordability of, and quality of healthcare supplies, which in turn has an effect on generally health results, (Kamara et al., 2017; Service of Health and Sanitation, 2015). Since gold and diamonds are seen as adequate to bolster a nation's economy, the economy has continuously been mainly subordinate on mineral extraction, which has avoided the country's economy from developing. As a result, the country is exceedingly subordinate on foreign help and grants. With 80 percent of the workforce working within the division and contributing 58 percent of the nation's GDP,

farming is another noteworthy division of the economy. Sierra Leone's most well-known trade is rice (World Population Review, 2023). Various components have truly affected Sierra Leone, such as war, high rates of newborn child and maternal mortality, irresistible infections, and limited access to fundamental administrations and healthcare. The life expectancy at birth represents the number of years that an infant would live in case the mortality rates were in place at the time of the infant's birth remained consistent. The life expectancy (years) at birth in Sierra Leone was evaluated by the World Bank's collection of development indicators, which is put together from authoritatively recognized sources, to be 60.06 years on average 60 (Male 59, Female 61) in 2021.

The recent information accessible shows that in 2022, Sierra Leone's GDP per individual was 627.16 US dollars. Sierra Leone incorporates a GDP per capita that's 5 percent higher than the worldwide normal. From 1960 to 2022, Sierra Leone's GDP per capital found the middle value of 555.16 USD, with a highest of 748.93 USD in 2014 and a record lowest 354.09 USD in 2001, (World Bank data, 2022). Gross domestic product is a monetary measure of the market value of all final goods and services produced during a given period of time by a country. Furthermore, the unemployment rate in Sierra Leone fell to 3.60 percent in 2022 from 3.70 percent in 2021. Sierra Leone's unemployment rate found the middle value of 3.71 percent between 1991 and 2022; it topped at 4.70 percent in 2014 and come to a record of 3.20 percent in 2018 as its lowest (World Bank Data, 2022). The unemployment rate in Sierra Leone expresses the extended of the labor constrain that's its population is effectively looking for employment.

Cancer in Sierra Leone

Cancer Distribution in Sierra Leone

Cancer is a wide category of disorders that can start in about any organ or tissue within the body when unusual cells multiply out of control, cross ordinary boundaries to contaminate adjacent body parts, or spread to other organs. The latter process, known as metastasizing, may be an essential donor to cancer-related passing. Other common names for cancer are neoplasm and malignant tumor (WHO, 2022).

Universally, the burden of cancer proceeds to extend, setting significant physical, mental and monetary burdens on people, families, communities and welfare frameworks. Healthcare sectors in numerous low and middle-income nations are ill-equipped to bargain with this burden, and numerous of the world's cancer patients don't have access to high-quality diagnosis and treatment. Strong public health systems in nations have extended the survival rates of numerous cancer patients through early detection and treatment that's viably accessible, high-quality treatment, and palliative care (WHO, 2022). Like a few other diseases impacting the public health, cancer is one of the driving causes of mortality in the country and ought to be treated as a healthcare emergency. In Sierra Leone, an evaluated 3,000 people are analyzed with cancer yearly, and more than 2,000 of them die from the sickness. In case detected early, they are mostly curable or preventable. However, due to a lack of early diagnostic services, most cancer patients in Sierra Leone only seek medical attention when their illness is incurable or far advanced which leads to cancer deaths (Sierra Leone Recognizes Cancer as Public Health Emergency).

The country needs radiotherapy services, and the accessibility of other cancer treatment modalities like chemotherapy and surgical oncology is seriously limited due to a deficiency of therapeutic supplies and faculty. Patients have a low chance of survival on the off chance that they develop cancer due to the limited access to cancer care services, including cancer treatment equipment and trained personnel (Sierra Leone Recognizes Cancer as Public Health Emergency). In Sierra Leone, 4708 new cases were reported in 2020, the recent year for

which information is accessible, there were 3389 cancer deaths, 1 836 male deaths, and 2872 female deaths. Men made up 1,389 of these cancer-related deaths, while women made up 2000. That's over 450 fatalities each day (WHO Global Cancer Observatory, 2022).

WHO, 2022 showed that Breast cancer accounts for the most elevated burden of cancer in Sierra Leone in 2022. Cervical cancer is not distant behind taken after by liver, prostate and colorectum cancers if rated exclusively. The country recorded the highest number for the category of other cancers. Furthermore, classification of new cases by type males, all ages also explained that prostate cancer accounts for the highest burden of cancer among men in Sierra Leone in 2022. Liver cancer isn't far behind taken after by stomach, colorectum and non-Hodgkin lymphoma cancers if evaluated independently. The nation recorded the most elevated number for the category of other cancers among men. Breast cancer accounts for the most noteworthy burden of cancer among ladies in Sierra Leone in 2022. Cervix cancer is not distant behind taken after by liver, ovary and colorectum cancers if rated individually. The nation recorded the most cases for the category of other cancers among women. Sierra Leone recorded 4,708 individuals with cancer in 2020, and over 3,389 died from the infection. They are largely preventable or treatable in case discovered early.

The Future of Cancer in Sierra Leone

The government is on the verge to construct the first national cancer treatment hospital, a radiotherapy office, as part of bigger endeavors to combat cancer, which is to incorporate the creation of its National Cancer Control Plan (NCCP). More than 40 government and civil society members came together for a national workshop to create the NCCP in order to support national efforts and address low cancer survival rates.

The Service of Ministry of Health and Sanitation of Sierra Leone (MoHS) had near collaboration with World Health Organization (WHO) and workshop members, who met within the capital Freetown of country to formulate draft of NCCP. The meeting discussed about the five primary focus areas, including: Diagnosis and treatment; Governance; Palliative care; Prevention and early detection; and strategic information and surveillance. Breast, prostate, cervix uteri, liver, and stomach cancers are the foremost common in Sierra Leone, and the death rates from these infections are rising. Sierra Leone is giving top need to building a radiotherapy office for cancer diagnosis and treatment, as well as to developing a skilled labor force, in an exertion to decrease the country's cancer death rates. The government has set aside funds to start the method of setting up a cancer diagnosis and treatment facility, in spite of the ongoing Corona Virus – 2019 (COVID-19) pandemic. This is due to the fact that they see it as a high need.

Although extra financing is required, Sierra Leone has raised cash for the hospital's development and the purchase of radiation treatment equipment. For this reason, a bankable document sketching out the facility's needs for personnel, apparatus, and civil works - as well as the necessary funding - has been made and submitted to possible donors. There have also been geotechnical overviews completed for the Kerry Town location and possibility considers completed for the foundation of the facility. Construction of specialized facilities outfitted with cancer treatment tools is arranged, and also staff training on overseeing and treating cancers according to the International Atomic Energy Agency (IAEA) (IAEA, Sierra Leone to Set Up First Radiotherapy Facility for Cancer Diagnosis and Treatment). As a major concern for women's wellbeing, breast cancer has been characterized as one of the possibly lethal infections that affect women. A "Breast Week" was held to teach 1,200 women around breast cancer and the significance of breast health, in reaction to the researcher's perception of an unrecorded number of breast lumps and breast cancer cases in Sierra Leonean ladies. An examination of the "Breast Week" that was held in Freetown, Sierra Leone was being done. Looking at whether the women who took part in this extend caught on the data and

lessons they were given was the particular objective of this study. Agreeing to study, most ladies (59.2 percent) are mindful of the dangers related with breast cancer and have listened of somebody who has died from the ailment. These ladies were able to recognize that breast cancer may be an illness that affects women and can be deadly in the event that not identified in an opportune way, concurring to an assessment of their information on the subject, (Shepherd JHEE, et al, 2006). Moreover, women in Sierra Leone have not continuously had reliable access to care and treatment for breast cancer. In moving forward, provision of breast cancer treatment in Sierra Leone, it is pointed to better understand the experiences of women with different stages of breast cancer, how they went approximately roughly getting care and treatment, and how those experiences may possibly be associated. Key discoveries of this research included the following factors: it is challenging to get a breast cancer diagnosis; access to care and treatment for breast cancer patients is inadequate, the cost of breast cancer care and treatment is high; and the quality of care in Sierra Leone changes broadly. Sierra Leonean women's lives may well be improved and cared for by a comprehensive plan and strategy to bolster reasonable, high-quality access to breast cancer care, (Neville A, 2022).

Furthermore, ovarian cancer is also dangerous and need to take attention. Women need knowledge regarding risk factors and symptoms of ovarian cancer for 40 years old and above women. Women are not well-informed around the signs, causes, and risk factors of ovarian cancer. Raising women's awareness of cancer and its side effects may possibly help in diminishing delays in diagnosis as ovarian cancer is regularly recognized at advanced stages, when recovery is more difficult. When teaching ladies about ovarian cancer, nurses should give them specific information on symptoms and risk factors.

Health Policy

On the 9th of august 2023, the Ministry of Health and the United Nations Population Fund (UNFPA) jointly unveiled the National Policy and Strategy for the Elimination of Cervical Cancer, a five-year plan, a five-year plan pointed at eradicating the disease with an accentuation on expanding women's screening, treatment, and childhood vaccination rates. The government imagined a Sierra Leone in which there's no cervical cancer as a public health issue. The Procedure, which lays out the way for Sierra Leone to eradicate cervical cancer, will serve as a guide for accomplishing the objective of having totally eradicated cervical cancer in the nation. The national procedure and arrangement to ending cervical cancer advertised street outline for moving forward. In addition to expanding screening and treatment, the technique points to make strides towards the health and wellness of women and girls by bolstering preventative endeavors by immunizing young women. The nation of Sierra Leone has demonstrated its commitment to progressing women's rights, girls' well-being, and the Economic Improvement Objectives whereas too advancing sex uniformity and women's empowerment through this brassy move.

Countries ought to accomplish and support a frequency rate of less than four per 100,000 women in order to eradicate cervical cancer, agreeing to the World Health Organization (WHO). The achievement of this objective is unexpected upon a few columns and their comparing targets, such as making certain that 90 percent of young women get the Human Papillomavirus immunization in its aggregate by the age of 15, 70 percent of women go through screening by the ages of 35 and 45, 90 percent of women with pre-cancerous conditions receive treatment, and 90 percent of ladies with intrusive cancer receive care as Sierra Leone national policy and strategy to eliminate cervical cancer, 9 August 2023 explanation. Adhering to public health approaches of primary, secondary, and tertiary preventive interventions over life course, the national strategy takes the 2022 WHO Worldwide key proposals for the end of cervical cancer (Sierra Leone national policy and strategy to eliminate cervical cancer 9 August 2023).

National program calculate country-level indicators using data aggregated from monthly facility summary forms that are fed into the Health Management Information System. The indicators monitored at national level are typically a small set of core indicators which provide a focused yet comprehensive overview that informs program tracking and management. (National Policy and Strategy for the Elimination of Cervical Cancer 2023-2028). In Sierra Leone, an evaluated 3,000 people are analyzed with cancer every year, and more than 2,000 according to a report from Sierra Leone Recognizes Cancer as Public Health Emergency According to Global Cancer Observatory in 2020 that Sierra Leone recorded 4 708 new cases 3 389 cancer deaths. These figures are very alarming compared to the general population of the country which is 8,869,688 people in 2023 agreeing to World Population Review, 2023. Insufficient knowledge and education about cancer within the nation contributes to late-stage diagnosis and treatment decreasing the chances of effective treatment. Also, the shortage of cancer screening and diagnostic facilities and equipment serves as a significant barrier to early detection and treatment. Focus should be centered on actualizing compelling public health campaigns to teach the populace on cancer prevention, symptoms, medications and the importance of early detection and treatment.

Although the country has started implementing policies on cancer prevention and treatment, collaboration between the government, non-governmental organizations, and the international donors and partners is significant to reinforcing good healthcare systems, expanding access to cancer care services and education, and training of healthcare specialist. Focusing and investing in cancer research and the establishment of cancer treatment centers can essentially improve the healthcare outcomes for those cancer patients in Sierra Leone. Also, addressing and taking note of the socio-economic determinants of health is very important. Poverty and economic hardship, health education deficiencies, and limited healthcare and human resources contribute to the exposure and vulnerability of people to cancer. Actualizing techniques and strategy implementations to reduce these social challenges will not only improve the general wellbeing but also contribute to preventing, managing and treating cancer effectively. In conclusion, the battle against cancer in Sierra Leone requires a multi-faceted approach that includes awareness on cancer, prevention, early detection and treatment, improved healthcare infrastructure and qualified human resource, and international collaboration with health partners. By tending to these challenges, there's trust for a future where the effect and disease burden of cancer on the individuals in Sierra Leone can be essentially decreased, and the country can work towards building a healthier and more resilient nation.

The Government Policies

For the purpose of eliminating cervical cancer in Sierra Leone, the National Policy and Strategy for the Elimination of Cervical Cancer 2023–2028 adopts the 90:70:90 targets set forth in the current WHO global strategic recommendations for 2022. In order to achieve the Sustainable Development Goals (SDGs) for gender equality (SDG-5) and health (SDG-3), it is fundamental to implement the cervical cancer prevention, treatment, and eradicating techniques depicted. The strategies and policies follow the public health approaches of primary, secondary, and tertiary preventive interventions for women at all stages of their lives. (National Policy and Strategy for the Elimination of Cervical Cancer 2023-2028).

Chapters II and III of Sierra Leone's constitution (Act No. 6 of 1991) lay out essential principles for defending everyone's rights against segregation. "The State directs its policies towards guaranteeing that the wellbeing, security, and welfare of all people in employment are safeguarded and not endangered or mishandled," reads Chapter II Area 8, Subsection 3b. Subsection 3c of the same section guarantees that policy will be coordinated to ensure that there are adequate medical and health facilities for each individual. Subsection 2e of Chapter

III, Section 22, gives bolster and care to defend women's health and prosperity (National Policy and Strategy for the Elimination of Cervical Cancer 2023-2028).

The Public Health Ordinance of 1960 (Government of Sierra Leone, 1960) sets up the administrative system for the state's specialist to control things relating to public health, including food security, housing, sanitation, and infectious disease control. The Health Service Commission was built up as free body beneath the Health Service Commission Act 2011 (Government of Sierra Leone, 2011) to assist the Ministry of Health give the individuals of Sierra Leone with high-quality, sensibly estimated, and effectively public healthcare. Moreover, the government passed the Hospital Boards Act 2003 (Government of Sierra Leone, 2003) to address hospital center administration over the nation and the Local Council Act 2004 (Government of Sierra Leone, 2004) to increase local councils' and their communities' ownership and participation in the health care framework (National Policy and Strategy for the Elimination of Cervical Cancer 2023-2028).

The nation's health service conveyance is administered by a number of approaches that the government has made. As a result, the approach being created will be reliable with these national arrangements as of now input. This will make it easier to coordinated benefit delivery to completely address the wants of women in the country regarding cervical cancer avoidance and control. The Reproductive, Newborn, and Child Health policy for 2011–2015 was subsequently developed using the Reproductive Health Policy and Child Health Policy in 2008. As National Policy and Strategy for the Elimination of Cervical Cancer 2023-2028 explained that the reduction of infectious and non-infectious conditions related to the reproductive health framework in women is one of the objectives of this approach, among other things. Community health workers (CHWs) are a fundamental component of a strong national wellbeing framework, and this was recognized when the National Community Health Worker Policy (Ministry of health, 2016) was drafted. Drafted within the same year), the National Health Promotion Strategy 2017–2021, was designed. With the assistance of different operators at all levels and the Health Education Division, a plan was sketched out in this approach to improve their capacity and improve the standard of health advancement across the nation. In 2019, the Ministry of Health drafted the National Communication Strategy for guiding the Human Papillomavirus Vaccination Campaign in an exertion to rally public support. Cervical cancer is one of the target diseases identified for accelerated reduction in the Non-Communicable Diseases Policy (Government of Sierra Leone, 2020), which was drafted in early 2020 (National Policy and Strategy for the Elimination of Cervical Cancer 2023-2028).

Policy Implementation and Evaluation

The National Cervical Cancer Policy shall be implemented in line with existing national policies and strategies through a multisectoral approach that includes collaboration and partnerships with state and non-state actors. It shall be managed and coordinated by the Ministry of health. At the district, sub-district and community levels, management and coordination shall be done by: District Health Management Teams (DHMT); District Hospital Management Teams; Primary Care Facility Management Teams and Community Units. Collaboration and partnerships shall be realized through the Joint Interagency Coordinating Committee; Health Sector Coordinating Committees; District Health Stakeholders Forum; Sub-District Health Stakeholders' Forum; and Community Health Committees. The policy encourages formation of technical working groups at the district and sub-district levels. The policy shall be implemented in the decentralized health system across the following sectors: Community Health Services; Primary Care Units; District Referral Services; National Referral Services.

Facilities operated by Non-Government Organizations (NGOs), faith-based organizations (FBOs) and the private for-profit sector shall follow the same classification depending on their level of resources and capacity. The referral system shall be developed and strengthened to ensure that clients at all levels gain access to appropriate skilled care. According to the WHO, comprehensive cancer control is founded on integrated, people-centered care. Activities aimed at meeting the goals of this policy will take place at all levels of care: primary, secondary, and tertiary. To ensure that holistic and comprehensive support and services are provided to those who test positive, a referral pathway between the three levels of care will be formulated similar to the one on national referral protocol on levels of healthcare (National Policy and Strategy for the Elimination of Cervical Cancer 2023-2028).

The WHO in December 2014, conducted a survey baseline assessment titled Country Capacity and Preparedness for Introducing or Scaling up a Comprehensive Cervical Cancer Prevention and Control Program (WHO, 2017). The report indicated that Sierra Leone lacked preparedness for providing cervical cancer services, goals and indicators for cervical cancer monitoring. The country had launched a cancer registry in June 2012 but lacked adequate human resources to manage cancer patients, engage in research and surveillance as recommended by World Health Organization.

The Sierra Leone cervical cancer prevention and control Program and scale-up needs a robust Monitoring and Evaluation system with recommendations adopted from the WHO. Indicators will be collected at the community, facility and/or national levels and focus on structure, input, process, or outcome measures. Targets should be developed based on a valid, current situation analysis focusing on prioritized metrics and according to the national and local context. Wherever possible, data should be analyzed by sex, geographic location, ethnicity, and socioeconomic status to allow inequalities in cancer care to be detected and addressed. A population-based survey should be conducted to enable Sierra Leone to measure population coverage of cervical cancer screening and secondary prevention. Population-based surveys will be used to assess cervical cancer screening coverage, and to identify barriers to accessing screening and precancerous treatment services. This will provide country stakeholders with standardized cervical cancer screening and treatment questions that can be incorporated into existing population-based surveys. This component will assist Sierra Leone in monitoring key indicators and measures of cervical cancer screening and treatment and will include screening prevalence; screening intervals; follow-up and treatment of pre-cancer; Human Papillomavirus vaccination; knowledge and awareness; facilitators for screening and barriers to screening and treatment. WHO has standardized questions help to ensure that collected data are useful for Program planning and evaluation and are comparable over time and across other countries (WHO, 2018).

Policy makers and Program managers will need information on the projected costs of introducing cervical cancer interventions in order to make decisions on the ‘when’ and ‘where’ of service introduction and scale-up. Through a facilitated process, the MS Excel-based tool should be introduced to enable health Program planners and managers to estimate, synthesize and analyses Program and service costs. The patient and Program monitoring process includes data collection, aggregation, analysis, and reporting for cervical cancer secondary prevention programmers. Information generated assists the health care providers, facility managers, subnational and national Ministry of Health staff and their partners to collect, systematically analyses and use data to: (1) Better plan, target, tailor, and scale interventions; (2) Assess whether programs are being implemented with quality; (3) Respond effectively when they are not implemented as planned; (4) Report on standardized global indicators. Facility-based surveys should be conducted to gather and evaluate accurate, up-to-date information on the availability of cervical cancer secondary prevention services, the readiness and capacity to deliver services, and the quality of the services being delivered. The

findings will inform the Ministry of Health decision-makers, implementing partners, facility administrators, and service providers with information to provide a comprehensive approach to monitoring cervical cancer screening and treatment service availability, capacity, and quality

Conclusions

Sierra Leone faces significant challenges in mitigating cancer diseases due to limited resources and infrastructure. The country has high burden of infectious diseases such as malaria, HIV/AIDS, and tuberculosis which receive priority attention from the government and international donors. Efforts are being made to improve cancer care in the country. The government has developed a National Cancer Control Plan that aims to strengthen cancer prevention, diagnosis, treatment, and palliative care. The plan includes the establishment of cancer centers and the training of healthcare professionals in cancer management. Non-governmental organizations (NGOs) are also playing a critical role in addressing cancer in Sierra Leone. For instance, the African Cancer Foundation has partnered with local organizations to provide cancer screening and treatment services, as well as education and awareness campaigns. Despite these efforts, significant challenges remain in mitigating cancer diseases in Sierra Leone. Access to cancer care is limited, particularly in rural areas, and there is a shortage of trained healthcare professionals. Additionally, there is a lack of funding for cancer programs, and many people cannot afford the cost of cancer treatment. Overall, while progress is being made in addressing cancer in Sierra Leone, much more needs to be done to improve access to care and reduce the burden of cancer diseases in the country.

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5. Hypertension Disease in Somalia

Abdisamad Hassan Osman
Hidaya Hospital in Mogadishu, Somalia
Far Eastern Federal University

The Federal Republic of Somalia

Somalia is an east African country at the gulf of Arabian Peninsula that has 637,660 km² of area and with the longest coastline in Africa which is 3,333 km, 19th biggest in Africa and 43rd in the world rank. Above the sea level in 410 meters with 140 islands, the country has a border with Yemen at Gulf of Aden, Djibouti, Kenya and Ethiopia. Somalia has four different seasons with hot tropical climate. As the national government system is federal it consists of 6 states (Jubbaland, South west, Hirshabelle, Galmudug, Punt land and Somaliland) and the capital (Mogadishu). In 1975 was the first Census conducted in the country after the independence and 1986 was the second although this census was not published due to significant biases like over counting and for long time ongoing civil war and terrorist activities in 2014 was the third census that has been conducted by state ministry of planning along with UNFPA on population estimation survey of Somalia, this estimated 12.3 million in which 51 percent were male while 49 percent were female in which of them 50 percent were reproductive age bracket, and 14 percent under five children [1].

Figure 6
African map, showing location of Somalia

Source: https://www.worldatlas.com/maps/somalia
Online accessed in 3 December 2023

Population of Somalia

A diverse and resilient population that has persevered through decades of hardships is the hallmark of Somalia, a country in the Horn of Africa. Analyzing demographics, growth trends, the effects of past and present events are all important for comprehending the dynamics of Somalia's population. With its population of about 16 million as of the year 2022, Somalia was a growing country. A large portion of the population or 25 percent of the total is under 25 as demographic composition. This youth bulge presents both opportunities and challenges for the nation's development, as harnessing the potential of this demographic cohort are crucial for economic progress.

Over the years, Somalia's population has grown significantly due to factors like high birth rates and rising life expectancy. However, there have been differences in growth between rural and urban areas across the nation. Urbanization has been increasing as more people move to larger cities like Mogadishu in search of better employment prospects and easier access to basic amenities. Conflicts, natural disasters, and historical events have all had a significant impact on population. Starting in the late 20th century, the nation saw protracted civil unrest that hampered educational opportunities, caused widespread displacement, and disrupted healthcare services. These variables have had a long-lasting impact on population dynamics, which has led to issues like high rates of maternal and infant mortality and restricted access to high-quality education.

Economic Implications, Healthcare and Education

According to The demographic structure of Somalia holds implications for its economic development. While a youthful population can contribute to a dynamic workforce, it also places demands on education, healthcare, and employment opportunities. Sustainable economic growth requires strategic planning to leverage the demographic dividend and address the associated challenges. Access to healthcare and education remains critical components of Somalia's population dynamics, a healthy and educated populace must be promoted via improvements to the healthcare system, maternity and child health services, and educational opportunities. These initiatives have been made possible by international collaborations and assistance, but long-term solutions to the problems still need to be found.

Economic level of the country reflects political stability of the state, despite strategic place it locates the ongoing instability causes economic decline for the last 30 years and fragmented economic sources of the state. There is good news for the last ten years as the political system and security of the country was improved, together economically also stepped up with unpredictable increased last year 2.9 percent, [3]. Somalia still continues economic improvement focusing economic governance institutions, although awkward circumstance like recurrent droughts climate induced natural disasters and global related inflations. Somalia has many opportunities like urbanization, private sector investments like health, education, ports and energy which increase economic level and reduces unemployment rate, similarly there is also many challenges facing government like rapid growth of internal displacement due to droughts, floods and insecurity this can increase poverty level and diminishes efforts for reducing poverty and improving countries economic level. But now efforts are being made in the country to develop economic infrastructure such as ports as Somalia has the longest coast of in Africa, so as to improve roads, agriculture and the most economic aspect of Somalia which is livestock, It is also important to mention production of oil from the seas of Somalia which are still uncovered that the laws and other related issues are engaged in, that will lead the country to a prosperous future. Somalia is heavily reliant on foreign and private health financing due to the government's low tax revenue mobilization mechanism. Due to a lack of comprehensive data on health financing,

the Institute of Health Metric Evaluation (IHME) calculated that the total per capita health spending in 2018 was US$7, consisting of US$ 2 from government spending, US$ 3 from out-of-pocket spending, and US$ 2 from assistance related to health-related development, [4]. Nearly is no private health insurance was available. Due to the high out-of-pocket expenses, people had to borrow money, sell livestock, or take out loans to cover their medical expenses, putting them in risk. Nearly 50 percent of households say they pay for medical care out of pocket.

It was in 1960 when the two independent regions of Italy and the British Somaliland protectorate formed the Republic of Somalia, 9 years of democratic rule, even though there were criticisms, there was a military coup that took over the country. who ruled for almost twenty years, the rebels organized in a tribal way but without a focused plan overthrew the country in 1990, a civil war started in the country, mostly based on who is ruling the country after the regime, almost 10 years of crisis in Djibouti was established in 2000 as a joint government and the majority of the people were loyal to it [5]. They did not take it after the warlord uprisings in 2004. They elected another leader again and terrorist organizations started under him which is still present in the country for a long time, regional semiautonomous and central government are doing together for elections, It is enjoying today that at least once every 4 years an election is held and it is handed over safely which is less in most countries of the region [6]. In addition to impairing healthcare services, the protracted conflict in Somalia has forced millions of people to flee their homes. People who are internally displaced (IDPs) frequently experience unstable living situations, restricted access to medical care, and heightened disease susceptibility. Conflict-related trauma and stress have an additional negative effect on mental health, which subsequently shortens life expectancy.

With decades of conflict and instability behind it, high unemployment rates present a complex challenge for Somalia. Examining the historical background, the effects of the conflict and the current initiatives to reconstruct the economy and generate long-term employment opportunities are necessary to comprehend the complexities of employment dynamics in Somalia. Somalia's economic landscape was severely disrupted by the long-lasting civil conflict that started in the late 20th century and resulted in community displacement, infrastructure destruction, and institutional collapse. A significant portion of the population was left unemployed or underemployed as a result of these disruptions' severe effects on the labor market. Rebuilding from such devastation requires comprehensive strategies that address not only the immediate employment needs but also the long-term development of a resilient workforce.

Conflict is not only directly displaces people from their jobs but also creates an environment that hinders economic activities. Businesses struggle to survive in the face of insecurity, and entrepreneurs find it challenging to establish and sustain enterprises. As a result, the lack of economic opportunities exacerbates the unemployment crisis, contributing to a cycle of poverty and vulnerability. The current employment situation in Somalia reflects the intricate process of rebuilding. Efforts have been made to revitalize the economy, with a focus on sectors such as agriculture, fisheries, and telecommunications. However, progress is incremental, and challenges persist. The informal sector plays a significant role in providing livelihoods for many Somalis, but it often lacks job security and social protection.

A significant concern within Somalia's employment landscape is the high rate of youth unemployment. The nation has a youthful population, and harnessing the potential of this demographic cohort is essential for sustainable development. Youth unemployment not only poses economic challenges but also carries social implications, including the risk of disenchantment and increased vulnerability to radicalization. Addressing unemployment in Somalia requires a multi-faceted approach. Rebuilding infrastructure, enhancing security, and creating an enabling environment for businesses are crucial steps. Investing in education and

vocational training programs can equip the workforce with the skills needed for emerging industries. Additionally, fostering entrepreneurship and supporting small and medium-sized enterprises (SMEs) can contribute to job creation and economic diversification. The international community plays a vital role in supporting Somalia's efforts to overcome unemployment challenges. Foreign aid, investment, and technical assistance can bolster local initiatives and contribute to the creation of a more resilient and inclusive economy. International partnerships should prioritize sustainable development, social inclusion, and the empowerment of marginalized groups. The current an unemployment rate of Somalia is 20 percent with increase in a significant way last years due to population growth and many soon graduates (9).

Total Gross Domestic Product (GDP) Per Capita

Somalia, located in the Horn of Africa, has experienced a tumultuous journey marked by political instability, armed conflict, and economic challenges. Amidst these difficulties, understanding Somalia's Total Gross Domestic Product (GDP) per capita becomes crucial in assessing the nation's economic well-being. In This area explores the factors influencing Somalia's GDP per capita, the challenges it faces, and potential opportunities for economic growth. Somalia has faced prolonged periods of political instability, resulting in weak governance structures and an inability to implement effective economic policies. The absence of a stable government has hindered economic development and contributed to the country's low GDP per capita. Decades of armed conflict, including civil wars and conflicts with extremist groups, have disrupted economic activities, displaced populations, and damaged infrastructure. These conditions have further constrained the growth of the economy, impacting the GDP per capita negatively. Inadequate infrastructure, including transportation, energy, and communication systems, poses significant challenges to economic development. Poor infrastructure hampers productivity, increases transaction costs, and discourages foreign investment, all of which contribute to a lower GDP per capita. The Somali economy is heavily reliant on agriculture, which is vulnerable to climatic fluctuations. Droughts and other environmental challenges often result in crop failures and livestock losses, affecting the income of many citizens and contributing to a lower GDP per capita. The combination of political instability, armed conflict, and economic challenges has led to widespread poverty and significant income inequality.

A large portion of the population struggles to meet basic needs, hindering improvements in the overall GDP per capita. High levels of youth unemployment exacerbate economic challenges in Somalia. The lack of employment opportunities for the growing youth population not only limits individual prosperity but also constrains the overall economic productivity and GDP per capita. Recurrent droughts and other humanitarian crises have led to widespread displacement and increased dependence on humanitarian aid. These crises not only contribute to human suffering but also place additional strain on the economy, impacting the GDP per capita. Establishing a stable and effective government is paramount for economic recovery. Improved governance can create an environment conducive to economic activities, attract foreign investment, and contribute to the overall growth of the GDP per capita. Strategic investments in infrastructure development can enhance economic productivity. Improving transportation, energy, and communication systems will lower transaction costs, stimulate economic activities, and attract both domestic and foreign investments, positively impacting the GDP per capita. Promoting economic diversification beyond agriculture can make Somalia's economy more resilient. Investing in sectors such as technology, services, and manufacturing can create new job opportunities, stimulate innovation, and contribute to a higher GDP per capita.

Health System in Somalia

Health services after the military government, private institutions have become more functional and powerful sector, they are the strongest in terms of community services today, but they only deal with patients who visit a health center, on the other hand the health of the community It has been working together for almost three decades international organizations, regional governments and the federal government. In many areas of the country for security concerns, there is still presence of recurrent of infectious diseases such as measles, diarrhea, TB. The improvement of health services for children and pregnant mothers is also an area that needs to consider, Non-communicable diseases such as diabetes, stroke and psychotic disorders that is still prevalent in the society [4]. In the country, there are four levels of health care facilities involved in the delivery of essential health services. These include primary health care (PHC) units in rural areas, which are the most commonly visited health infrastructure, as well as health facilities at the sub-district level.

Referral health facilities are located in districts, whereas regional hospitals are located in regional capitals, according to latest data, there were 661 operational health institutions in the United States in 2019, Country According to a 2016 survey, the density of health facilities was 1.69 per 10 people. 10,000 people with 0.76 public facilities and 0.93 private facilities for each per 10,000 people, implying that the majority of health services are provided by the private sector [7].

With four tiers of facility-based health care delivery and a community-based program, the Somali health system organizational and management structure aims to offer the populace the broadest possible coverage of health services. These are primary health care units (PHUs) located in the most remote areas of the country. They serve the population of a designated catchment area by offering basic preventive, promotional, and simple curative services. At least one community health worker (CHW), with support from the local government in charge of overseeing the delivery of healthcare services, manages the PHU. The health center's (HC) outreach assistance strengthens PHU services as well, notably in areas like the extended program on vaccination (EPI) and nutrition promotion and education. Over the course of the last 20 years, the private health sector has expanded significantly in each of the zones. These facilities range from traditional private-for-profit and private-not-for-profit healthcare settings, which include educational institutions, small clinics, and diagnostic centers, to full-fledged general hospital settings that provide specialized care. This vast network is used more often in urban areas—where roughly 30–35 percent of the population lives—than it is in the public sector. A significant portion of these services are typically sought in private pharmacies, while nomadic and rural populations have limited access to this more expensive health care. With the exception of those supplied to health programs and interventions backed by the government and international partners, the import and sale of medications and technologies are likewise mostly private. The absence of adopted standard rules of quality and safety for private health practices as well as pharmacy and pharmaceutical regulations serves as an example of the current lack of or poor regulatory requirements for monitoring the private health sector. In contrast, there are noteworthy public-private partnership initiatives in pre-service education of midlevel categories, particularly community midwives, with the potential to increase access to vital health services. The efficacy and safety of the centuries-old, thriving traditional, spiritual, and herbal medicine practices must also be carefully evaluated in order to determine whether they can be mainstreamed into the healthcare system. These practices frequently prevent people from using modern health services, [8].

Life expectancy, which reflects socioeconomic status, the quality of healthcare, and the general standard of living, is a crucial indicator of a nation's overall well-being. For Somalia, a nation beset by a protracted history of political unrest, armed conflict, and economic

hardship, an understanding of life expectancy provides a prism through which to view the complex factors influencing the longevity of its citizens.

Somalia's population's health and life expectancy have been severely impacted by a number of issues the country has faced. The creation of a suitable healthcare infrastructure has been hampered by decades of political unrest, civil unrest, and the absence of a stable administration. When the central government collapsed in 1991, the nation descended into anarchy, disrupting vital services and escalating pre-existing issues. Somalis citizens' life expectancy is significantly influenced by the state of the country's healthcare system. Extended hostilities have resulted in the devastation of healthcare infrastructure, a scarcity of medical experts, and obstacles in the dissemination of medications. In many regions of the nation, particularly in rural areas, access to basic healthcare services is still a challenge. Compounding these problems is the absence of a centralized health system.

Hypertension

Hypertension, also known as high blood pressure, is a prevalent and important global health concern. It is a disorder in which there is a constant excessive force of blood against the artery walls. Hypertension is one of the most common global non-communicable diseases of public health concern. It is associated with different risk factors, and complications include heart failure, coronary heart disease, peripheral vascular disease, stroke, and chronic kidney disease. Worldwide, the prevalence of hypertension is estimated to be as much as 1 billion individuals, and approximately 7.1 million deaths per year may be attributable to hypertension and its complications. With an estimated 46 percent prevalence, it is one of the significant health issues in Africa. Serious health issues like heart disease, stroke, and kidney damage can result from this condition. Cardiovascular diseases are the leading cause of death globally, and hypertension is a major risk factor for these conditions. Over time, the occurrence of hypertension has become more common worldwide, primarily because of factors like aging populations, poor dietary habits, sedentary lifestyles, and rising rates of obesity. Worldwide, the prevalence of hypertension is thought to be over one billion. Because managing and treating hypertension necessitates ongoing medical care and resources, this puts a significant strain on healthcare systems, [11]. Africa has an increasing number of people suffering from hypertension, which is a serious public health issue. A genetic predisposition to hypertension, rapid urbanization, and lifestyle modifications are some of the factors that contribute to the high prevalence of the disease in Africa. What makes the issue worse is that in many African nations, there is restricted access to healthcare, education, and awareness campaigns. Certain African nations have higher urban than rural rates of hypertension prevalence. Increased processed food consumption, sedentary lifestyles, and higher stress levels in urban environments are some of the lifestyle changes linked to this urban-rural disparity. All people in Africa, regardless of their demographic or geographic background, are susceptible to hypertension, it is important to remember, [12].

Distribution of Hypertension

Hypertension is defined as having systolic blood pressure (SPB) ≥140 mmHg or diastolic blood pressure (DPB) ≥90 mmHg or taking medication for hypertension. Hypertension is estimated to affect 33 percent of adult's aged 30–79 worldwide (age-standardized estimate), [13]. As report published by WHO reveals Prevalence of hypertension is similar across groups of countries defined by income level [14], with only a slight difference from 32 percent of adults aged 30–79 years in high-income countries to 34 percent in low-income countries. Regional and country variability is more notable. Regional variation ranges from 28 percent in the WHO Western Pacific Region to 38 percent in the WHO Eastern

Mediterranean Region, [13]. As another research published by WHO explained globally, the prevalence of hypertension is slightly higher among males (34 percent) than females (32 percent). This female advantage is age-related: the global age standardized prevalence of hypertension among people aged 30–49 years is 19 percent for women versus 24 percent for men. This pattern of lower hypertension prevalence among women aged less than 50 years holds in most countries worldwide [15]. However, for people aged 50–79 years, both men and women globally are estimated to have equivalent hypertension prevalence of 49 percent, [14].

A Global epidemiological research that has been done shows that the prevalence of hypertension is rising globally owing to ageing of the population and increases in exposure to lifestyle risk factors including unhealthy diets (i.e. high sodium and low potassium intake and lack of physical activity. However, changes in hypertension prevalence are not uniform worldwide. In the past two decades, high-income countries (HICs) experienced a modest decrease in hypertension prevalence, while low and middle-income countries (LMICs) experienced significant increases. These disparities in hypertension prevalence trends suggest that health care systems in LMICs could be facing a rapidly increasing burden of hypertension and BP-related cardiovascular diseases, in some cases in addition to a substantial burden of infectious diseases. Another research review that has been at global revealed that nationally, prevalence of hypertension in 2019 was lowest in Canada and Peru for both men and women; in Taiwan, South Korea, Japan, and some countries in Western Europe for women; and in some low-income and middle-income countries for men, [15]. Globally, cardiovascular disease and premature mortality are primarily caused by hypertension. The world's mean blood pressure (BP) has either stayed constant or slightly decreased over the past forty years due to the widespread use of antihypertensive medications. Hypertension, on the other hand, is now more common, particularly in low- and middle-income nations (LMICs). 31.1 percent of adults (1.39 billion) worldwide, according to estimates, suffered from hypertension in 2010. Adults in low-income countries (LMICs) were more likely to have hypertension than adults in high-income countries (HICs), where the prevalence was lower at 31.5 percent (349 million people) compared to 31.5 percent (11.4 billion) globally, [16]. There may be some regional differences in the prevalence of hypertension due to variations in the levels of risk factors, such as obesity, alcohol consumption, physical inactivity, high sodium and low potassium intakes, and unhealthy diets. Even with rising rates, there are still few thorough evaluations of the financial effects of hypertension, and low rates of hypertension awareness, treatment, and blood pressure control, especially in low- and middle-income countries. It is necessary to conduct more research to precisely determine the prevalence and financial burden of hypertension globally, as well as to test implementation strategies for its prevention and control, particularly in low-income populations, [17].

A glimpse research about the future shows that worldwide, Croatia is estimated to have the highest prevalence of hypertension in males by 2040, while that of females is in Niger. Among the world’s most populated countries, Pakistan and India are likely to increase by 7.7 percent and 4.0 percent respectively in both sexes. South-East Asia is projected to experience the largest hypertension prevalence in males, whereas Africa is estimated to have the highest prevalence of hypertension in females. Low-income countries are projected to have the highest prevalence of hypertension in both sexes.

By 2040, the prevalence of hypertension worldwide is expected to be higher in the male population than in female. Globally, the prevalence of hypertension is projected to decrease from 22.1 percent in 2015 to 20.3 percent (20.2 – 20.4 percent) in 2040, (18). In Asia, the prevalence of hypertension in urban adult populations is 15–35 percent, a more recent study reported a lower prevalence of hypertension of 31.2 percent in urban South Asia, For SEA

specifically, and a comprehensive review reported an adult hypertension prevalence of 35 percent, slightly higher than that reported in the present study, [19]. A research done in Ethiopia shows, when classifying by age, it was found that 3.8 percent of adults younger 35 years old were hypertensive. The prevalence rate in those between the ages of 35 years to 55 years of age was 16.3 percent while 19.4 percent of adults older than 55 had hypertension, (8). Another research conducted in Nairobi, Kenya shows, that adults aged 40 to 49 years were more likely to develop hypertension (50.0 percent) compared to those aged 18 to 29 years (26.9 percent), [20]. There is relationship between the age group and hypertension developers in both urban and rural areas, as this research Burkina Faso reveals in urban. 14.16 percent for the 25–34 years 'age group, group to 56.49 percent for the 55–65 years' age group and in rural areas the prevalence increased from 8.81 to 30.37 percent for the same age groups, [21]. Male are more likely to develop as some researches shows , as research conducted in Burkina Faso shows that males have 2.4 times to develop hypertensive compared to females, [22].

Another study done in Burkina Faso showed that being male significantly associated with hypertension, [17]. Respondents with higher education had higher chance of having hypertension compared to the respondents with no education. On research done in Ethiopia shows that 487 adults participants, 9 (1.8 percent) of them were illiterate, 34 (7.0) were literate but no formal education, 104 (21.4 percent) had attend primary school. While 133 (27.3 percent) are secondary school level and other remaining 207 (42.5 percent) had certificate or higher, (23). On study done in Pakistan revealed that out of 219 of respondents most of them (93) 42.5 percent were completed secondary Education. 80 (36.5 percent) were illiterate. 23 (10.5 percent) were in the university. While 14 (6.4 percent) were professionals. The other remaining 9 (4.1 percent) were not complete the university, [24]. There is strong relationship to develop hypertension and having previous history of family hypertension. As research conducted in Gondar, Ethiopia, reported that 24 (3.3 percent) of participants, among those 19.6 percent had hypertension, [25]. Most On study conducted Gondar, Ethiopia shows that most of 679 of respondents (628) 92.5 percent were no smokers. 19 (2.8 percent) were currently smoking at least half a pack daily. While the remaining 32 (4.7 percent) were previously smoked the cigarettes, [26]. On research conducted in Nairobi, Kenya revealed that most of 1528 of participants (1321) 86.4 percent were never smoke. Were 130 (8.5 percent) currently smoking the cigarette. While the remaining the 77 (5.1) were past smokers [20]. On study done in Pakistan revealed that out of 219 of respondents most of them (192) 87.7 percent were not smokers. While the remaining 27 (23.3) were smokers, (24). Most of researchers found that non-vegetarian diet and more salt users had higher chance of being hypertensive than others as shown most studies. On study conducted Gondar, Ethiopia shows that most of 679 of respondents (460) 67.7 percent they were use vegetable and oil for meal. 67.6 percent of them were eating vegetables at least 1-3 days per week. 153 (21.1 percent) were have excessive use of salt than other family ones. Half of participants (50.1 percent) were not eat fruits at all time of a week, [27]. Globally found that less physical activity is more chance of hypertension than who had higher activity as revealed the studies. On research done in Ethiopia shows that 487 participants most of them 264 (58.0 percent) had low physical activity, 124 (27.3 percent) had medium physical activity while the remaining 67 (14.7 percent) had high activity, [28].

The having hypertension among overweight and obese respondents was found to be higher compared to normal-weight respondents as revealed the previous studies. On research conducted in Nairobi shows that a total of 370 of participants, that 111 of them were hypertensive: the most of them (56) 50.1 percent were obese. 50 (45 percent) were overweight. While the remaining 5 (4.5 percent) were have normal weight [20]. On study done in Pakistan revealed that 219 of respondents most of them (103) 47.1 percent were

overweight. 88 (40.1 percent) and 28 (12.8 percent) were normal and underweight respectively [24]. On research done in morocco revealed that 10 714 respondents almost 52 percent of participants were overweight or obese. (46 percent) of participants had a normal [29]. Globally, found that hypertension is more common in individuals who had diabetes, renal failure than in individuals without these diseases as reviewed most studies. On research conducted in uttrakhand state, India revealed that almost 13.6 percent of participants were having history of diabetes [30]. Another study conducted in India shows that 13 (7.3 percent) of diabetic participants 8 (61.5 percent) of them were hypertensive. While 166 (92.7 percent) non-diabetic respondents 66 (39.75 percent) of them were hypertensive [23]. Currently, that prevalence of hypertension in is 29.6 percent, 35.4 percent and 34.1 percent in China, Russia and Indonesia respectively showing similar to the global prevalence of 34.9 percent.

The Horn of Africa nation of Somalia likewise struggles with the problems brought on by high blood pressure. Years of conflict and instability have caused significant challenges for Somalia's healthcare system, affecting the availability and accessibility of healthcare services. Effective treatment and management of chronic illnesses like hypertension are difficult due to a lack of infrastructure, resources, and healthcare facilities. Somalia's high blood pressure is caused by a combination of hereditary, dietary, and physical factors. Although, traditional diets in Somalia are high in certain nutrients, they may also contain components that raise blood pressure, like excessive salt consumption. Furthermore, it is challenging to put widespread awareness and prevention programs into action due to the lack of resources and infrastructure in the healthcare industry. Improving the country's healthcare system, raising public awareness of hypertension and its risk factors, encouraging healthy lifestyles, and guaranteeing that people have access to high-quality, reasonably priced healthcare are all necessary components of Somalia's comprehensive strategy to combat hypertension.

A research that has been done in Somaliland showed that nearly a quarter of the adult outpatient population in Hargeisa city in Somaliland have hypertension, Hypertension correlates with low levels of education and obesity, and with smoking and Khat consumption in males, [31]. Approximately one in twelve adults (8.3 percent, 95 percent CI 7.9-8.6) had at least one chronic condition, with greater prevalence among women, urban dwellers, older individuals, and those having secondary education or higher. The most prevalent conditions were hypertension (26 percent), [32]. In contrast to these results, the prevalence of hypertension in Somali population in Mogadishu was 18 percent as a hospital based on studies done in the capital showed, [33]. A total of 127 patients that has been diagnosed causes of kidney failures shows that the most cause was hypertension (33.1 percent), followed by diabetes mellitus (27.6 percent), [34]. Some research showed a high prevalent rate of hypertension among 65 years above age groups, which depicts 51 percent were hypertensive. Another is life threatening disease as the prevalence of hypertensive crisis was 2.1 percent (128/6239) at the emergency department in Mogadishu Somali Turkish training and research hospital. 54.7 percent (70/128) met the criteria for a hypertensive emergency with elevated blood pressure 140/90 mmHg with associated target organ damage, [35].

Another research that has been in Hargeisa shows that prevalent rate of hypertension among adults was 26 percent with associated factors, like family history of hypertension (56 percent), having low level of income (45 percent), being male (60 percent), being above 45 (72 percent) years old, and having BMI $\geq 25.5 kg/m^2$ were found to be associated with high BP. Therefore there is a need especially for routine screening for hypertension for those overweight or obese, low level educational status (40 percent), [36] those with positive family history of hypertension and low level of income, having diabetic (40 percent), renal problem [53], chewing and smoking cigarette as they have an increased likelihood of developing hypertension. Having family history of hypertension, low level of income being

above 45 years of age, with low educational status and having a BMI greater than >25.5kg/m^2 were associated factors with hypertension which was 26 percent among which needs the ministry of health, education and other relevant bodies to educate modifiable risk factors, encouraging community measure regularly with their BP, [36].

Future of Hypertension in Somalia

The ongoing urbanization and modernization in Somalia may lead to shifts in lifestyle, including dietary habits and levels of physical activity. These changes could contribute to an increased prevalence of hypertension. As the population ages, the risk of hypertension typically rises. Understanding the demographic changes in Somalia and their implications for cardiovascular health is crucial for proactive healthcare planning. Somalia faces challenges in its healthcare infrastructure, including access to diagnostic tools and medications for hypertension. The inadequacies in the healthcare system could hinder effective prevention and management. The future of hypertension in Somalia is influenced by a dynamic interplay of factors, from lifestyle changes to the capacity of the healthcare system. While challenges exist, there are promising opportunities for intervention. A comprehensive approach, addressing socio-economic disparities, cultural influences, and leveraging technological advancements, is essential. Efforts should not only focus on immediate interventions but also on building sustainable healthcare infrastructure and promoting a culture of health and wellness. By understanding the emerging trends and proactively addressing challenges, Somalia has the potential to shape a healthier future for its population in the face of hypertension. The collaboration of governmental bodies, healthcare professionals, and communities is crucial in this endeavor.

The Government Strategies and Mitigation

Hypertension, commonly known as high blood pressure, poses a significant public health challenge globally, including in Somalia. Addressing there is health issue requires comprehensive strategies from the government to mitigate its impact, including: *Healthcare Infrastructure and Health Education***,** one fundamental aspect of combating hypertension is ensuring a robust healthcare infrastructure. Somalia invests in the establishment and maintenance of healthcare facilities, particularly in rural areas where access to medical services might be limited. Adequate infrastructure can facilitate early detection and management of hypertension. Public awareness campaigns are essential in promoting culture of health and wellness. Government in Somalia implements educational programs to inform the population about the risk factors associated with hypertension, the importance of regular health check-ups, and the adoption of a healthy lifestyle.

Screening and Detection Programs and Treatment and Medication Access, widespread screening programs are critical for identifying individuals with hypertension or those at risk. The government organizes routine blood pressure checks at healthcare facilities and community events to reach a broader segment of the population. Ensuring the availability and affordability of antihypertensive medications is crucial. The Somali government considers implementing public health programs to subsidize or provide medications, particularly for vulnerable populations, to enhance access to essential treatments. *Promotion of Healthy Lifestyles and Regulation of Food and Beverage Industry***,** encouraging healthy behaviors is a cornerstone in hypertension prevention. The government should initiate campaigns promoting regular exercise, balanced diets low in salt and saturated fats, and reduced tobacco and alcohol consumption. Government regulations can play a pivotal role in reducing hypertension risk factors. Somalia can consider implementing policies to regulate the food and beverage industry, encouraging the production of healthier options and restricting high-

sodium or high-fat content in processed foods. *Research and Surveillance,* investing in research to understand the specific factors contributing to hypertension in the Somali population is crucial. The government should establish surveillance systems to monitor the prevalence and trends of hypertension, enabling informed decision-making and targeted interventions.

Conclusions

There are currently no specific regulations for hypertension in Somalia. However, the Somali government has implemented regulations on salt intake in processed foods to reduce the amount of salt consumed by the population. This is because a high salt intake is linked to an increased risk of hypertension. The government is also working to improve access to healthcare services, including screening and treatment for hypertension, especially in rural areas where access to healthcare is limited. Additionally, the government has launched public awareness campaigns to educate the population about the risks of hypertension and the importance of healthy lifestyle choices.

The Somali government has launched several initiatives to address hypertension and promote healthy lifestyles. Some of these strategies include: (1) Awareness Campaigns: The government has launched public awareness campaigns to educate the population about the risks of hypertension and the importance of healthy lifestyle choices. (2) Health Education: The government has integrated health education into the school curriculum to teach children about healthy eating habits, physical activity, and the risks of hypertension. (3) Healthcare Services: The government is working to improve access to healthcare services, including screening and treatment for hypertension, especially in rural areas where access to healthcare is limited. (4) Regulation of Salt Intake: The government has implemented regulations on salt intake in processed foods to reduce the amount of salt consumed by the population. (5) Collaboration with International Organizations: The government is collaborating with international organizations such as the World Health Organization (WHO) to develop and implement strategies to address hypertension in Somalia.

Overall, the Somali government is taking steps to address hypertension, but more needs to be done to ensure that all Somalis have access to adequate healthcare services and resources to manage chronic conditions like hypertension.

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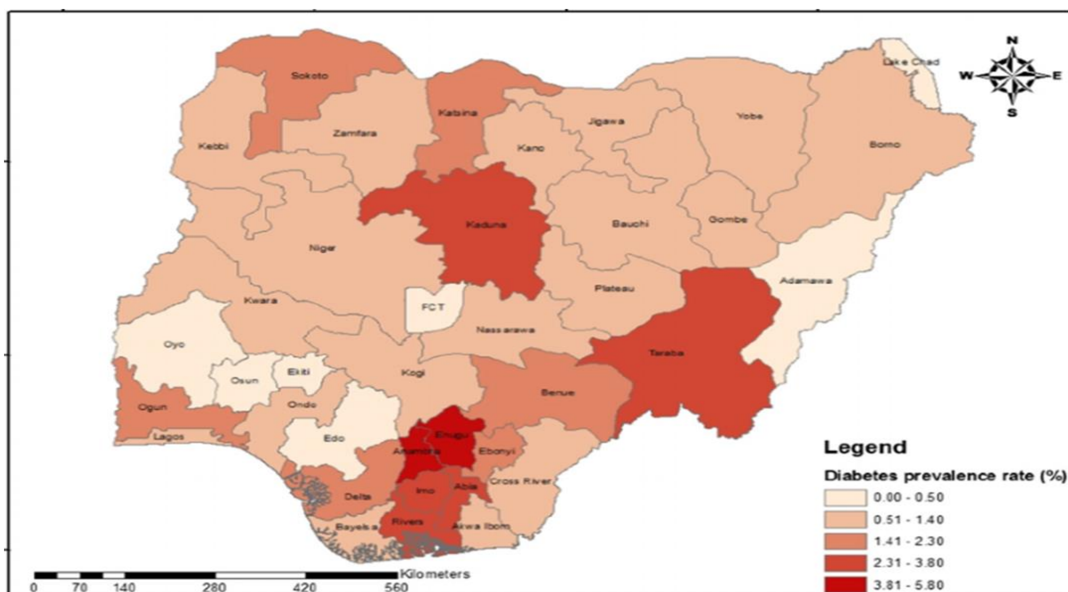
6. Diabetes in Nigeria

Solomon Nnaemeka Ogujuba
Far Eastern Federal University

Nigeria is one of the largest countries in Africa in terms of land area and the 32nd biggest in the world, and it is the most populous African nation with a population of over 219 million persons with over 250 ethnic groups and over 500 languages. The population is projected to reach 264 million by 2030 and 401 million by 2050, making it the one of the most ethnically diverse population in the world [1]. These ethnic groups are distributed across the 36 states and the federal capital territory in Nigeria with some predominating tribes in each of the six geo-political zones. The largest being the Hausa-Fulani, Yoruba and Igbo. The official language is English. The Nigerian population has assumed an upward trajectory since independence in 1960. The population of Nigeria is growing rapidly, with a high fertility rate of about 5.3 children per woman. This has resulted in a youthful population, with over 60 percent of the population under the age of 25. This high youth population presents both opportunities and challenges for the country, as it has the potential to drive economic growth and development, but also requires significant investment in education and healthcare. The urbanization rate in Nigeria is increasing rapidly, with over half of the population now living in urban areas (World Bank, 2021).

Figure 7
The distribution of diabetes in the various states and geopolitical zones in Nigeria



Source: *Osayomi T. The emergence of a diabetes pocket in Nigeria: the result of a spatial analysis. GeoJournal. 2019 Oct;84:1149-64. Online accessed in December 2023*

Life expectancy at birth, according to the world Health Organization, healthy life expectancy is the number of years a person can expect to live in full health in Nigeria. The life expectancy in Nigeria has improved over the years. This can be adduced to numerous reasons which include increases health care spending, increased access to healthcare, community sensitization and literacy among other factors. Owumi, et al in 2021, analyzed the relationship between funding the healthcare sector and life expectancy in Nigeria and opined that domestic general government health expenditure, out-of-pocket and external health expenditure had respective significant positive effects on life expectancy in Nigeria such that one dollar percent increase in the domestic general government health expenditure would lead to 6 percent increase in life expectancy at birth in Nigeria [2]. The sources of funding for healthcare in Nigeria as with other developing nations, it is faced with myriads of challenges in the health system in terms of human and material resources as well as implementation of health policies and programs. When these challenges are mitigated the life expectancy will improve enormously.

At this moment, unemployment is one of the fundamental developmental problems affecting various countries- as societal vices such as drug addiction, prostitution, increased crime rate, are associated with it. In Nigeria, the unemployment term can be used to refer to unemployed and underemployed persons as both situations lead to lack or reduced productivity based on individual potentials. The Federal government of Nigeria due to fact that rate of unemployment was rapidly increasing in Nigeria had over the years introduced various programs to either reduce unemployment or reduce the effects of unemployment in Nigeria. Such programs include establishment of the National Directorate of Employment (NDE), National Poverty Eradication Program (NAPEP), Poverty Alleviation Program (PAP), Subsidy Reinvestment and Empowerment Program (SURE-P), among others [4]. These programs have little or no effect in the raising levels of unemployment in Nigeria based on the available World Bank data and the international Labor Organization, hence the need to review each program with the view to ascertain if the aims and objectives were met and ways of improving future programs.

Diabetes in Nigeria

According to the International Diabetes Federation, about 537 million persons of ages between 20-79 years are living with diabetes around the world and it is expected to increase to 643 million by 2030. Diabetes is characterized by fasting plasma glucose level ≥7 mmol/l (126 mg/dl) or random plasma glucose level ≥11.1 mmol/L (199.8 mg/dl) or HbA1c ≥6.5 percent. In Nigeria, more than 3.6 million people live with diabetes with more 46.4 percent of this figure are undiagnosed thereby exposing them to high risk of developing complications [5, 6]. Several factors contribute to the rising prevalence of diabetes in Nigeria. Urbanization, sedentary lifestyles, and dietary changes have led to an increased prevalence of obesity well-established risk factor for type-2 diabetes [7]. Additionally, genetic predisposition and a family history of diabetes contribute to the burden of the disease in the Nigerian population [8]. The healthcare infrastructure in Nigeria faces numerous challenges in addressing the diabetes epidemic. Limited access to healthcare services, especially in rural areas, hinders early detection and management of diabetes. Furthermore, the scarcity of trained healthcare professionals and inadequate public awareness exacerbate the difficulties in effectively combating the disease [9]. Diabetes, if left unmanaged, can lead to severe complications such as cardiovascular diseases, kidney failure, and blindness. In Nigeria, where resources are often stretched thin, the economic burden of diabetes-related healthcare costs further strains the already fragile healthcare system (Ogbera, 2015). The impact extends beyond the individual to affect families, communities, and the overall productivity of the nation.

Addressing the diabetes crisis in Nigeria requires a multifaceted approach. Increased public awareness campaigns on lifestyle modifications, regular screenings, and the importance of early detection are essential components. Additionally, there is a need for investment in healthcare infrastructure, training of healthcare professionals, and the establishment of diabetes management programs [9]. However, challenges persist. Limited financial resources, inconsistent healthcare policies, and sociocultural factors can impede the successful implementation of diabetes prevention and management programs in Nigeria (Ogbera, 2015). A comprehensive strategy must be developed, considering the unique socioeconomic and cultural contexts of different regions within the country. The figure below shows a study conducted in various regions in Nigeria in 2016 showing the prevalence of diabetes mellitus. From the analysis below it was discovered that the rate of diabetes mellitus in Nigeria is higher in the south eastern part of the country.

The prevention and improved management of diabetes will require cooperation between the government and the stakeholders in the health sector. There is need for preventive programs such as enlightenment campaigns on the risk factors of diabetes. Government at all levels will need to improve health care funding. The health insurance scheme in Nigeria is poorly developed and currently, the majority of health insurance facilities do not provide coverage that allows for provision of optimum standard of care for persons living with DM. Out of pocket expenditure remains the major means of funding health care for the vast majority of Nigerians now and in the foreseeable future.

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The Roles of Government

The NCD policy environment is relatively new to Nigeria is policy span was 2014-2018, however the concern for rising profile of Non-communicable diseases (NCDs) globally date back to 1988. An expert Committee on NCDs formed in December 1988 to identify risk factors and develop a suitable program for early detection & effective control. The NCD Control Program was established in 1989 to coordinate prevention, early diagnosis, control and formulation of policies and guidelines for NCDs in Nigeria. The National survey on NCD risk factors was held between1991-1992 and the Vision was aimed at achieving a healthy Nigerian population with low burden of NCDs and enhanced quality of life for socioeconomic development. The Mission of the survey was to promote healthy lifestyle in Nigeria and provide a framework for strengthening the health care system using multi-sectoral approach for the prevention and control of NCDs.

The principles of the NCDs policy of Nigeria: Protection of the rights of individuals and communities gender equity and Universal Coverage Cultural and religious diversity/sensitivities Evidence-based information and best practices Consultative, participatory and multisectoral approach Partnership with stakeholders and development partners. The ultimate target of the program is 25 percent relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases. 30 percent relative reduction in prevalence of current tobacco use, 10 percent relative reduction in overall alcohol consumption, 10 percent relative reduction in prevalence of insufficient physical activity and 30 percent relative reduction in mean adult (aged ≥18) population intake

of salt 25 percent relative reduction in prevalence of raised blood pressure. Halt the rise in the prevalence of diabetes, obesity and sickle cell disease. 50 percent of eligible people receive drug therapy to prevent heart attacks and strokes, and counseling. 80 percent availability of basic technologies and generic essential medicines required to treat major NCDs in both public and private facilities [10].

The fact that Diabetes Mellitus is increasing in Nigeria and the world in general means that it needs to be given the appropriate attention it requires. Even if the surveillance and monitoring are excellent, more in-depth research on this illness ought to be done, particularly at the local government area level. It might reveal spatial patterns that wouldn't be evident on larger sizes. According to, disease mapping would be helpful in identifying high-risk locations and eventually develop spatial risk maps for monitoring and action. The discovery of a diabetic pocket in southeast Nigeria, where the disease is three times more common than the rest of the country, is significant and necessitates an immediate regional policy response, particularly in the lack of a national diabetes strategy. In addition to highlighting primary, secondary, and tertiary preventive interventions against DM, the policy intervention should highlight its spatial patterns.

Additional spatial study ought to be focused on offering more contextual justifications for the diabetes pocket's formation. Preventing and controlling obesity need to be a top national goal. Nigerians must be informed by health experts about the harmful effects on their health as well as, more crucially, how to prevent and manage it. The government ought to prioritize promoting health literacy among its populace in addition to raising the rate of adult literacy. Unquestionably, studying DM in Nigeria from different perspectives provided new information on the spread and how it can be nipped in the bud. Towards reducing the burden of DM in Nigeria, we suggest that there be concerted efforts by healthcare professionals and stakeholders in the health industry to put in place preventative measures, a better functioning health insurance scheme and a structured DM program.

Diabetes in Nigeria is a serious public health concern that has to be addressed urgently. Increased prevalence alongside infrastructural issues necessitates coordinated measures from the public sector, healthcare workers, and the government. Nigeria may lessen the effects of diabetes and work toward a healthy populace by addressing risk factors, enhancing healthcare access, and putting into practice efficient prevention and management techniques.

Conclusions

Diabetes is a chronic disease that affects millions of people worldwide, including Nigeria. The prevalence of diabetes in Nigeria has been on the rise in recent years due to factors such as lifestyle changes, urbanization, and poor healthcare systems. To mitigate diabetes in Nigeria, several strategies can be implemented at the individual, community, and national levels. Here are some of them: (1) Promote healthy eating habits: Encouraging people to consume a balanced diet that includes fruits, vegetables, whole grains, and lean protein can help prevent and manage diabetes. (2) Increase physical activity: Regular exercise can help improve blood sugar control, reduce the risk of developing diabetes, and improve overall health. (3) Raise awareness: Educating people about the risk factors, symptoms, and complications of diabetes can help increase awareness and encourage early detection and treatment. (4) Improve healthcare services: Access to quality healthcare services is crucial for preventing and managing diabetes. This includes regular check-ups, screening, and access to medication and other treatments. (5) Address social determinants of health: Factors such as poverty, lack of education, and poor living conditions can contribute to the development of diabetes. Addressing these social determinants of health can help prevent and manage diabetes in Nigeria.

In summary, mitigating diabetes in Nigeria requires a multi-faceted approach that involves promoting healthy lifestyles, increasing awareness, improving healthcare services, and addressing social determinants of health.

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7. Mental Health in Nigeria

Taye Olusola Bello
Agbor Central Hospital, Delta State Nigeria
Far Eastern Federal University

“The Government and people of Nigeria hereby reaffirm that health, including mental wellbeing, is the inalienable right of every Nigerian, and that mental, neurological and substance abuse (MNS) care shall be made available to all citizens within the national health system at the level of primary health care (PHC) and in communities”. (World Health Organization, 2007)

History of Mental Health in Nigeria

The first mental health hospital was established in 1904 in Calabar, the southern region of Nigeria, which was followed by the establishment of Yaba asylum in the south west region of Nigeria in 1907. Prior to this, some patients who were mentally ill were sent to Sierra Leone for care as it was an uncommon practice to seek orthodox care at the time. In 1954, the British colonial government established the “Aro” Mental Hospital to respond to the need for improved mental health care. The establishment of this hospital was an opportunity to engage the service of the first Nigerian Psychiatrists, who arrived to country in 1952 after his training as a psychiatrist in the United Kingdom. The hospital, later renamed “Aro” Neuropsychiatry hospital had played a pivotal role in the historical development of modern psychiatry hospital in Nigeria [1]. Other Federal Neuropsychiatric Hospitals established include [2]: Federal Neuropsychiatric Hospital, Calabar; Federal Neuropsychiatric Hospital, Maiduguri; Federal Neuropsychiatric Hospital, Enugu; Federal Neuropsychiatric Hospital, Kaduna; Federal Neuropsychiatric Hospital, Kware. In addition to the Federal Neuropsychiatric Hospital, some Nigeria universities teaching hospitals offers psychiatry services such as: University of Benin Teaching Hospital, Edo; University College Hospital, Ibadan, Oyo; OAU Teaching Hospital Complex, Ile-Ife, Osun; University of Port Harcourt Teaching Hospital, Rivers; University of Calabar Teaching Hospital; University of Ilorin Teaching Hospital, Kwara; University Teaching Hospital, Jos, Plateau; Ahmadu Bello University Teaching Hospital, Kaduna; Usman Dan; Fodio University Teaching Hospital, Sokoto; Aminu Kano University Teaching Hospital, Kano; University of Nsukka Teaching Hospital, Enugu.

Distribution of Mental Health in Nigeria

In 2019, a survey on mental health in Nigeria, by Africa Polling Institute (API) and EpiAFRIC revealed that there is paucity of mental health awareness amongst Nigerians. This survey further showed that most respondent are aware they battle with mental health conditions, as they associate the cause to drug abuse, possession by evil spirits and sickness of the brain. Nigeria has eight psychiatric hospitals to serve a population of over 150 million,

eight schools of psychiatric Nursing, and twelve medical schools, with all mental health services only being provided at these institutions, which are concentrated in the southern urban areas with a few in the north and no services in rural areas (Jack-Ide and Uys, 2013; WHO, 2006a) [3]. In a Large-scale community study on the prevalence of mental disorders conducted in the Yoruba speaking part of Nigeria, 4984 people were interviewed with a response rate of 79.9 percent, it was discovered that anxiety disorders were the most common but virtually no generalized anxiety or post-traumatic stress disorder were identified. In addition, only about 8 percent of persons who had severe mental disorder had received treatment in the previous one year with treatment being mostly provided by general medical practitioners [4]. In South-eastern part of Nigeria, pathways to care for Mental illness are sort in traditional, faith healers and biomedical professionals. 706 participants were selected to complete questionnaire that highlight help-seeking choices. Result showed that Higher education predicted preference for the biomedical model, while low education was associated with traditional and spiritual means [5]. Nigeria has over the years suffered from brain drain among medical practitioners of various specialties.

Statistics revealed that the Federal Neuropsychiatric Hospital Yaba, Lagos has only 33 resident doctors and 22 consultants to address the needs of more than 5,000 patients treated each year when compared with other Sub-Saharan African countries with Kenya having only about 80 psychiatrists and 30 clinical psychologists, 22 psychiatric hospitals and 36 psychiatric wards in South Africa, and Ghana has three psychiatric hospitals and about 20 psychiatrists.[6]. Another study compared how mental health services are organized and delivered at various levels of care in South Africa and Nigeria was under six domains, which are: policy and legislative framework; mental health services; mental health in primary care; human resources; public information and links with other sectors; and monitoring and research. For policy and legislative framework; South Africa has no official mental health policy, as its Mental Health Care Acts (MHCA 2002), drives its mental health services and programs, while Nigeria has a draft of Mental Health Bill at the National Assembly, which is yet to be passed into law.

Furthermore, In Nigeria is limited and it is therefore difficult to identify areas of need, to make informed decisions about policy direction, and to monitor progress while South Africa has maneuver ways to use their general health workers in supportive roles at community clinics, usually with substantial support from mental health specialists for the purpose of reducing the gap in accessing mental health service. Thirdly, South-Africa provides psychiatric care at primary health care centers, in contrast to Nigeria where psychiatric care is only provided at a few large mental hospitals in big cities. More also, in the aspect of human resources, mental health professionals in South Africa work in both private and public sectors, as opposed to Nigeria with an estimate of 95 percent psychiatrically trained professionals working in tertiary institutions and the other 5 percent work in non-mental health care facilities. Another domain is the public information and links with other sectors. This involves the provision of information for public education on mental health and disorders, and the level of public sectors participation in mental health promotional activities and programs. South Africa has a coordinating body to oversee public education and awareness campaigns on mental health and mental disorders (WHO-AIMS, 2007), while in Nigeria, there are very few public education and awareness campaigns; government agencies and professional organization involvement in mental health awareness and promotion campaigns of the public are poor, and the national human rights review commission established in 1995 is non-functional (WHOAIMS, 2006). Lastly, neither country has formerly defined minimum data set of items to be collected by mental health facilities. Hence there is dearth of resources on health systems research focusing on public health care issues, [7].

According to WHO, Nigeria is the seventh-largest country in the world, ranks 15th in the world in the frequency of suicide, and has Africa's highest caseload of depression [16]. Mental Health is the most neglected area of health in Nigeria with a significant number of people having mental health challenges. The challenges of mental health in Nigeria are multi-faceted [17]. The World Health Organization AIMS report on mental health services in Nigeria indicates that mental health services are insufficient with numerous challenges. These challenges include: limited access to mental health services, poor health financing, dearth of psychiatrist and allied health providers [18]. The incidence of Schizophrenia in the United States of America is 10-58 new cases per 100,000 populations with men having the highest incidence rates than women. The incidence of Schizophrenia has been reported to vary with race and ethnicity and the prevalence of Schizophrenia was said to be lower in developing countries compared to developed countries but a better outcome of Schizophrenia has been recorded in developed countries and the incidence of Schizophrenia in urban areas has been found to be higher than rural areas [19].

The Nigerian population estimated to be living with schizophrenia is about 1.86 million people and the national cost of schizophrenia estimated as $609 million. Hence, the cost of schizophrenia is relatively high. [20]. Anxiety has been estimated to be the 6th leading cause of disability worldwide, while Depression is the second leading cause of burden of diseases in 2020. The World Mental Health Survey (WMHS) data for Nigeria had reported extremely low prevalence for major depressive disorder (3.1 percent lifetime and 1.1 percent 12-months) and anxiety disorders (5.7 percent lifetime and 4.1 percent 12-months) leading to exclusion of Nigerian data from various cross national WHMS epidemiology reports [21]. A cross-sectional descriptive survey carried out at the department of Psychiatry and 1 Family Medicine, Ekiti State University Teaching Hospital, Ado-Ekiti, Ekiti, Nigeria, Statistical analysis revealed significant association between depression and age, gender, marital status, and clinical diagnoses ($P < 0.05$), with none of the patients having depression as primary diagnosis [22]. In an article that examines the links between adverse events, depression, and decision-making in Nigeria. First, exposure to conflict has the largest and strongest relationship with depression, associated with a 21-26 percentage point increase in the probability of depressive symptomatology. Second, depression is associated with lower labor force participation, child educational investment, and annual per capita income, holding constant covariates such as exposure to adverse events [23]. Findings from a study on Interactions both between Socioeconomic Status and Mental Health Outcomes in the Nigerian Context amid COVID-19 Pandemic had reported the standard (middle) income socioeconomic class having the highest prevalence of depression during the COVID-19 pandemic. The reason could be associated to the fact that the standard (middle) income socioeconomic class in Nigeria is the largest socioeconomic group, occupying the wide inequality gap between the haves and the haves not. These individuals are mostly business owners (SMEs) and major salary earners from the private and government establishments; therefore, they are the most hit by the closure of businesses and lockdown in the country [24]. In contrast, another study suggested that suggested that people with lower socioeconomic status have a higher tendency to have mental health issues; as their socioeconomic status has been associated with death and high illness rates in several studies [25].

Mental Health Action Plan 2013–2030

The vision of the action plan is a world in which mental health is valued, promoted and protected. The overall goal of this plan is to promote mental well-being, prevent mental disorders, provide care, enhance recovery, promote human rights, and reduce the mortality, morbidity and disability for persons with mental disorders. In May 2012, the Sixty-fifth World Health Assembly adopted resolution WHA65.4 on the global burden of mental

disorder and the need for a comprehensive, coordinated response from health and social sectors at the country level. It requested the Director-General, inter alia, to develop a comprehensive mental health action plan, in consultation with Member States covering services, policies, legislation, plans, strategies and programs. The action plan has the following objectives: (1) to strengthen effective leadership and governance for mental health; (2) to provide comprehensive, integrated and responsive mental health and social care services in community-based settings; (3) to implement strategies for promotion and prevention in mental health; (4) to strengthen information systems, evidence and research for mental health.

The action plan relies on six cross-cutting principles and approaches: Universal health coverage; Human rights; Evidence-based practice; Life-course approach. Policies, plans and services for mental health need to take account of health and social needs at all stages of the life-course; Multisectoral approach; Empowerment of persons with mental disorders and psychosocial disabilities. There is no blueprint action plan that fits all countries. Therefore, actions proposed for Member States are to be considered and adapted, as appropriate, to national priorities and specific national circumstances in order to accomplish the objectives.

Objective-1, to strengthen effective leadership and governance for mental health, namely: (1) *Proposed actions for Member States* are policy and law; resource planning and stakeholder collaboration; strengthening and empowerment of people with mental disorders and psychosocial disabilities and their organizations. (2) *Proposed actions for international and national partners are* mainstream mental health interventions into health, poverty reduction, development policies, strategies and interventions; include people with mental disorders as a vulnerable and marginalized group requiring prioritized attention and engagement within development and poverty-reduction strategies; Explicitly include mental health within general and priority health policies, plans and research agenda, including non-communicable diseases, HIV/AIDS, women’s health, child and adolescent health, as well as through horizontal programs and partnerships.

Objective-2, to provide comprehensive, integrated and responsive mental health and social care services in community-based settings. (1) *Proposed actions for Member States* are Service reorganization and expanded coverage; integrated and responsive care; mental health in humanitarian emergencies (including isolated, repeated or continuing conflict, violence and disasters; Resource planning. (2) *Proposed actions for international and national partners, namely:* Use funds received for direct service delivery to provide community-based mental health care rather than institutional care; Assist the training of health workers in skills to identify mental disorders and provide evidence-based and culturally appropriate interventions to promote the recovery of people with mental disorders; Support coordinated efforts to implement mental health programs during and after humanitarian emergency situations, including the training and capacity-building of health and social service workers.

Objective 3, to implement strategies for promotion and prevention in mental health. (1) *Proposed actions for Member States* are mental health promotion and prevention*;* Suicide prevention. (2) *Proposed actions for international and national partners* are Engage all stakeholders in advocacy to raise awareness of the magnitude of burden of disease associated with mental disorders and the availability of effective intervention strategies for the promotion of mental health, prevention of mental disorders and treatment, care and recovery of persons with mental disorders; Advocate the rights of persons with mental disorders and psychosocial disabilities to receive government disability benefits, gain access to housing and livelihood program, and, more broadly, to participate in work and community life and civic affairs; Ensure that people with mental disorders and psychosocial disabilities are included in activities of the wider disability community, for example, when advocating for human rights and in processes for reporting on the implementation of the Convention on the Rights of

Persons with Disabilities and other international and regional human rights conventions; Introduce actions to combat stigmatization, discrimination and other human rights violations towards people with mental disorders and psychosocial disabilities; Be partners in the development and implementation of all relevant program for mental health promotion and prevention of mental disorders.

Objective 4, to strengthen information systems, evidence and research for mental health. (1) *Proposed actions for Member States* are Information systems. Integrate mental health into the routine health information system and identify, collate, routinely report and use core mental health data disaggregated by sex and age (including data on completed and attempted suicides) in order to improve mental health service delivery, promotion and prevention strategies and to provide data for the Global Mental Health Observatory (as a part of WHO's Global Health Observatory); Evidence and research. Improve research capacity and academic collaboration on national priorities for research in mental health, particularly operational research with direct relevance to service development and implementation. (2) *Proposed actions for international and national partners* are Provide support to Member States to set up surveillance/information systems that: capture core indicators on mental health, health and social services for persons with mental disorders; enable an assessment of change over time; and provide an understanding of the social determinants of mental health problems; Support research aimed at filling the gaps in knowledge about mental health, including the delivery of health and social services for persons with mental disorders and psychosocial disabilities.

Mental Health Policies in Nigeria

The WHO defines mental health policy as an official statement that provides overall direction for mental health services (World Health Organization, 2007). There are very few studies that focused on mental health governance in both low- and middle-income countries. The mental health policy of Nigeria is based on the principles of social justice and equity.

The government formulated The Mental, neurological and substance abuse (MNS). This MNS policy is in consonance with and is complementary to the National Health Policy for the Federal Republic of Nigeria. This policy shall be based on the national philosophy of social justice and equity. Individuals with mental, neurological and substance use (MNS) disorders shall have the same rights to treatment and support as those with physical illness and shall be treated in health facilities as close as possible to their own community. No person shall suffer discrimination that compromises their ability to fully participate in community life on account of mental or neurological illness. At all levels of health care, MNS services shall as far as possible be integrated with general health services. In this way the preventive, therapeutic, rehabilitative and social re-integration aspects of MNS care shall as much as possible be available to all Nigerians.

To achieve a comprehensive coverage of the population, delivery of MNS care shall be firmly established in the PHC setting and any other setting considered appropriate. The services shall be promoted by all health care personnel with active participation of members of the community. Appropriate training in MNS and psychosocial skills and positive attitude towards the mentally ill shall be provided to all health care personnel. This shall be facilitated by the provision of adequate teaching aids. Intersectoral collaboration shall be fostered among those involved in the overall national development of quality of life. These include Social Development, Agriculture, Education, Science and Technology, Housing, Environmental Protection, Communication and others. The attainment of the Millennium Development Goals (MDGs) depends to a large extent on the MNS and mental capita of the populace. Collaboration with the office of the Special Adviser to the President on MDGs will be a particularly crucial one. Healthy attitudes and positive socio-cultural attributes in the population, particularly among the youths, shall be promoted to prevent aberrant behavior

with adverse consequences for MNS, (Adapted from National Policy for Mental Health Services Delivery, August 2013).

Implementation and Evaluation

The implementation of this policy will require cooperation between the Federal, State and Local governments of the Federation. Saraceno, et al, (2007) attribute what they call the "ill fated" integration of mental health into Nigeria's primary care system to three overarching issues: inadequate training and supervision of primary care workers, insufficient funding and lack of political will [34]. The lack of formal networks among various categories of evidence-based services in Nigeria has limited the effectiveness of early intervention programs for substance use disorders [35]. The vast majority of existing implementation research focuses on early-stage implementation outcomes, such as acceptability, appropriateness, and feasibility, with a paucity of studies focusing on later-stage outcomes such as cost, penetration, and sustainability [36]. A study conducted on the implementation of Mental Health Policies and Practices in Schools revealed that the use of certified health educators and health-related supports play a critical role in fostering positive mental health outcome and should be strongly considered [37]. Another study indicated that to accelerate the implementation of evidence-based mental healthcare, the field must meet two pressing needs: a body of research and theory informing effective implementation processes, and a research workforce capable of conducting rigorous and relevant implementation studies [38].

Julian Eaton et al, carried out research in a partnership between University of Ibadan and CBM International on the integration of mental health into Primary Health Care as Cross River state and Kaduna were chosen to represent distinct cultural, economic, geographical and political realities which has important implications in Nigeria's national unity and broad representation. The study concluded that community engagement, through both the existing means used by community mobilization officers in Primary Health Care as this could serve as one of the means of improving the historically extremely low follow-up rates of patients during initial presentation. [39]. The National Assembly passed the National Mental Health Bill which has replaced the outdated and inhumane Lunacy Act of 1958. Nigeria society must begin with Leadership Orientation and attitude change towards the need to finance and fund mental health institutions in training and research. More also, proper assessment, treatment, management and subsequent follow-up evaluation could aid better care for most mental health related conditions.

Conclusions

Mental health is a growing concern in Nigeria, with limited resources and inadequate attention being paid to the issue. Mental health problems are often stigmatized in Nigeria, and people with mental illnesses may be discriminated against or ostracized by their communities. According to the World Health Organization (WHO), mental health disorders are responsible for 12% of the total burden of disease in Nigeria. The most common mental health disorders in Nigeria include depression, anxiety, and substance abuse. There is a shortage of mental health professionals and facilities in Nigeria, with only one psychiatrist for every 1.6 million people. Many people with mental health problems do not receive adequate treatment due to limited access to care, high costs, and a lack of awareness about mental health issues. The Nigerian government has taken some steps to address mental health issues, including the establishment of the Federal Neuropsychiatric Hospital in Lagos and the development of a National Mental Health Policy. However, more needs to be done to increase access to care and reduce stigma surrounding mental health in Nigeria.

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8. Conclusions What does the World Need to know?

Martynova Alina V
Siti Rahayu

Non-Communicable Diseases, World Health Organization (WHO, 2023) explained that non-communicable diseases (NCDs) killed 41 million people each year, equivalent to 74 percent of all deaths globally. Each year, more than 15 million people die from a NCD between the ages of 30 and 69 years; 85 percent of these *"premature"* deaths occur in low- and middle-income countries. Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.3 million), respiratory diseases (4.1 million), and diabetes (1.5 million). These four groups of diseases account for over 80 percent of all premature NCD deaths. Every year 703.000 people take their own life and there are many more people who attempt suicide. Suicide occurs throughout the lifespan and was the fourth leading cause of death among 15-29 year-olds globally in 2019. Suicide does not just occur in high-income countries, but is a global phenomenon in all regions of the world. In fact, over 77 percent of global suicides occurred in low- and middle-income countries.

Mental health is growing concern in both China and Nigeria, with limited resources and stigma hindering access to proper treatment and care. **Cancer** is a significant health issue in both Indonesia and Sierra Leone, with risk factors such as tobacco use, unhealthy diets, physical inactivity, and exposure to environmental pollutants contributing to the high incidence rates. **Diabetes** is a major public health concern in both Nigeria and Indonesia, with lifestyle changes and poor nutrition being major risk factors for the disease. **Hypertension** is growing problem in Somalia, with limited access to healthcare and poor awareness of the condition contributing to it is increasing prevalence.

These countries (China, Indonesia, Nigeria, Sierra Leone and Somalia) face significant challenges in addressing these non-communicable diseases and reducing their impact on their populations. Efforts to promote healthy lifestyle, increase access to screening and treatment services, and improve public awareness are crucial in tackling these issues. To achieve the goal of eliminate NCDs in the world, we recommend a comprehensive approach that includes the following strategies: (1) Implementing policies to reduce risk factors, (2) strengthening health system, (3) improving surveillance and monitoring, (4) enhancing public awareness, (5) promoting research and development, (6) using Artificial Intelligence or digital health technology.

In conclusion, non-communicable diseases remain major cause of death of Asia and Africa population. In accepted Global Action Plan for the Prevention of NCDs and combating them in 2013-2020 values are presents as nine global goals, the achievement of which will reduce the projected total mortality from major NCDs (cardiovascular diseases, malignant neoplasms, chronic diseases respiratory organs and diabetes mellitus) by 25 percent by 2025. Among these goals: a 10 percent reduction in hazardous alcohol consumption, a 10 percent reduction in the prevalence of insufficient physical activity, by 30 percent of average salt/sodium intake and by 30 percent of adult tobacco consumption. Goals and indicators

presented in the Global Action Plan, as well as indicators for reducing mortality from NCDs have average indicators for all member countries WHO.

Regarding the “comprehensive review and assessment of progress, achieved in the field of prevention of non-infectious diseases and their control" and in fulfilling the national commitments made by WHO Members for the period 2015-2016, taking into account national development goals up to 2025, there should be priority focus in 4 areas: management, prevention and risk factor reduction, public health and epidemiological surveillance. When solving these priority tasks, there should be attachment of special importance to overcoming inequality and ensuring equal access to opportunities for different groups of the population lead a healthy lifestyle and receive quality medical care in a timely manner and together with the professional medical community, national clinical recommendations for the diagnosis, treatment and follow-up of patients with major NCDs, which make it possible to treat such patients according to the same requirements and approaches, regardless of their place of residence. Implementation of the Global Plan and achievement of country or regional mortality reduction targets from NCDs by 2025 for each country and WHO region there will be depend on many conditions, including: initial the situation with morbidity and mortality from NCDs, by 2025, every country and WHO region will have depend on many conditions, including: initial the situation with morbidity and mortality from NCDs, structure and efficiency of health services, availability and accessibility to effective preventive, including educational, diagnostic and therapeutic technologies, sufficiency of human and financial resources, availability of relevant legislative, regulatory, strategic documents and programs, ensuring their implementation and control and etc. Creating such conditions and using them effectively will require WHO personnel experts and professional support.

It must be recognized that implementation of the provisions presented in the Global Plan of Action for the Prevention of Non-communicable Diseases and combating them in 2013-2020 in terms of preventive measures (legislative and regulatory) will allow to preventive the development of NCDs to a greater extent. To reduce mortality from NCDs, parallel (simultaneous) active actions by health services are needed on public awareness, early diagnosis and effective treatment of patients. According to the latest tendencies, creating such conditions and using them effectively will require WHO personnel expert and professional support. However, taking into account the remaining time limit for the intended reducing mortality from NCDs, parallel (simultaneous) active actions by health services are needed on public awareness, early diagnosis and effective treatment of patients.

Universal approach for decreasing of NCD morbidity in these countries should include already approved solutions and among of them are further improvement and development of preventive measures on reducing burdens of NCDs by focusing on them on priority in national development plans and international agenda in a such areas as: formation of a healthy life style of different groups of population based on broad organizing job of ministries of health of these countries; improvement of primary health care, taking into account the priority of large scale and personalized methods with the development of telemedicine and mobile forms of providing medical services; improvement of emergency and emergency service medical care; further development of specialized, including high-tech medical care.

Non–Communicable Diseases (NCDs) in Asia and Africa

Study case in Indonesia, China, Sierra Leone, Nigeria and Somalia. What does the world need to know?

Despite the rapid economic growth, stable politics, and industrialization in Asia and Africa, global health crises have shown that a deeper understanding of the distribution, strategy, health policy, and technology is needed to effectively eliminate non-communicable diseases in these regions.This timely and authoritative monograph provides a critical analysis of non-communicable diseases in Asia and Africa. The monograph includes case studies through literature reviews and observations conducted in several countries, including Indonesia, China, Sierra Leone, Nigeria, and Somalia. The themes covered in the monograph include cancer, diabetes, mental health, and hypertension.This comprehensive and well-written monograph will be of great interest to scholars involved in public health, global health policy, and international health. It will also be an enlightening read for policymakers working in this important area.

~ Agus Suprapto
The expert staff Minister of Health,
Republic of Indonesia

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