

Cross-National Study of Non-Communicable Diseases Among the Elderly: A Focus on Kenya and India

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Abstract:- Globally, countries are experiencing significant shifts in population age structures due to increased life expectancy and lower fertility rates. In the last five decades, the elderly population has risen from 31 million to 106 million and from 0.6 million to 2.3 million in Kenya and India respectively. Both countries are facing an epidemiological transition, with non-communicable diseases (NCD) posing major health concern for the elderly. Despite prioritizing the control of communicable diseases, non-communicable diseases (NCDs) are placing a significant strain on the limited health and social security resources in both nations. This study utilized published data to compare NCDs among the elderly populations in Kenya and India. The findings from the trend analysis showed that in India NCDs accounted for 60% of elderly health issues, followed by disabilities (30%) and mental health (10%). In Kenya, NCDs accounted for 65% of elderly issues, disabilities 23% and mental health 12%. Cardiovascular diseases and hypertension were the leading NCDs in both countries. The elderly spent 47% and 45% of their resources on NCD treatment in Kenya and India respectively. Common risk factors, including tobacco and alcohol use, physical inactivity, and unhealthy diets, were widespread. Men were found to be more vulnerable to NCDs than women and the prevalence of multimorbidity increased with age. Access to insurance and social security differed, with India having more government-sponsored insurance than Kenya. The study concluded that urgent healthcare interventions were needed in both countries to address NCDs among the elderly at policy and program levels, ensuring integrated care for this vulnerable population.

Keywords:- Elderly Health, aging Population, Non-Communicable Diseases, India, Kenya.

I. INTRODUCTION

All over the world, many countries are witnessing an unprecedented and ongoing shift in population age structures in line with declining fertility rates and life expectancy. The share and the number of elderly people in the total population are increasingly rapidly because people are living longer lives. The United Nations projected that 30 years to come, the number of the elderly persons globally is projected to rise sharply, reaching over 1.6 billion by 2050 and representing

16% of the world's population (UNDESA, 2020). The UNDESA report further postulates that in the next thirty years, Europe and North America regions will have approximately 100 million elderly persons while Central and Southern Asia will have almost 210 million. The largest increase will occur in Eastern and South-Eastern Asia, from 272 million persons aged 60 years in 2020 to 572 million in 2050. In India, the elderly population has been increasing since 1961 and during 2001-11, they grew by more than 27 million. The 2011 Indian government Census showed that 104 million people aged 60 and above, comprising 8.6% of the total population, with females outnumbering males among the elderly. The elderly population is projected to grow from 138 million in 2021 to 194 million by 2031—a 41% increase in a decade. By 2050, seniors will make up 19.5% of India's population, with 319 million people aged over 60, meaning 1 in 5 Indians will be a senior citizen. In Kenya, between 1969 and 1989, people aged over 55 years grew by approximately 440,000 persons 7 and 16 years later, the increase was more than one million followed by a two million increase from 2005 to 2020. The growth rate of the elderly population now exceeds that of the total population and is most likely to soar up to approximately 5% per year shortly after the turn of the twenty second century. It is noted that the elderly population over 60 years represent about 5.8% of Kenya's population (KNBS, 2020). There were 2,290,075 elderly population in 2019 out of which 1,022,552 were men and 1,267,523 were women. Kenya's elderly population (aged over 60) rose from 2.1% in 1973 to 2.9% in 2022, with an average annual growth rate of 0.65% (World Data Atlas, 2022). This highlights significant increase in Kenya's elderly population.

Increase in the aging population will pose significant challenges to healthcare systems in all countries, including developed nations. Although developed countries are often ranked among the best in elderly healthcare delivery, there are considerable disparities in access to healthcare and quality of life across different regions (Haseltine, 2018). Dealing with rising demands of social and healthcare systems as the incidence of non-communicable diseases (NCDs) increases is a complex health challenge in the face of the growing elderly population. NCDs like dementia, heart disease, type 2 diabetes, arthritis, and cancer pose a heightened risk to the elderly, leading to significant illness, disability, mortality, and healthcare costs. Globally, NCDs are a primary health

concern among older adults, especially in low-income regions like Asia and Africa, where the elderly also face a dual burden of NCDs and communicable diseases, straining health systems (CDC, 2022). WHO attributes rising life expectancy to shifts in leading causes of death from infections to NCDs (WHO, 2020). Common conditions in older age include hypertension, high cholesterol, cardiovascular, and respiratory diseases, with heart disease, strokes, and cancers notably impacting aging populations in low- and middle-income countries (Suzman & Beard, 2015). Moreover, the prevalence of obesity and injuries related to falls are skyrocketing among the elderly and it is suggested that obesity increases the chance of fall-related injury risk due to diminished static balance. Other risk factors such as tobacco and alcohol use, insufficient consumption of vegetables and fruit, and low levels of physical activity contribute implicitly or explicitly to the increasing global burden of NCDs. Treating and managing these chronic conditions increases the financial demands on the health care system due to multiple morbidity, prolonged medications and expected increasing hospital admissions of the older population (Healthy People, 2020). It highlights the importance of healthcare systems' adaptation by allocating more resources to geriatrics and chronic disease management, enhancing preventive care measures and investing in community health programs to alleviate the burden on hospitals.

Developing countries like Kenya and India are experiencing rapid population aging, which is linked to a higher risk of chronic conditions and a growing demand for healthcare. The ageing population faces a myriad of health challenges. Kenya and India are facing an epidemiological transition from communicable to noncommunicable disease burden among the elderly. Most of the healthcare programmes, projects and policies in these countries have heavily been championing on the health of the mothers and children as well as and TB, HIV, malaria and periodical infectious diseases. Given the limited expenditure on healthcare in the developing countries, the health of the elderly population calls for a concern. Consequently, the objective of this study was to conduct a comparative analysis of non-communicable diseases among the elderly in Kenya and India, with the aim of drawing valuable insights and lessons.

II. STATEMENT OF THE PROBLEM

Studies indicate that non-communicable diseases (NCDs) remain a major public health concern among the elderly in Kenya and India (Fried et al., 2019; Tripathy, 2019). The aging population presents significant challenges for society and healthcare systems, including shifting health profiles, increased demand for medical services, and rising healthcare costs. Key issues include the fast-growing "old-old" (85+) population, facing age-related conditions like arthritis, dementia, and cancer, and the "young-old" (65+), who are more impacted by lifestyle-related diseases such as type 2 diabetes. Additionally, evolving social expectations and increased health awareness among the next generation of older adults present further challenges (IIPS, 2021). These challenges may influence future models of health-care

delivery and engagement. In today's healthcare environment, the preferences of older patients are frequently disregarded, with healthcare decisions often left to family members or doctors, leaving elderly patients feeling excluded. Additionally, population aging in developing countries has largely been overlooked by development planners.

Developed countries have made significant progress in securing and legislating rights for their older populations, while countries in Asia and Africa, which face high levels of poverty, conflict, environmental challenges, and limited healthcare access, have made fewer efforts in this area. Current public health policies in many developing nations, often supported by international agencies, primarily focus on maternal, contraceptive, and infant health (Bush et al., 2019). As aging populations grow in Africa, Asia, and South America, non-communicable diseases will increasingly become a major health concern. This underscores the urgent need for research into the healthcare needs of the elderly and for plans addressing demographic changes and related public health challenges globally. As evidenced, Kenya and India are facing demographic transitions and there is need to reconsider all of its aspects in public services that it can meet adequate demands of its citizens. These considerations include reforming the health systems at all levels and paving way for comprehensive care to the elderly populations. It can also include revisiting policy agenda, reviewing health care financing, studying the economic, social change and planning ahead to meet the needs of the increasing elderly population among others. The main objective of the study was to conduct a comparative analysis of non-communicable diseases among the elderly populations in Kenya and India.

III. LITERATURE REVIEW

Everyone around the world have the opportunity to live a long and healthy life. However, the environmental conditions in which humans live in can favor health or be harmful to it. The environmental aura and conditions such air and water pollution, contaminated food, violence, soil erosion and deforestation are highly influential on human behavior and their exposure to health risks are highly influential on human behavior and their exposure to health risks. There is empirical evidence to support that the proportions of quality and healthy life have remained broadly constant, implying that the additional years are in poor health (Bush et al., 2019). A long lifespan spend in supportive, conducive and healthy environment culminates in productivity, development and value addition rather than the dependency syndrome. If added lifespan is subjugated by decreasing physical and mental burden, the implications for elderly persons alongside the society will be more detrimental in all spheres of life such depleting the country's already meagre resources. According to the WHO (2022), variations in the health of the elderly population can be attributed to factors such as genetics, physical and social environments including homes, neighborhoods, and communities—as well as personal characteristics like demographic and socioeconomic profiles, including education and employment. The environmental conditions that people live in as children or even as developing fetuses compounded with personal characteristics

will have long-term implications during a later time in ageing. The study conducted by Shubhanjali et al. (2024) examined the prevalence of multiple non-communicable disease (NCD) risk factors among self-reported healthy older adults living in the community in India. It revealed that 55.2% of individuals were at high risk for NCDs. Factors such as being male, widowed, obese, and unemployed were independently associated with increased odds of being classified as high-risk. Geographically, individuals in the Northeastern and Southern states faced a higher burden of high-risk classifications. Furthermore, during screening, 28.44% of high-risk individuals were found to have undiagnosed hypertension. This suggests that early-life environmental conditions, along with personal characteristics, can have enduring impacts on health as people age, contributing to the later development of NCDs.

The findings from a related study by Ramesh et al. (2023) on non-communicable diseases and their impact on depression, anxiety, and stress among the geriatric population residing in old age homes in India found that the overall prevalence of depression was 84.2%, anxiety was 49.2% and stress was 55.9% among the study participants. The findings of the study show that there is a statistically significant association of diabetes, presence of hypertension and the presence of visual impairment in developing the symptoms of depression. While investigating non-communicable diseases prevalence, patterns and patient outcomes in hospitalized populations in India, Belayneh et al. (2024) found that about 23.4% of patients struggled with NCDs, with cardiovascular diseases (53.3%), cancer (29.6%), diabetes (6.1%), and respiratory diseases (6.5%) being the most prevalent. This highlights the high burden of NCDs among hospitalized populations and the critical need for healthcare systems to focus on managing these chronic conditions, as they represent a large proportion of patient health issues. In their study on socio-economic inequalities in the burden of communicable and non-communicable diseases among older adults in India, Kundu and Chakraborty (2023) reported a prevalence of 24.9% for communicable diseases and 45.5% for non-communicable diseases. Similarly, Sharma et al. (2024), in a comprehensive review of trends and patterns of NCD risk factors in India, emphasized the need for evidence-based interventions and policies tailored to the specific context in order to effectively address NCD risk factors.

In Sub-Saharan Africa, cardiovascular diseases account for 37% of NCDs among the elderly, while in Kenya, hypertension is the most prevalent condition at 33% (Yuyun et al., 2020). A study by Mkuu et al. (2021) investigated the relationship between non-communicable diseases (NCDs) and health behaviors, finding that individuals with the highest likelihood of developing NCDs also engaged in the highest-risk behaviors. These results indicate that risk factors contribute to increased NCD risk in rural areas. Additionally, research by Okyere et al. (2023) focused on the burden of NCDs among women of reproductive age in Kenya, revealing that hypertension is the most prevalent NCD in this group. This highlights hypertension as a significant health concern for women of reproductive age in Kenya, as noted by Okyere et al. (2023). This finding suggests that targeted interventions

and health policies focusing on the prevention and management of hypertension in this demographic are crucial. Addressing this issue early could help reduce the long-term health risks associated with non-communicable diseases (NCDs) and improve overall health outcomes for women in this age group. The study by Mugambi et al. (2024) on the interventional capacity of community health volunteers for screening and linking non-communicable diseases in Nyeri County, Kenya, found that a well-structured community intervention model is crucial for effective grassroots healthcare delivery; however, it needs to be optimized for managing NCDs.

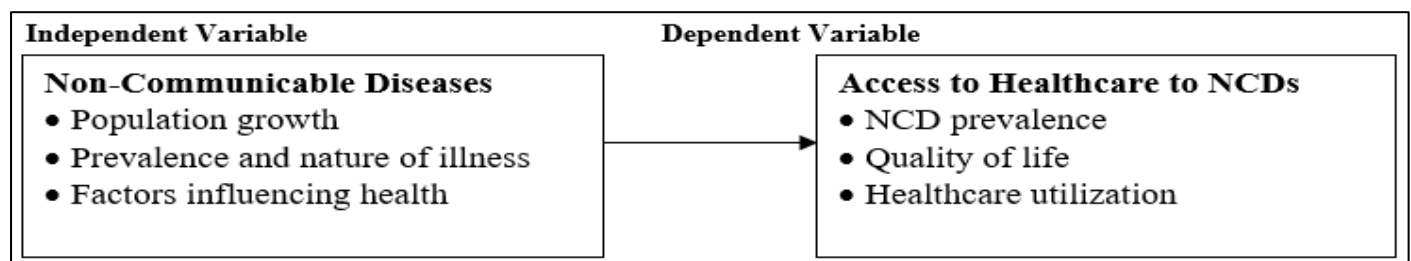
However, a study by Ammoun et al. (2022) investigating the preparedness of health facilities to provide non-communicable disease services in Kenya identified significant gaps in the current readiness of these facilities to manage NCDs across various levels of healthcare, with disparities observed by disease type and healthcare facility category. Ammoun et al. (2022) identified significant shortcomings capacity of hospitals in Kenya to effectively manage non-communicable diseases (NCDs). The study by Ammoun et al. (2022) highlights critical gaps in the capacity of health facilities to manage NCDs, emphasizing the need for improvements across different levels of care and tailored resources based on the type of disease. These gaps in readiness vary depending on the type of disease and the level of healthcare facility, indicating that Kenya's healthcare system requires improvements and more tailored resources to address NCDs comprehensively at all levels of care. In mapping the current and projected non-communicable disease burden in Kenya, Mikaela et al. (2020) gathered prevalence and incidence data for each NCD, with the exception of ischemic heart disease. Meanwhile, Mtintsilana et al. (2023), in examining the link between socio-economic status and NCD risk among young adults from Kenya, South Africa, and the United Kingdom, found that the strength and direction of these associations varied both within and between countries. This suggests that managing non-communicable diseases in Kenya requires a multi-dimensional strategy that addresses both healthcare system preparedness and socio-economic influences. Mikaela et al. (2020) pointed out gaps in prevalence/incidence data, such as for ischemic heart disease, which suggests that comprehensive data collection is essential for future planning. Furthermore, Mtintsilana et al. (2023) found that the relationship between socio-economic status and NCD risk varies both within Kenya and internationally, indicating that socio-economic disparities must also be addressed to reduce NCD burden effectively. Together, these studies underscore the complexity of tackling NCDs, requiring enhanced healthcare infrastructure, better data, and consideration of socio-economic factors.

To address the needs of the elderly population with non-communicable diseases (NCDs), Indian government has developed several policies and health programs aimed at addressing the specific needs of elderly individuals suffering from NCDs. For instance, India's National Program for the Health Care of the Elderly (NPHCE) seeks to provide

accessible, affordable and comprehensive care to the elderly at primary, secondary and tertiary levels. Other frameworks include the National Health Mission (NHM) and its NCD Component focuses on improving healthcare access including a specific component for NCD prevention and control, the National Policy on Older Persons (1999) and Draft National Policy for Senior Citizens (2020), the National Multisectoral Action Plan for Prevention and Control of NCDs which provide a framework for reducing the burden of NCDs across all age groups, including the elderly. Despite the existence of various programs in India, rural areas often lack the infrastructure needed to provide comprehensive NCD care to the elderly. Also, India faces limitations in workforce capacity. Kenya has developed robust policies and health programs with the goal of improving healthcare access and quality for the elderly population. For instance, the Kenya's National Policy on Older Persons and Ageing (2014) provides a robust framework for addressing the challenges facing older persons, including health concerns such as NCDs

with special emphasis on access to healthcare services and medical insurance. The Kenya Health Policy (2014-2030) aims to achieve universal health coverage (UHC), which is crucial for addressing NCDs among the elderly. The Kenya's National Strategy for the Prevention and Control of NCDs (2021–2025) emphasizes the prevention and management of NCDs across all age groups, including the elderly. Other strategies include NHIF coverage and specialized packages and community health strategies that integrate services for NCD prevention and management at the grassroots level. Kenya has made significant strides in addressing the healthcare needs of elderly individuals with non-communicable diseases through various policies and programs. but significant gaps remain in terms of implementation, funding, and access (Subramania et al., 2017).

➤ Conceptual Framework



IV. RESULTS AND DISCUSSIONS

A. Population Growth

➤ Trends in Elderly Population from 1969 - 2019

A comparison on the trend of elderly revealed that there is a growing size of older peoples' population in both Kenya

and India. The number of older Indians aged 60 and above years increased almost five-fold from 31 million to about 136 million between 1969 and 2019. This population on average represents about 9% of the total population. In Kenya the elderly grew to almost four-fold from 0.6 million to 2.3 million which represents about 5% of the total population. The findings are summarized in Figure 1.

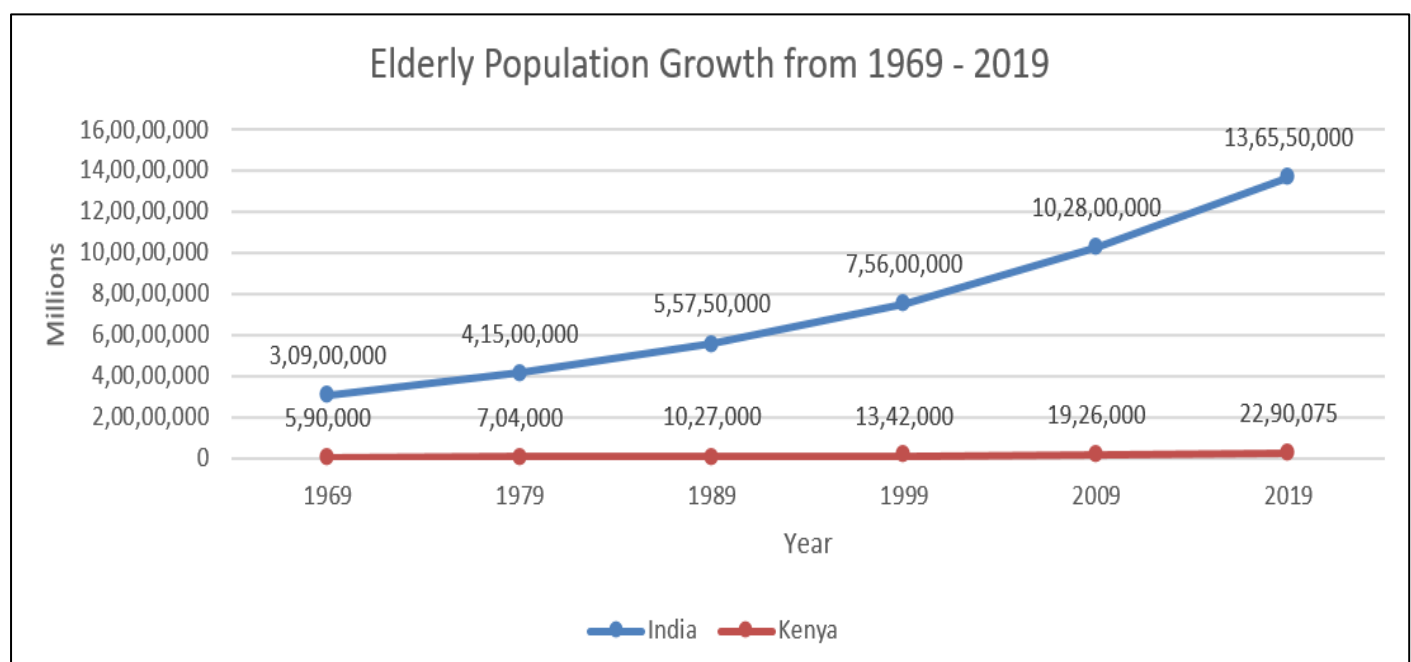


Fig 1 Trends in Elderly Population from 1969 - 2019

Source: Author's calculations from NSO-MoSPI 2021 & KNBS 2020

➤ Projection of Elderly Population Growth in 2030

From the comparison study on elderly population projection in Kenya and India it is found out that both countries are experiencing elderly population growth. India's elderly population in 2011 was 104 million and by 2030 it is

estimated that it will be almost 200 million. Kenya's elderly population in 2019 was around 2.3 million and in the year 2030 it is estimated that it will have grown to up to 7 million. Figure 2 presents the projection of population growth.

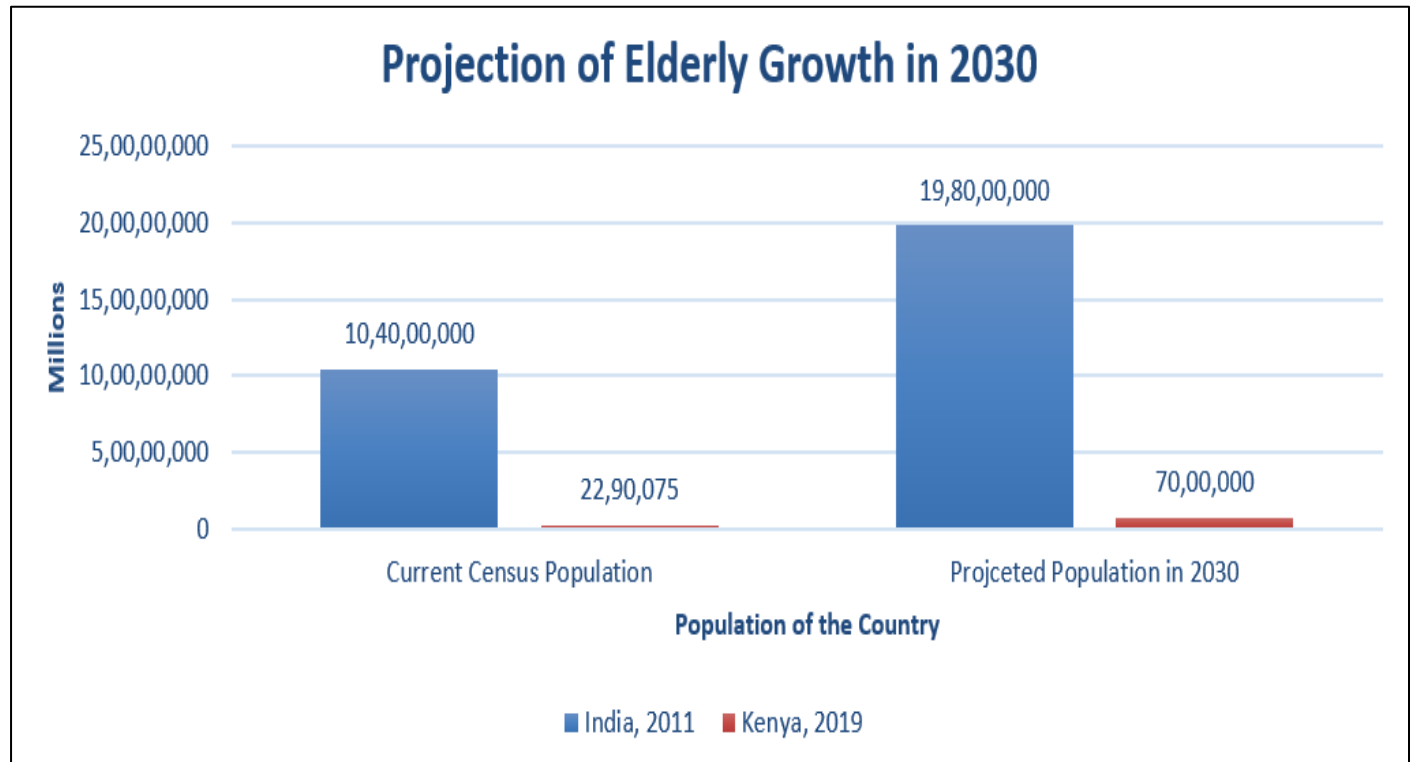


Fig 2 Projection of Elderly Population Growth in 2030

Source: Author's calculation from UNDESA 2020, KNBS 2020 & NSO-MoSPI 2021

A comparison of trends in Kenya and India reveals a growing elderly population in both countries with a projected increase of 200 million and 7 million respectively in 2030. Sex ratio of the elderly in India was 51% females and 49% males which was almost an equal number. In Kenya the females at 56% were more than the males at 44%. This finding corroborates another report by the WHO which indicated that Kenya and India, like all Countries around the world are experiencing gradual increase of their elderly population because of falling fertility rates and rising life expectancy (WHO, 2022). The anticipated growth of the elderly population in Kenya and India by 2030 aligns with a UN report stating that the global number of people aged 60 and above, which was 903 million in 2019, is expected to double to 2.1 billion by 2050, comprising 22% of the world's population (UN, 2020). This increase in the elderly population in these two developing nations will have significant direct and indirect effects, including shifts in health profiles, greater demand for healthcare services, and rising healthcare costs.

B. Prevalence of NCDs

This study found out that there were two leading NCDs that take a heavy toll among the elderly population in Kenya and India. In India, cardiovascular diseases lead with 37% and is followed by hypertension with 26% while in Kenya the leading NCDs is hypertension which accounted for 33% followed by cardiovascular diseases at 28%. The bone/joint conditions in India accounted for 13% while in Kenya it accounted for 5% which is less than half of the same condition in India. Diabetes cases among the elderly population in India accounted for 10% while in Kenya it accounted for 7% of the NCDs. Lung diseases among the elderly in India accounted for 4% while in Kenya it accounted for 8% which is more than half the NCDs cases in India. Anaemic cases among the elderly in India accounted for 3% while in Kenya it accounted for 5% which almost two-fold the cases in India. Stroke diseases among the elderly in India accounted for 2% of the NCDs while in Kenya it accounted for 4% which is more than half the cases in India. Neurological/psychiatric conditions among the elderly in India was 2% while in Kenya was 5% which is double the cases in India. High cholesterol cases among the elderly in Kenya and India are almost similar with India having 2% and Kenya 3% cases. Cancer cases among the elderly accounted for 1% in India while in Kenya it accounted for 2% which is doubled the India scenario. Figure 3 presents the prevalence of NCDs in Kenya and India.

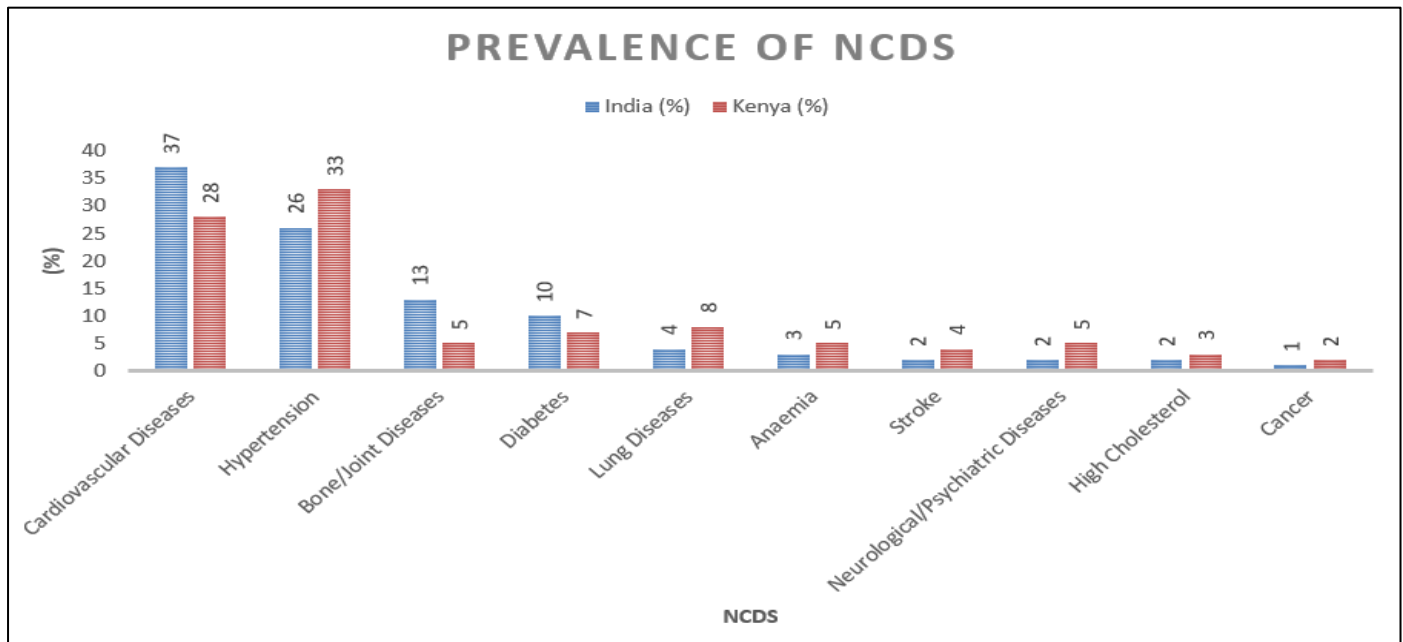


Fig 3 Prevalence of NCDs in Kenya and India
Source: Author's calculation from LASI 2020, LOSHAK 2022 & UNDESA 2020

The growing number of elderly individuals presents numerous health challenges, as many medical conditions and related disabilities become increasingly common with age. According to this study, NCDs are the major challenges facing the elderly population apart from other conditions associated with ageing. In India NCDs accounted for 60%, disability was 30% and mental health was 10%. In Kenya NCDs accounted for 65%, disability was 23% and mental health was 12%. This finding is supported by other studies which indicated that the greatest health challenges among the elderly in developing countries are NCDs at 70 % and disabilities at 22% and mental health at 8% (Adhikari, 2017; Yadav & Arokiasamy, 2014). Based on these studies, the elderly population in India allocated 47% of their spending to non-communicable diseases (NCDs), 43% to food items, and 10% to non-food items. In Kenya, the elderly population spent 45% on NCDs, 50% on food items and 5% on non-food items. Another study in India on elderly population confirmed that out-of-pocket expenditure (OOPE) on NCDs which is almost 60% is very as compared to food and no-food items at 40%.⁵³ Similarly, in other studies carried out in Kenya on elderly population indicated that the little income of the elderly is prioritized on food items (55%) while spending on NCDs (43%) come second and the rest of the expenditure (2%) is on non-food items (WHO, 2020; US. Bureau of the Census, 2020). There were two leading NCDs that take a heavy toll among the elderly in Kenya and India. In India for instance, cardiovascular diseases lead with 37% and is followed by hypertension with 26% while in Kenya the leading NCDs is hypertension which accounted for 33% followed by cardiovascular diseases at 28%. There is other eight NCDs health problems that also take a heavy toll on the elderly population in Kenya and India. These are bone/joint conditions (13%) in India and 5% in Kenya, diabetes (10%) in India and 7% in Kenya, lung diseases (4%) in India and 8% in Kenya, anaemia (3%) in India 5% in Kenya, stroke diseases (2%) in India and 4% in Kenya,

neurological/psychiatric diseases (2%) and 5% in Kenya, high cholesterol (2%) and in 3% in Kenya, and cancer diseases at 1% in India and 2% in Kenya. The findings on this study on the NCDs in the elderly revealed similarities with other studies. For instance, according to some studies on elderly population (CDC, 2022; Adhikari, 2017; IIPS, 2020; Olive, 2017), the prevalence of non-communicable diseases (NCDs) among the elderly population in India is significant and varies based on factors such as region, education, gender, and whether individuals live in urban or rural areas.

The common NCDs affecting the elderly in India include hypertension, arthritis, diabetes mellitus, chronic obstructive pulmonary disease, stroke, and myocardial infarction among others. Two other studies by HelpAge International & AARP. (2022) and Achwok et al. (2020) reported a similar scenario on NCDs among the elderly. The studies revealed that the cases of deaths attributable to NCDs in the country is soaring and most of these deaths occur among the elderly persons because of inadequate plans to safeguard their health rights. The NCDs accounts for 74.8% of the total years lived with disability in Kenya in 2019 with similar patterns for men and women. The most common non-communicable diseases (NCDs) affecting the elderly in Kenya include hypertension, cardiovascular diseases, heart diseases, lung diseases, diabetes, bone and joint diseases, anemia, and neurological or psychiatric disorders, among others. In comparing the NCDs among the elderly as they aged in Kenya and India, it was found out that there were sparing variations. Among the elderly aged 60-64 years cardiovascular in India was 38% while in Kenya it was 28%. Hypertension in elderly aged 65-69 years in India was 28% while in Kenya it was 42%. Bone/joint diseases in elderly aged 70-74 years in India was 8% while in Kenya it was 16%. Diabetes in elderly aged 75-79 years in India was 12% while in Kenya it was 9%. Lung diseases in elderly aged 80 and above years in India was 6% while in Kenya and India it was

13%. These findings were in tandem with other studies carried out in five continents on the adversity of NCDs in elderly population, it was found out that for men aged 60-69 years, the rate varied over the period between 76 and 80%, while for men aged 70 and over it varied between 82% and 84%. For women aged 60 to 69, the proportion ranged between 78 and 82% and for women aged 70 and over, 84 to 85% over the 25 years (GBD & IHME, 2019; UNDP & World Bank, 2016).

Research across five continents has indicated that susceptibility to non-communicable diseases (NCDs) increases with age, leading populations with older age structures to experience a higher proportion of deaths from NCDs compared to those with younger age structures, where communicable diseases such as pneumonia and diarrhea disproportionately affect children and contribute significantly to mortality. In India, it was found that females (40%) are less susceptible to NCDs than males (60%), a pattern also observed in Kenya, where females account for 30% and males for 70%. This aligns with findings from the NCD Alliance, which reported that men have a significantly higher risk of death from NCDs than women (NCD Alliance, 2020). One major factor may be that men are more frequently affected by underlying conditions associated with increased mortality, such as hypertension, diabetes, cardiovascular disease, and chronic obstructive pulmonary disease.

The study also identified diagnosed organ-related diseases among the elderly in both countries, including urogenital, hearing or ear, oral, gastrointestinal, and eye

conditions. When comparing treatment rates for NCDs among the elderly in Kenya and India, the findings revealed substantial variations. In India, treatment rates for NCDs range from 41% to 83%, while in Kenya, they range from 25% to 74%. On average, India leads with a treatment rate of 66.8%, compared to 51.5% in Kenya. These results are consistent with other studies (Holmes et al., 2020; Boutayeb & Boutayeb, 2019; Marshall, 2020; Skordis-Worrall et al., 2021) that suggest the coexistence of communicable and non-communicable diseases, often referred to as "the double burden of disease," has significantly influenced treatment priorities. This dual burden particularly impacts older populations in many developing countries, where the prevalence of NCDs is high. It poses a serious challenge for lower-middle-income countries (LMICs), as limited financial resources are often allocated to addressing communicable diseases while frequently neglecting the issue of NCDs.

C. Factors Influencing NCDs in Elderly Population

According to the study, the four major behavioural risk factors for NCD conditions among the elderly in the two countries were tobacco consumption, alcohol consumption, physical inactivity and unhealthy diet. In India, tobacco consumption among the elderly accounted for 31% while in Kenya it accounted for 22%. More elderly population (33%) in Kenya consumed alcohol as compared to their Indian counterparts at 18%. In India, physical inactivity among the elderly accounted for 15% while in Kenya it accounted for 26%. More elderly population (36%) in India consumed unhealthy diet as compared to their Kenyan counterparts at 19%. Figure 4 presents the major behavioural risk factors

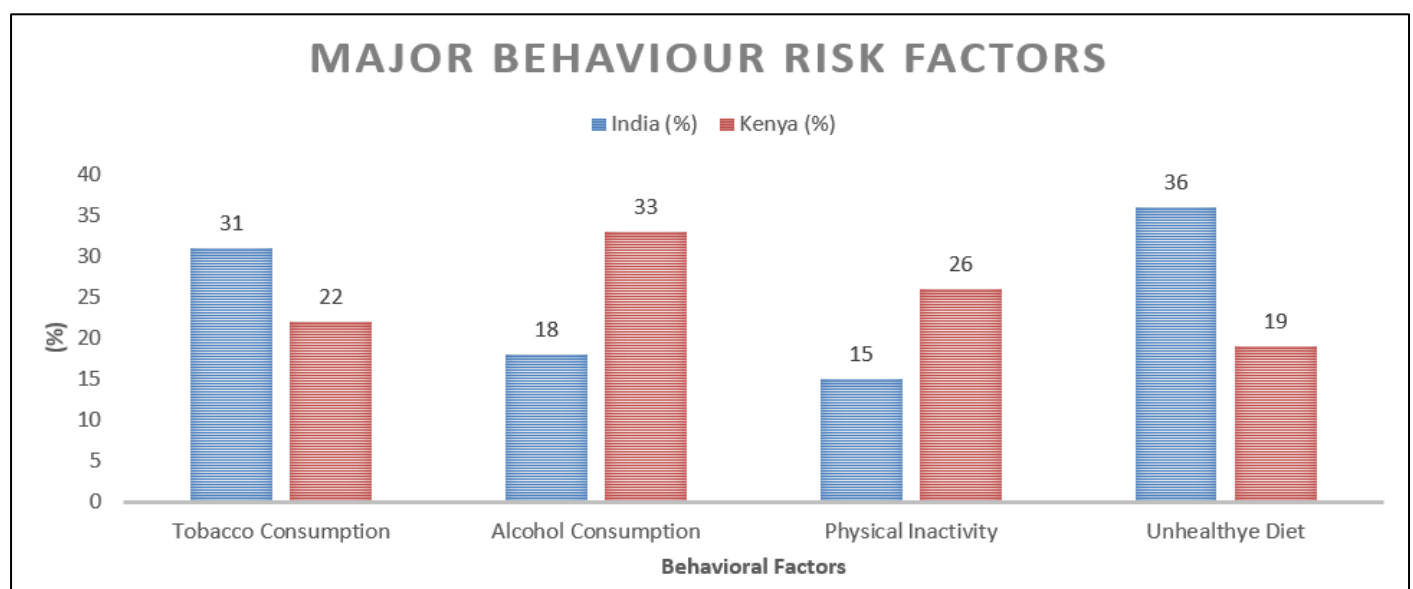


Fig 4 Major Behavioral Risk Factors

Source: Author's calculation from LASI 2020, LOSHAK 2022 & UNDESA 2020

This study found out that the major behavioural risk factors for NCDs among the elderly in the two countries were tobacco consumption, alcohol consumption, physical inactivity and unhealthy diet. Tobacco consumption among the older persons in India was at 31% while in Kenya it was 22%. Consumption of alcohol at 33% by the elderly in Kenya was higher than in India at 18%. Physical inactivity in India

among the elderly was at 15% while in Kenya it was 26%. More elderly population (36%) in India consumed unhealthy diet (36%) as compared to their Kenyan counterparts at 19%. Research conducted by the National Institute on Aging (2021) and the WHO (2022) on older adults has suggested that modifiable behaviors—such as tobacco use, physical inactivity, unhealthy diets, and the harmful use of alcohol—

significantly increase the risk of non-communicable diseases (NCDs). Tobacco use, including the effects of second-hand smoke exposure, is responsible for more than 10 million deaths annually (GBD & IHME, 2019). Use of excess salt or sodium intake is attributed to over 3 million deaths annually. Almost more than 1.7 million annual deaths from NCDs including cancers are due to use of alcohol while and more than 1.3 million deaths annually is attributed to insufficient physical activity among. In addition, several other studies in different continents have reported similar risk factors of NCDs among the elderly population (National Institute on Aging, 2021; UNDP and World Bank, 2016). These studies have identified four primary behavioral risk factors that contribute to major non-communicable diseases (NCDs): unhealthy diet, physical inactivity, and the use of tobacco and alcohol. Additionally, factors such as aging, rapid unplanned urbanization, and globalization also play a role in the increasing prevalence of NCDs.

According to this study, the biological risk factors for NCDs among the elderly in the two countries were overweight/obesity (India with 29% and Kenya with 20%), high blood pressure (India with 26% and Kenya with 37%), raised blood sugar (India with 24% and Kenya with 30%) and raised total cholesterol/lipids (India with 21% and Kenya with 13%). These findings resonate well with other studies (WHO, 2022; GBD and IHME, 2019) on elderly population which have reported that metabolic risk factors and metabolic changes increases the NCDs risk. The metabolic risk factors are raised blood pressure, overweight and or obesity, hyperglycemia or high blood glucose levels and hyperlipidemia or high levels of fat in the blood. Elevated blood pressure is attribute to 20% of the global deaths followed by raised blood glucose and overweight and obesity at 12 % and 8 % respectively. The metabolic risk factors include elevated blood pressure, overweight and obesity, hyperglycemia (high blood glucose levels), and hyperlipidemia (high levels of fat in the blood). Elevated blood pressure is responsible for 20% of global deaths, followed by raised blood glucose at 12% and overweight and obesity at 8%.

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

A. Summary

This study compared non-communicable diseases among the elderly in Kenya and India by utilizing data from the LASI, LOSHAK, UNDESA, and census reports. Analysis was based on the prevalence and nature of illness, factors influencing health, leading causes of deaths, and documentation of health practices that upscale health of elderly population. According to this study the increasing elderly population were grappling with higher prevalence of NCDs. In India, the leading NCDs are cardiovascular diseases (37%) and hypertension (26%). In Kenya, hypertension leads (33%), followed by cardiovascular diseases (28%). Other notable differences include bone/joint conditions, which are more prevalent in India (13%) compared to Kenya (5%), and lung diseases, which are higher in Kenya (8%) than India (4%). Diabetes cases are slightly

higher in India (10%) than Kenya (7%). Stroke, anemia, neurological/psychiatric conditions, and cancer are all more prevalent in Kenya, while high cholesterol is similar in both countries. Multi-morbidity rises with age, and the treatment rates for non-communicable diseases (NCDs) differ significantly between the two countries. Four primary behavioral risk factors were identified: tobacco use, alcohol consumption, physical inactivity, and unhealthy diets. Biological risk factors include obesity, high blood pressure, elevated blood sugar levels, and high cholesterol. Additionally, socio-demographic factors such as age, gender, marital status, education, income, residence and genetics also impact the prevalence of NCDs. Interestingly, the study found that elderly individuals with higher education levels are more vulnerable to NCDs. The study calls for urgent policy and program interventions to address NCDs in the elderly populations of both Kenya and India, emphasizing the need for integrated healthcare systems that focus on this age group.

B. Conclusions

The study concludes that the elderly populations in Kenya and India face a rising burden of NCDs, with hypertension and cardiovascular diseases being the most prevalent. It is also concluded that NCDs present a growing and significant burden among the elderly populations in both Kenya and India. Hypertension and cardiovascular diseases are the leading NCDs in both countries, with notable variations in the prevalence of other conditions like diabetes, lung diseases, and stroke. Behavioral and biological risk factors, such as unhealthy diets, physical inactivity, tobacco use, high blood pressure, and obesity, play a significant role in the increasing prevalence of non-communicable diseases (NCDs) among elderly populations. Socio-demographic factors, including education, income, and access to healthcare, also affect vulnerability to NCDs, with more educated elderly individuals surprisingly exhibiting a greater susceptibility to these diseases. The study underscores the urgent need for targeted healthcare interventions, improved access to social security and insurance, and comprehensive, integrated policies aimed specifically at the elderly. Focusing on prevention, early diagnosis, and effective management of NCDs is essential to improving the quality of life for the elderly in both countries.

C. Recommendations

The recommendation is hereby in line with conclusions and findings of this comparative study.

Governments should guarantee the availability of affordable, high-quality, and accessible social services, including healthcare and long-term care, for all older individuals. Additionally, they should enhance support for education and training in geriatrics and gerontology. Governments should also establish or strengthen legislation that promotes equality and prohibits age discrimination in the provision of healthcare, health insurance services, and social protection policies. They should also implement measures to prevent multiple forms of discrimination against older individuals. Additionally, Governments should ensure the provision of affordable, high-quality, and accessible social services, including healthcare and long-term care, for all

older individuals, while also enhancing support for education and training in geriatrics and gerontology. Moreover, Governments should introduce or strengthen legislation that promotes equality and prohibits age discrimination in healthcare and health insurance services, as well as in social protection policies. Additionally, they should take measures to prevent multiple forms of discrimination against older individuals.

A life-course approach should be adopted to promote good health and well-being, including the design of health systems that encourage healthy aging. Investments should be improved in the collection, analysis, and utilization of health and other data that are disaggregated by ethnicity, geographic coverage (states/regions), and migrant status throughout the life course. The perspectives of representatives from older persons' associations and older individuals from diverse backgrounds should be solicited regarding their needs and concerns related to health and well-being policies. Follow-up mechanisms should be established and implemented. Finally, there should be a focus on healthcare delivery, culturally and locally competent treatment protocols, and the monitoring and evaluation of elderly care programs and palliative care. This will facilitate better prioritization, planning, and the development of cost-effective healthcare programs for the elderly. Kenya can gain valuable insights from India, particularly regarding healthcare and social security schemes and strategies.

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