

INCIDENCE AND PREVALENCE OF CHRONIC DISEASES WORLDWIDE AND THE ASSOCIATED GLOBAL HEALTH CHALLENGES

Benjamin Poku PhD, MPH. Arkansas State University-Jonesboro.
bpoku@astate.edu

Abstract

- **Purpose:** The purpose of the research is to conduct systematic reviews and synthesis of existing knowledge that address the growing incidence and prevalence of chronic diseases across the world and its impact to public health in relation to communicable diseases.
- **Principal results:** A careful compilation and summary of 15-20 peer-reviewed publications from reputable databases such as PubMed, MEDLINE, CINAHL and other peer-reviewed journals indicate that Global pandemic of Chronic diseases (such as diabetes, high blood pressure, etc.) have become a greater public health burden in proportion as compared to communicable diseases.
- **Significant conclusions:** Given the complexity of the situation, efforts and strategies to mitigate the negative effect of Global Pandemic of chronic diseases within the global community must include not only urgent and binding commitment of all stake holders but also a multi sectorial long-term approach to increase the public health educational approach to meet the increasing world population of over 8 billion people and also the aging population as well to meet the complex challenges of chronic diseases.
- **Keywords:** Pandemic, Chronic Disease, Public Health, Health Challenges.

Introduction

Chronic diseases are conditions that require ongoing medical attention or limit daily activities. They include heart disease, cancer, diabetes, stroke, and arthritis. Most chronic diseases are caused by tobacco use, poor nutrition, and physical inactivity (The Lancet, 2022). The essay below is based on a systematic review and meta-analysis of the incidence and prevalence of the chronic disease worldwide and its impact on public health.

Based on WHO (2022), chronic diseases are associated with pain and fatigue, which become part of the daily lives of the affected ones. Chronic illnesses affect people's finances. They spend more money on medications than investing, leading to poor living standards. Chronic diseases cause poor working conditions, hence poor production. They also have some effects on children. Children affected with chronic illnesses may have activity limitations, discomfort, abnormal growth, and disabilities, which can affect their education (Shi et al., 2022). Chronic diseases affect the elderly too. They cause disabilities, psychological disorders, malnutrition, and mobility problems (GBD 2017 Oral Disorders Collaborators et al., 2017).

Chronic illnesses disrupt people's self-esteem and self-image. Chronically ill patients face significant challenges on higher expenditure seeking medications, isolation and loneliness, hopelessness, anxiety, and depression. They are also affected psychologically by causing persistent sadness, anger, and irritability. Chronic illnesses increase the risk of reducing family and behavioral functioning (Endeshaw and Campbell, 2022).

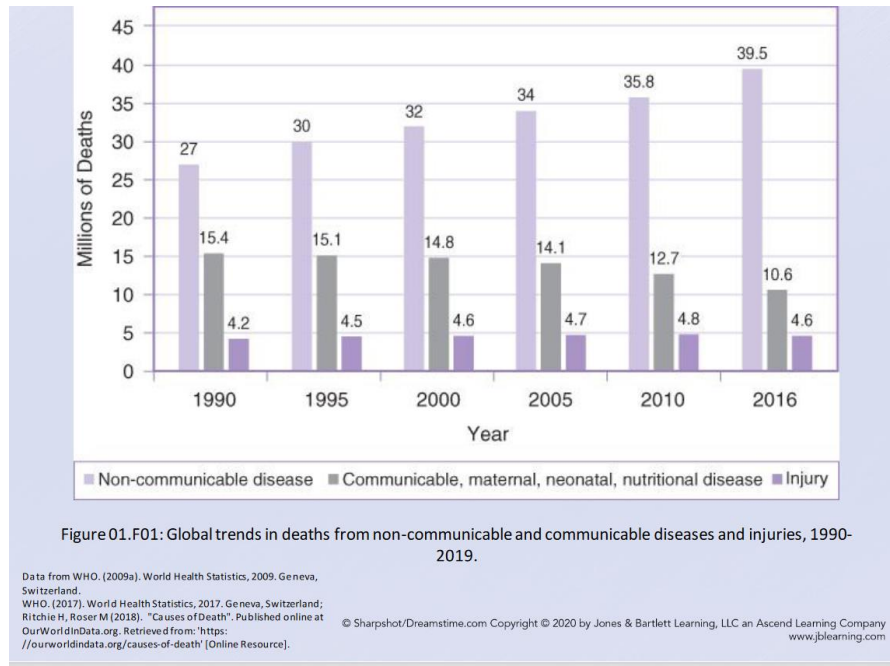


Figure 1 is based on global trends in mortality due to communicable and non-communicable diseases and injuries from 1990-2019

The Global Burden of Disease

The global burden of diseases provides a tool to qualify health loss from risk factors so that health systems can be improved. Cardiovascular disease, cancer, diabetes, and chronic respiratory diseases account for more than 50% of deaths worldwide. The disorders cause deaths of very many people in the world. Chronic diseases are known for causing the global disease burden in the healthcare systems. Non-communicable conditions threaten the healthcare system since they are associated with economic and health burdens. Currently, there is a high population growth marked by high morbidity and mortality cases due to exposure of individuals to diseases, injuries, and risk factors. The global crisis of chronic diseases and the failure of public health to respond effectively to emergencies like COVID-19 swept people’s lives. Even though non-communicable diseases cause health burdens, some communicable diseases like COVID-19 become a health burden globally since they cause deaths and economic challenges when trying to prevent the spread of the health condition (Endeshaw and Campbell, 2022). The impact of the health burden caused by the pandemic is experienced in countries with poor healthcare systems and with highly vulnerable populations.

The disease burden is associated with a low life expectancy with high morbidity and mortality rates. Based on CDC (2022), the global causes of death include health conditions like COVID -19, ischemic heart disease, stroke, chronic obstructive pulmonary disease, lower respiratory infections, neonatal conditions, diabetes mellitus,

kidney conditions and cancers of various types (Flohr and Hay, 2021). In most cases, individuals may suffer from multiple health conditions, especially in the U.S, which causes economic burdens due to polypharmacy. Injuries also contribute to the global disease burden since it causes morbidity and mortality (Steel et al., 2018). Much money and resources are channeled toward improving the health outcomes of individuals with injuries and various health conditions (Shi et al., 2022).

Malnutrition is considered a double disease burden marked by the coexistence of undernutrition alongside overweight or obesity, which is directly linked to other health conditions like diabetes and heart diseases (Popkin, Corvalan, and Grummer-Strawn, 2020). Furthermore, Davis, Oaks, and Engle-Stone (2020) argue that the global disease burden is also caused by nutritional and maternal and neonatal health conditions. The burden of malnutrition affects both developed and underdeveloped countries. Furthermore, there will be an increase in morbidity and mortality cases due to the high prevalence of malnutrition and non-communicable diseases that will affect health outcomes. The increased health burden may also occur due to the increased aging of the world’s population. Older adults are linked to multiple morbidities that reduce their life expectancy. WHO (2022) confirms that women tend to live longer (73 years) than males (68 years). Life expectancy has improved in developing and developed countries like China since they have access to quality healthcare services and reduced the burden of health conditions. Highly developed countries like the US and other European nations have a longer life expectancy (80 years) despite increased chronic health burdens among older adults. However, in countries found in Africa, there are lower life expectancies due to high mortality rates (Jaul & Barron, 2017).

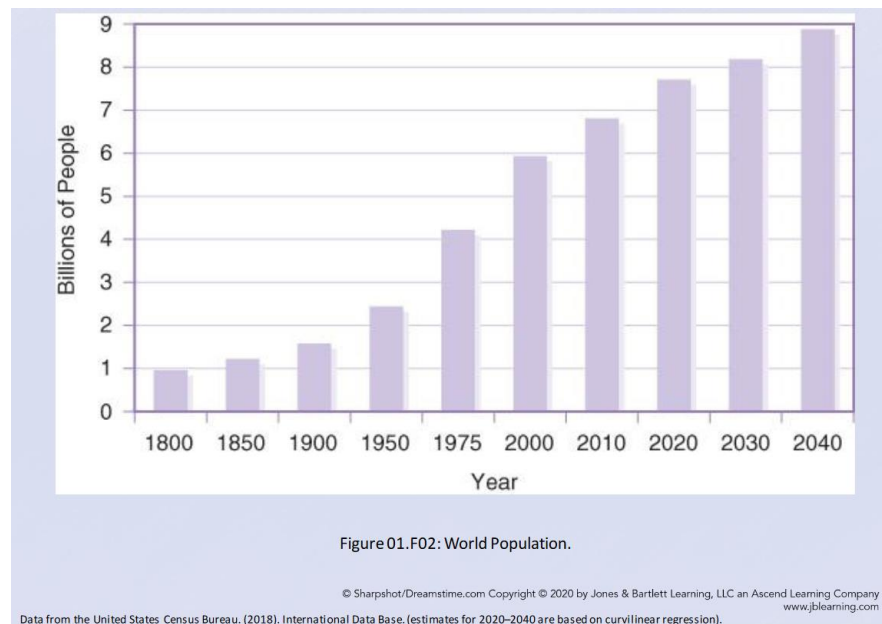


Figure 2 on world’s population Trend

According to WHO (2022), the aging population is growing faster globally since people are currently living longer. It is expected that the number of persons getting older will increase by triple between 2020 to 2050. In high-income countries, there is an increased number of people above the age of sixty, which is expected to triple over the coming years. Old age is marked by a gradual decline in physical and mental capacity, making them vulnerable to health conditions. Aging is always associated with transitions beyond biological changes and retirement. The period is marked by health conditions related to aging, including cataracts, hearing loss, refractive errors, and mental health conditions like dementia. Franceschi et al. (2018) also confirm that old age is also marked by frailty, falls, delirium, and pressure ulcers that affect the quality of health outcomes.

Health challenges occur among older adults due to chronic diseases affecting their productivity and well-being. Older adults have disabilities during their adjusted life years. In most cases, they suffer health conditions due to poor health habits during the previous years that facilitated the occurrence of chronic diseases. However, Hamrick and Stranahan (2020) support some poor health habits like smoking, high alcohol intake, and various health habits which facilitate impaired immune function and anatomic and functional changes. For those underweight, older adults experience issues like osteoarthritis, rheumatoid arthritis, and other musculoskeletal disorders that affect overall health outcomes and well-being. Much money and resources are channeled toward providing care to older adults. Aging is mandatory, and every individual undergoes the biological process; hence the health burden occurs based on the previous lifestyle and the presence of health conditions.

However, despite the increased health burden, various strategies for the global prevention of chronic diseases exist. Chronic health conditions affect the quality of health outcomes among individuals across the population. Arena and Lavie (2021) confirm that it is significant to prevent the high prevalence of chronic health conditions to reduce the morbidity and mortality rates affecting people's lives globally. The strategies essential to avoid health burdens are considering factors that may affect the prevention and control of non-communicable diseases that unknowingly sap people's energies. Based on the CDC (2022), prevention of chronic diseases involves avoiding risky behaviors like poor lifestyle habits that increase the possibility of individuals experiencing health conditions linked to premature deaths and disabilities. Healthy choices reduce the chances of developing chronic diseases, improving the quality of life (Arena and Lavie, 2021). The globe should adopt healthy eating that helps prevent, delay and manage chronic health conditions associated with multiple comorbidities. Regular physical activity is essential in preventing and managing chronic health conditions. Generally, making healthy choices is an important aspect that prevents global health burdens.

References

- Arena, R., & Lavie, C. J. (2021). Moving more and sitting less—now more than ever—an important message for the prevention and treatment of chronic disease and pandemics. *Progress in cardiovascular diseases*, 64, 1.
- Davis, J. N., Oaks, B. M., & Engle-Stone, R. (2020). The double burden of malnutrition: A systematic review of operational definitions. *Current developments in nutrition*, 4(9), nzaa127.
- Endeshaw, Y., & Campbell, K. (2022). Advanced age, comorbidity and the risk of mortality in COVID-19 infection. *Journal of the National Medical Association*, 114(5), 512-517.
- Flohr, C., & Hay, R. (2021). Putting the burden of skin diseases on the global map. *British Journal of Dermatology*, 184(2), 189-190.
- Franceschi, C., Garagnani, P., Morsiani, C., Conte, M., Santoro, A., Grignolio, A., ... & Salvioli, S. (2018). The continuum of aging and age-related diseases: common mechanisms but different rates. *Frontiers in medicine*, 5, 61.
- GBD 2017 Oral Disorders Collaborators, Bernabe, E., Marcenes, W., Hernandez, C. R., Bailey, J., Abreu, L. G., ... & Kassebaum, N. J. (2020). Global, regional, and national levels and trends in burden of oral conditions from 1990 to 2017: a systematic analysis for the global burden of disease 2017 study. *Journal of dental research*, 99(4), 362-373.
- Hamrick, M. W., & Stranahan, A. M. (2020). Metabolic regulation of aging and age-related disease. *Ageing research reviews*, 64, 101175.
- Jaul, E., & Barron, J. (2017). Age-related diseases and clinical and public health implications for the 85 years old and over population. *Frontiers in public health*, 5, 335.
- Popkin, B. M., Corvalan, C., & Grummer-Strawn, L. M. (2020). Dynamics of the double burden of malnutrition and the changing nutrition reality. *The Lancet*, 395(10217), 65-74.
- Shi, T., Vennard, S., Jasiewicz, F., Brogden, R., & Nair, H. (2022). Disease burden estimates of respiratory syncytial virus related acute respiratory infections in adults with comorbidity: a systematic review and meta-analysis. *The Journal of Infectious Diseases*, 226(Supplement_1), S17-S21.
- Steel, N., Ford, J. A., Newton, J. N., Davis, A. C., Vos, T., Naghavi, M., ... & Murray, C. J. (2018). Changes in health in the countries of the UK and 150 English Local Authority areas 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet*, 392(10158), 1647-1661.
- The Lancet (2022). Global Burden of Disease. Retrieved On 28TH October 2022 from <https://www.thelancet.com/gbd>
- WHO (2022). Ageing and Health. Retrieved On 28TH October 2022 From <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>

WHO (2022). Global Health Estimates: Life expectancy and leading causes of death and disability. Retrieved On 28TH October 2022 From <https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates>