



## Media Role on the Burden of Non-Communicable Diseases in Nigeria

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### Abstract

One way of keeping in touch with our contemporary world is through the media. Communication is a vital component of our lives and existence and no society has been known to exist without it. However, due to rapid urbanization, westernization of lifestyles and diets, and other factors, the burden of Non-Communicable Diseases (NCDs) is rising globally, with developing countries bearing the brunt of the increase. The primary cause of illness and mortality worldwide is now Non-Communicable Diseases (NCDs). Out of 56 million fatalities worldwide in 2012, 38 million were due to NCDs, and 28 million of these deaths happened in low- and middle-income nations. It is predicted that by 2030, the number of these deaths will rise from 38 million in 2012 to 52 million, with a significant increase occurring in low- and middle-income nations, which already have a significant burden of communicable diseases (a double burden of disease). The finding of the study also revealed that there are three main key factors of NCDs and these include age, diet, and economic context. The study discovers that some of the challenges in fighting non-communicable diseases in Nigeria include lack of awareness and education, limited healthcare infrastructure, healthcare funding, medical equipment, lifestyle and behavioral factors, cultural practices, limited diagnostic tools and treatment, etc. The findings of the study revealed that the problem of non-communicable diseases in Nigeria can be mitigated through awareness and education, healthcare infrastructure strengthening, affordability and accessibility, preventive healthcare, community engagement, data collection and research, regulatory measures, empowerment and support, etc. The study recommends that the Nigerian government should partner with international organizations, Non-Governmental Organizations (NGOs), private sectors, and academia to launch nationwide awareness campaigns in order to educate the nation about the risk factors, symptoms, and preventive measures related to non-communicable diseases.

**Keywords:** Healthcare; Non-communicable diseases; Epidemiologic transition; Cancer; Diabetes

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### Introduction

The media are often in liberal theory referred to as the “Fourth Estate of the Realm” and the “watchdog of the society”, meaning that the media exist as an organ of information sourcing and dissemination, educational promotion, surveillance, social enlightenment and mobilization [1]. These functions set the media apart as an important link/factor in the relationship between the government and the governed and make them a sine qua non to societal growth and development. The understanding of the place of communication becomes more imperative in the 21<sup>st</sup> century for obvious reasons. The 21<sup>st</sup> Century is the Age of Information and Communication Technologies (ICTs) powered by the developments in computer technology [2]. The Age of ICTs has taken science and technology to another level. Nations, societies, people and even businesses are now run with the help of technology; those that are not technology complaint lose their touch, influence and essence. Most of these developments are made possible through the instrumentality of the media of communication [3].

Due to rapid urbanization, westernization of lifestyles and diets, and other factors, the burden of Non-Communicable Diseases (NCDs) is rising globally, with developing countries bearing the brunt of this increase [4]. Low- and Middle-Income Countries (LMICs) are expected to bear a

disproportionate share of the burden of NCDs compared to developed countries due to their relatively weak and unprepared health systems and limited healthcare financing. Africa is predicted to have the largest increase in NCD deaths worldwide over the next ten years due to the epidemiologic transition of disease [5]. More than 75 percent of deaths in the majority of Sub-Saharan African nations are currently attributable to NCDs, and this number will rise if immediate, evidence-based measures to halt the trend are not effectively put into place. Moreover, there are glaring gaps in the data supporting the effective application of NCD therapies in Sub-Saharan African primary healthcare settings. Most developing nations, including Nigeria, frequently lack the models and methodologies necessary to adequately inform the design of interventions that address the needs of communities and individuals [6].

In industrialized nations, non-infectious illnesses or the "diseases of modern life" rose to the top as the main causes of morbidity and death during the 20<sup>th</sup> century. For instance, Kung et al. [7] listed the following fifteen disease conditions as the top causes of death in the United States in 2005: heart disease, malignant neoplasms, stroke, cerebrovascular diseases, diabetes mellitus, Alzheimer's disease, influenza, pneumonia, nephrosis (kidney disease), septicemia, intentional self-harm (suicide), cirrhosis, chronic liver disease, essential (primary) hypertension, Parkinson's disease, and assault (homicide).

According to available data, 82% of deaths from NCDs are attributable to four main disease groups: Diabetes mellitus, cancer, respiratory disorders, and cardiovascular illnesses [8]. In addition to four metabolic risk factors (high blood pressure, overweight and obesity, hyperglycemia, and hyperlipidemia), these diseases share four behavioral risk factors (tobacco use, excessive alcohol use, bad diet, and physical inactivity). In order to guide the implementation of suitable public health initiatives, the World Health Organization (WHO) has advised surveillance of Non-Communicable Diseases (NCDs) and their risk factors [9].

The effects of NCDs are severe and obvious in Nigeria. In 2015, NCDs claimed the lives of over 5 million Nigerians, with diabetes alone which accounted for roughly 52% of deaths. Additionally, the financial burden of NCDs in Nigeria in 2005 was estimated to be \$400 million due to the premature deaths brought on by NCDs. Currently, 4 million people in Nigeria have diabetes, 8 million have hypertension, and 100,000 new cases of cancer are detected abroad yearly [10]. In addition, ten thousand Nigerians lose their lives to injuries sustained in automobile accidents every year. These significant losses impact not just the individual but also the family, the workforce, and the millions of people who live in poverty [11]. As a result, a vicious cycle is created for them. The relationship between NCDs and globalization, urbanization, demography, changes in lifestyle, sociocultural variables, poverty, and inadequate nutrition for mothers, fetuses, and infants has been empirically established by researchers [12]. Within this context, this paper seeks to evaluate the burden of non-communicable diseases in Nigeria.

## The Basic Tools of Enquiry

1. What are the major factors responsible for non-communicable diseases in Nigeria?
2. What are the challenges in fighting non-communicable diseases in Nigeria?
3. How can the problem of non-communicable diseases be

mitigated in Nigeria?

## Literature Review

The primary cause of illness and mortality worldwide is now Non-Communicable Diseases (NCDs). Out of 56 million fatalities worldwide in 2012, 38 million were due to NCDs, and 28 million of these deaths happened in low- and middle-income nations. It is predicted that by 2030, the number of these deaths will rise from 38 million in 2012 to 52 million, with a significant increase occurring in low- and middle-income nations, which already have a significant burden of communicable diseases (a double burden of disease). For instance, the NCD death rate in the African region was 28 million in 2012 [8]. An epidemiological transition is currently taking place in the majority of African nations, wherein the pattern of primarily infectious diseases is giving way to one of chronic, non-communicable diseases [13].

This is due to the fact that they frequently lack access to the services and information needed to prevent and treat NCDs. The limited health resources continued to be directed toward lessening the already crippling load of communicable diseases and avoidable causes of death for both mothers and infants. Therefore, it is not hyperbole to characterize the state of affairs in developing nations as an imminent catastrophe—a catastrophe for society, for health, and most importantly, for national economies. The widespread misconception that NCDs primarily affect people with high incomes and affluence has been debunked by the growing attention in developing countries. But while developing nations have a double burden, developed and high-income nations are also seeing a shift in the trend of health from communicable to non-communicable diseases [14]. Nevertheless, wealthy nations are also partaking of the problem as developing nations [15].

Development is known to suffer a double blow from chronic non-communicable diseases. According to WHO [16], they force millions of individuals below the poverty line as well as causing the country billions of dollars in lost national income. According to estimates, heart disease, stroke, and diabetes mellitus cost China, India, and the United Kingdom, respectively, 558, 237, and 33 billion dollars in 2007 [17]. Moreover, the US spends 750 billion dollars a year on diabetes mellitus and cardiovascular disease, and 87% of all US deaths are attributable to NCDs [16]. Globally, respiratory disorders (4.2 million), diabetes (1.3 million), cancer (7.6 million), and cardiovascular disease (17 million individuals per year) account for the majority of deaths. 80% of deaths from disease-related causes are connected to this cluster of diseases [18].

The majority of African nations have not carried out risk factor studies in order to determine the country-based line prevalence rates and precisely measure the scope of the issue. The national prevalence status is estimated using information from health management information systems [19]. Nonetheless, according to Ekpeyoung et al. [14], the distribution of the most NCD-related deaths worldwide by WHO region in 2008 revealed that chronic obstructive pulmonary disorders (0.1 million), cancers (0.4 million), respiratory disorders (0.3 million), diabetes mellitus (0.2 million), and cardiovascular disease (1.3 million) account for the majority of deaths.

On the other hand, six of the top 10 diseases with the most Disability-Adjusted Life Years (DALYs) in 2019 were Non-Communicable Diseases (NCDs). From 1990 to 2019, these NCDs increased on the list of the most common causes of DALYs across all

age groups. In the 25 to 49 age group, which is the most economically active, NCDs accounted for seven of the top 10 causes of death by accident in 2019. Twenty-five percent of all DALYs for this age group in that year were caused by these seven diseases alone. Most remarkably, 45 percent of DALYs for the 50 to 74 age group in 2019 were attributable to Noncommunicable Diseases (NCDs), accounting for the first nine primary causes of DALYs [20].

In the Caribbean, NCDs accounted for 57% of all fatalities in Haiti and 83% in Barbados [21]. Common risk factors for Noncommunicable Diseases (NCDs) include obesity, physical inactivity, tobacco use, and alcohol use. These rates are high in several nations in the subregion. The Heads of Government in the Caribbean have recognized this as "the greatest threat to the health of future generations." [22]. Given the aging of the population and the potential for poor adult health due to uncontrolled childhood obesity, the disease burden currently posed by NCDs and the increased burden that could arise if these diseases are not prevented or effectively controlled will have disastrous consequences for healthcare costs and labor productivity, and consequently the sustainability of Caribbean economies [23].

Each year, tobacco use for both the direct tobacco use and secondhand smoke causes the deaths of almost 6 million individuals. This figure was expected to rise to 7.5 million by 2020 [24]. According to WHO [16], smoking is thought to be the cause of roughly 10% of cardiovascular illness, 42% of chronic respiratory disorders, and 71% of lung cancer. Additionally, 3.2 million deaths annually are attributed to inadequate physical activity. Individuals who do not exercise sufficiently run a 20% to 30% higher chance of dying young. Frequent exercise lowers the risk of depression, diabetes, breast and colon cancers, and cardiovascular illnesses like high blood pressure. The highest rates of insufficient physical activity are found in high-income nations, but certain middle-income nations are also experiencing very high levels of physical inactivity, particularly among women [16]. Approximately 2.5 million deaths a year (or 3.8% of all deaths worldwide) are directly related to alcohol consumption.

Likewise, bad eating habits and obesity cause over 2.8 million deaths annually; the risk of diabetes, heart disease, and strokes rises progressively as Body Mass Index (BMI) rises [16]. It is possible to avoid 40% of cancer cases and 8% of heart disease, strokes, and type 2 diabetes mellitus. Stopping the trend requires swift, decisive action and attention. The primary risk factor should be identified with greater effort, as it may differ in importance from nation to nation and even within a nation depending on the sociodemographic traits and cultural practices that influence a particular population's way of life. The distribution of future diseases can be described by population assessment of risk variables, and population distribution of these risk factors can be shifted using knowledge of risk factors [25].

## Theoretical Framework

In order to comprehend and support behavior change in individuals, psychologists Prochaska and DiClemente created the Transtheoretical Model (TTM), commonly referred to as the Stages of Change Model, in the late 1970s and early 1980s [26]. The process that people go through when they change or take up new behaviors is outlined in this model. As suggested by its name, the Transtheoretical Model of Behavior Change (TTM) integrates concepts and processes of change from various key theories of intervention through a series of stages. This model was developed through a comparative study of

popular theories based on behavior modification and psychotherapy. The authors concluded that systematic integration was necessary due to the discovery of over 300 psychotherapy ideas [27].

## Core Constructs

The TTM is centered around six stages of change, which have been the focus of the TTM. According to studies on behavior modification, people go through several stages when making changes to their behavior. The amount of time someone can spend at each stage varies, but so do the tasks necessary to get to the next level. At every level, specific change management concepts and procedures are most effective in lowering resistance, promoting advancement, and averting relapse. These consist of processes of transformation, self-efficacy, and decisional balance. A percentage of a population at risk—typically less than 20% is ready to act at any one moment. Action-oriented advice, therefore, is detrimental to people in their early phases. TTM-based advice appeals to the majority of people rather than just those who are prepared to take action, which increases engagement in the change process [28].

## Stages of Change

One temporal dimension is represented by the stage construct. Change suggests long-term occurrences of events. Remarkably, no central idea reflecting time was found in any of the top theories of therapy. The TTM views behavior change as a process that takes place over time and involves moving through several stages as opposed to the traditional interpretation of behavior change as an event, such as stopping drinking, smoking, or overeating. The phases include the following:

**Pre-contemplation:** Pre-contemplation stage individuals do not plan to act in the near future, which is typically defined as the next six months. Pre-contemplation might result from a person's lack of knowledge or awareness of the effects of their actions. Demoralization regarding one's capacity for change might result from numerous failed attempts at transformation. To put it another way, people who are poorly informed or ignorant also tend not to read, discuss, or think about the high-risk behaviors they engage in. According to other beliefs, they are frequently described as unmotivated, reluctant, or unprepared for health promotion initiatives. As Snow et al. [29] pointed out, typical population health promotion initiatives were really unprepared for these people and unmotivated to address their needs.

**Contemplation:** People who plan to make changes during the next six months are in the contemplation stage. They are more conscious of the benefits of altering, but they are also more cognizant of the drawbacks. The benefits and drawbacks of altering were comparable in a meta-analysis spanning 48 health risk behaviors. People may have extreme ambivalence as a result of weighing the advantages and disadvantages of altering, which may keep them in this stage for extended lengths of time. This condition is frequently described as behavioral procrastination or persistent pondering. Conventional action-oriented programs that require participants to take immediate action are not appropriate for those who are in the contemplative stage of life [27].

**Preparation:** The stage of preparation, which is typically defined as the following month, is when people plan to act. Usually, they've already done something noteworthy during the last 12 months [30]. These people have a strategy, which may include enrolling in a health

education program, speaking with a counselor, visiting a doctor, purchasing a self-help book, or depending on a self-improvement strategy. It is these individuals that ought to be sought out for programs that focus on taking action.

**Action:** The stage in which individuals have, throughout the previous six months, made particular, overt changes to their lifestyles is known as action. Since action can be observed, it is common to equate behavior change as a whole with action. Action is just one of the six stages in the TTM, though. In this approach, not all behavioral changes are considered actions. Most programs require users to meet a standard that experts and scientists concur is enough to lower the risk of illness. Reducing cigarette consumption or switching to low-tar and low-nicotine cigarettes, for instance, were once regarded as appropriate steps toward quitting smoking [31]. All agree, however, that complete abstinence is the only acceptable course of action.

**Maintenance:** Those who are in the maintenance stage have made clear, overt changes to their lifestyles and are attempting to avoid relapsing; yet, they do not implement change processes as regularly as those who are in action. Those who are in the maintenance stage experience less temptation to relapse and increase in self-assurance in their ability to sustain their adjustments. Researchers have calculated that maintenance lasts anywhere from six months to around five years based on data on self-efficacy. While this estimate may seem somewhat pessimistic, longitudinal data in the 1990 Surgeon general's report support this temporal estimate. After 12 months of continuous abstinence, 43% of individuals returned to regular smoking. It took five years of consistent abstinence for the chance of relapse to decrease to 7% [32].

**Termination:** Termination is the stage in which individuals are not tempted; they have 100% self-efficacy. Whether they are stressed, depressed, anxious, bored, lonely, or furious, people in this stage are certain they won't revert to bad coping mechanisms. They act as though their new conduct has become automatic, or as though they never developed the habit in the first place. Examples are adults who have trained their system to automatically buckle their seatbelts or take their anti-hypertensive medication at the same time and location every day. In a study of ex-alcohol and tobacco users, researchers discovered that fewer than 20% of each group had attained the goals of complete self-efficacy and zero temptation [29]. It's possible that the 100% self-efficacy criterion is too rigid, or that this stage is the perfect objective for community health initiatives. But in other areas, including weight control, regular condom usage, and exercise, a lifetime of maintenance may be the realistic objective. Because termination happens long after interventions stop and may not be a practical reality for communities, it has not received as much attention in TTM research.

## Limitations of the Transtheoretical Model

There are several limitations of TTM, which should be considered when using this theory in public health. According to Prochaska and Norcross [27] the limitations of the model include the following:

1. The theory discounts the social context in which change occurs, such as socioeconomic status and income.
2. The lines between the stages can be arbitrary with no set criteria of how to determine a person's stage of change.
3. There is no clear sense for how much time is needed for each stage, or how long a person can remain in a stage.

4. The model assumes that individuals make coherent and logical plans in their decision-making process when this is not always true.

## Methodology

Secondary data from important texts, journals, newspapers, government publications, historical documents, and the Internet are used in the study. The research, however, was restricted to data that was documented or currently available or recorded information about the major factors responsible for non-communicable diseases, the challenges in fighting non-communicable diseases in and how the problem of non-communicable diseases can be mitigated in Nigeria [33]. The analysis method used by the study is content analysis, which takes into account the body of existing literature.

## Findings and Discussion

Based on the stated research questions, the findings and discussions are purely based on the research questions. The questions are discussed as follows:

### What are the major factors responsible for non-communicable diseases in Nigeria?

Several factors can increase the number of opportunities to develop NCDs and can be Numerous variables, which can be categorized in various ways, can raise the likelihood of developing NCDs. Risk factors are categorized in one method as either modifiable or non-modifiable, depending on whether their conditions are changeable or not. Age, gender, genetics, race, and ethnicity are the non-modifiable risk factors; the modifiable risk factors are high blood pressure, smoking, diabetes mellitus, physical inactivity, obesity, and high blood cholesterol [34]. It's interesting to note that most of the factors that are related to age and gender can be changed, even if they are unchangeable. There are three classes into which the non-modifiable factors can also be divided:

1. Biological factors, such as being overweight, dyslipidemia, hyper-insulinemia, and hypertension;
2. Behavioral factors, such as diet, lack physical activity, tobacco smoking, and alcohol consumption; and
3. Societal factors, which involve complex combinations of interacting socioeconomic, cultural and environmental parameters (WHO, 2003).

### Explanation of the three key risk factors of NCDS:

The three main key factors of NCDs are age, diet, and economic context. They are highlighted below.

**Age:** Although NCDs are typically linked to the elderly, anyone might be at risk, even if they are not yet born. These illnesses may begin in infancy and continue to worsen into childhood, adolescence, and old age (Fair Society, 2010). Nonetheless, 15 million NCD-related fatalities were reported among individuals between the ages of 30 and 69; of these "premature" deaths, low- and middle-income nations accounted for more than 82% (WHO, 2018). The life course viewpoint provides proof that adult Noncommunicable Diseases (NCDs) originate in the uterus. Research by Barker (1998) demonstrated the important influence that maternal nutrition plays in adult diseases. He discovered that the adaptation of human fetuses to a restricted nutrition supply led to long-lasting alterations in metabolism and structure. Consequently, a number of ailments,

including heart disease, diabetes, and hypertension in later life, may have been caused by these programmed changes. Furthermore, bad behaviors such as nutrition, drug use, stress, alcohol use, and tobacco use during pregnancy do not have the only detrimental effects on unborn children; air pollution is one such environmental element. These variables affect the development of the fetus and the early brain. For instance, low birth weight is linked to poor long-term health and cognitive decline (WHO, 2003; Fair Society, 2010).

Childhood is a time when new NCD hazards could arise since unhealthy food and beverages are readily available in kindergartens and schools. As a result, there are a lot of overweight and obese kids. Young people entering the adolescent stage of life after that point may pick up new, dangerous behaviors like smoking and drinking alcohol, which can greatly increase the risk of NCDs (Pechmann, 2005). These unhealthy behaviors may persist throughout adulthood due to other workplace factors that affect adults, such as financial strains, joblessness, dissatisfying occupations, and limited social interaction, all of which have an impact on the development of NCDs. Seniors may face new difficulties after retirement or leaving the workforce, which may have an impact on the onset of NCDs. Furthermore, elderly individuals are disproportionately affected by poor nutrition, inactivity, alcohol and tobacco use, social isolation, and financial stress, all of which significantly increase the risk of NCDs [21].

All ages can benefit from NCD prevention and control. The health of mothers both before and throughout pregnancy affects the likelihood that their offspring may develop NCDs as adults. Due to the fact that it addresses the underlying source of the issue, this is the most crucial NCD control technique. NCDs can be mainly prevented at all stages of life by enforcing strict regulations on food and drink, encouraging physical exercise in schools and workplaces, monitoring air quality, and providing smoke-free zones. However, the marketing of unhealthy food, sugar-filled beverages, tobacco, and alcohol can be controlled, and taxes can significantly improve the nation's health statistics. In addition, engaging in social activities is crucial for the mental and physical well-being of obese children and older individuals, as they are more likely to experience social isolation (Billingsley, 2016; WHO, 2016).

**Diets and Lifestyle:** Infectious and parasitic diseases used to be the leading causes of death, but in the last few decades, Non-Communicable Diseases (NCDs) have replaced them as the leading cause of death (Martorell et al., 2000). This could be explained by how people's diets and lifestyles have changed throughout time, which is a change in the patterns of human disease. There is a clear correlation between NCDs and a number of dietary parameters, including meat, whole grain products, good eating habits, consumption of sugar-sweetened beverages, and iron-based diets [34]. Furthermore, there is a clear correlation between NCDs and large intakes of processed meat and beverages with added sugar, as well as other unhealthy lifestyle choices including smoking, physical inactivity, and having a high Body Mass Index (BMI). Because of their high fiber content and capacity to release glucose into the bloodstream gradually, whole-grain products offer protective effects that are independent of BMI. This can potentially increase insulin sensitivity by lowering the postprandial insulin response (Stein & Colditz, 2004).

The term "dietary transition" refers to modifications in energy expenditure, availability, processing, and dietary consumption. Additionally, the notion expands to encompass physical activity, anthropometric measurements, and body composition (WHO, 2002).

Particularly in developing nations, the switch to western diets gives rise to the usage of dietary transition terminology. Foods derived from animals, processed foods high in sugar and fat, and refined carbs have replaced cereal in most cultures where traditional food is natural, healthier, and higher in fiber. Thus, there have been quick changes in diet and a sharp rise in NCDs in low- and middle-income nations. NCDs are the result of concurrently rising food consumption and falling rates of physical activity. The primary cause of physical inactivity is the quick and ongoing advancement of technology. From the standpoint of lowering the risk of NCDs, life is made easier but unhealthier by the easy access to contemporary technology and manufacturing in homes and workplaces, including machines, cars, and labor-saving technologies (Popkin, 2015).

**The Economic Context:** In industrialized nations, NCDs are already widespread and spreading quickly. The aging of the world's population and commercial demands for cigarettes and unhealthy diets have led to the spread of the western lifestyle in low- and middle-income nations, which has increased the prevalence of Noncommunicable Diseases (NCDs) in these regions. Low income and ill health are directly correlated, and this leads to psychosocial issues, food poverty, and the purchase of less priced but unhealthy food items and therapies. Low-income individuals feel as though they are beneath society, which keeps them from engaging in social activities. But in high-income nations, food scarcity, limited mobility, and inactivity are also significant issues (Marmot, 2004).

In addition to personal behavior and lifestyle choices, there is a growing movement to view social, political, and economic institutions as important determinants of NCDs (Krieger, 2001). Krieger's Ecosocial Theory emphasizes the ecosocial disease distribution, which explains how variations in historical, sociocultural, and ecological contexts have a substantial impact on how different social groups fare in terms of health. For example, the current coronavirus COVID-19 epidemic highlights the negative aspects of long-standing economic and health inequalities. According to Krieger's research, a number of factors, including living in crowded areas, taking public transportation to work, working in service jobs that require close contact with others, and a lack of protective equipment at workplaces, are responsible for the higher number of COVID-19 deaths among African Americans in the US compared to Whites.

### What are the challenges in fighting non-communicable diseases in Nigeria?

According to Ladeira et al., [35] and WHO [36], the following are the challenges in fighting non-communicable diseases in Nigeria.

1. **Lack of Awareness and Education:** Many people in Nigeria have limited knowledge about NCDs, their risk factors, and preventive measures. This lack of awareness leads to delayed diagnoses and poor management.
2. **Limited Healthcare Infrastructure:** A significant portion of the population especially in the rural areas, have limited access to healthcare infrastructure and lacks access to basic healthcare facilities. This limits early detection and treatment of NCDs.
3. **Healthcare Funding:** Insufficient funding for healthcare infrastructure hinders the development of adequate facilities, medical equipment, and provision of necessary medications for managing NCDs.
4. **Lifestyle and Behavioral Factors:** Rapid urbanization has led to

- lifestyle changes, including unhealthy diets, sedentary lifestyles, and increased tobacco and alcohol consumption, contributing to the rise in NCDs. Cultural Practices: Some cultural norms and practices might influence health behaviors, making it challenging to promote healthier lifestyles.
5. **Limited Diagnostic Tools and Treatment:** Many healthcare facilities lack adequate diagnostic tools to screen and diagnose NCDs effectively.
  6. **Medication Accessibility:** Affordability and availability of medications for NCDs like diabetes, hypertension, and cancer are significant concerns for many Nigerians.
  7. **Socioeconomic Factors:** Due to poverty, a considerable percentage of the population lives below the poverty line, making access to quality healthcare, healthy foods, and preventive measures difficult.
  8. **Inequality:** There are great disparities in healthcare access that exist between different regions and socioeconomic classes, leading to unequal health outcomes.
  9. **Lack of Policy Implementation:** Policy Implementation Challenges: Despite having policies in place to address NCDs, effective implementation, monitoring, and evaluation might be lacking due to various administrative and resource constraints.
  10. **The Problem of Prioritization:** NCDs might not receive adequate attention and funding compared to communicable diseases, impacting prevention and control efforts.
  11. **Public Health Interventions:** Implementation of preventive health programs aimed at promoting healthier lifestyles, screenings, and early detection of NCDs often face challenges in reaching remote areas and engaging the population.
  12. **Lack of Healthcare Workforce:** Insufficient trained healthcare professionals specializing in managing NCDs can limit the quality and reach of services.
- How can the problem of non-communicable diseases be mitigated in Nigeria?**
- Addressing Non-Communicable Diseases (NCDs) in Nigeria requires a multifaceted approach due to their complex nature and diverse causes. According to Mensah and Mayosi [37] and WHO [38], here are several strategies that can help mitigate these challenges.
1. **Awareness and Education:** Launching nationwide awareness campaigns to educate the population about the risk factors, symptoms, and preventive measures related to NCDs such as diabetes, cardiovascular diseases, cancer, and respiratory conditions. This includes promoting healthy lifestyle choices like regular exercise, a balanced diet, avoiding tobacco and excessive alcohol consumption.
  2. **Healthcare Infrastructure Strengthening:** Investing in healthcare infrastructure, especially in rural areas, to improve access to healthcare services, diagnostic facilities, and treatment for NCDs. This includes training healthcare professionals in early detection and management of these diseases.
  3. **Affordability and Accessibility:** Making medications and treatments more affordable and accessible to the general population. This can involve government subsidies, health insurance schemes, or partnerships with pharmaceutical companies to provide essential medications at lower costs.
  4. **Preventive Healthcare:** Focusing on preventive healthcare through regular screenings, check-ups, and vaccinations, especially for high-risk groups. Encouraging routine health checks can aid in early detection and management of NCDs.
  5. **Community Engagement:** Involving communities in health initiatives through local leaders, community health workers, and grassroots organizations. This could involve setting up support groups, workshops, and community events to promote healthier lifestyles.
  6. **Data Collection and Research:** Gathering comprehensive data on the prevalence, risk factors, and patterns of NCDs in Nigeria to better understand and address the specific challenges. Research can also help identify effective interventions and treatments tailored to the population's needs.
  7. **Regulatory Measures:** Implementing policies and regulations aimed at reducing risk factors such as controlling tobacco and alcohol consumption, promoting healthier food choices, and creating environments that encourage physical activity.
  8. **Partnerships and Collaboration:** Collaborating with international organizations, NGOs, private sectors, and academia to leverage resources, knowledge, and expertise in tackling NCDs. This collaboration can enhance the effectiveness of interventions and programs.
  9. **Empowerment and Support:** Providing support networks for individuals living with NCDs and their families. This can include counseling services, peer support groups, and access to information about managing these conditions effectively.
  10. **Long-term Commitment and Sustainability:** Ensuring sustained efforts and commitment from government, healthcare providers, civil society, and individuals to address NCDs effectively over the long term.
  11. **Integration of NCDs into Primary Healthcare:** Incorporating NCD prevention, screening, and management into primary healthcare services can significantly improve early detection and treatment. Training healthcare workers at primary care levels to handle NCDs effectively is crucial.
  12. **Technology Integration:** Utilizing technology for healthcare, such as telemedicine, mobile health applications, and health information systems, can help in remote consultations, patient monitoring, and data collection, particularly in remote or underserved areas.

## Conclusion

The primary cause of illness and mortality worldwide is now Non-Communicable Diseases (NCDs). Out of 56 million fatalities worldwide in 2012, 38 million were due to NCDs, and 28 million of these deaths happened in low- and middle-income nations. It is predicted that by 2030, the number of these deaths will rise from 38 million in 2012 to 52 million, with a significant increase occurring in low- and middle-income nations, which already have a significant burden of communicable diseases (a double burden of disease). For instance, the NCD death rate in the African region was 28 million in 2012. The finding of the study also revealed that there are three main key factors of NCDs and these include age, diet, and economic context. The study discovers that some of the

challenges in fighting non-communicable diseases in Nigeria include lack of awareness and education, limited healthcare infrastructure, healthcare funding, medical equipment, lifestyle and behavioral factors, cultural practices, limited diagnostic tools and treatment, medication accessibility, socioeconomic factors, inequality, lack of policy implementation, the problem of prioritization, public health interventions, lack of healthcare workforce, cultural perceptions and beliefs, etc. The findings of the study revealed that the problem of non-communicable diseases in Nigeria can be mitigated through awareness and education, healthcare infrastructure strengthening, affordability and accessibility, preventive healthcare, community engagement, data collection and research, regulatory measures, empowerment and support, integration of NCDs into primary healthcare, technology integration, workplace wellness programs, Public-Private Partnerships (PPPs), addressing socioeconomic factors, nutrition and food policies, monitoring and evaluation, cultural sensitivity and tailored interventions, etc.

## Recommendations

1. The Federal Government should collaborate with NGOs and other private entities to improve on the nation's healthcare service delivery.
2. The Federal Government should make and implement strict policies that promote healthier foods and should ensure that the National Agency for Food and Drug Administration and Control (NAFDAC) sees to the proper regulation of imported foods and food products.
3. The Nigerian government should partner with international organizations, NGOs, private sectors, and academia to launch nationwide awareness campaigns in order to educate the population about the risk factors, symptoms, and preventive measures related to non-communicable diseases.

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