



Navigating the World of Increased Medical Resources: More Doctors, More Drugs, Yet More Diseases

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ABSTRACT

This article explores the paradoxical scenario of a world with an abundance of medical professionals and pharmaceutical advancements, but concurrently witnessing a surge in the prevalence of diseases. It delves into the factors contributing to this phenomenon and examines the implications for healthcare systems globally. This study employed a mixed-methods approach, combining historical analysis, case studies, and interviews with key stakeholders, including government officials, scholars, and civil society representatives. Data was collected from a range of primary and secondary sources to ensure a comprehensive and nuanced understanding of the subject. The sample consisted of two hundred respondents. Frequency, percentages, tables, graphs and pie-charts were used to analyze the quantitative and qualitative data obtained. Data was then analyzed manually in some cases and also, a combination of software MS Access and MS Excel. The findings revealed that the paradox of increased diseases despite medical progress is a complex and multifaceted phenomenon that requires careful consideration. While advancements in medical science and technology have undoubtedly led to significant improvements in the prevention, diagnosis, and treatment of various diseases, the overall health landscape is influenced by a combination of factors and the study recommended that the paradox of increased diseases despite medical progress can be attributed to various factors, including lifestyle changes, environmental factors, and the emergence of new health challenges while addressing the paradox of increased diseases requires a holistic and collaborative approach that involves individuals, communities, healthcare professionals, policymakers, and researchers working together to promote health and well-being.

Key words: *Increased Medical Resources, More Diseases, More Doctors, More Drugs, Navigating, and World.*

1.Introduction:

The apparent contradiction of having more doctors, more drugs, and yet experiencing an increase in disease is a complex and multifaceted issue that involves various factors. While advancements in medical science and an increase in healthcare professionals are expected to contribute to better health outcomes, several underlying dynamics may contribute to the observed rise in certain diseases. The initial factor is lifestyle factors. Despite medical advancements, there has been a simultaneous increase in sedentary lifestyles, poor dietary choices, and other unhealthy behaviors. These lifestyle factors play a significant role in the development of chronic diseases such as obesity, diabetes, and cardiovascular diseases (Napier et al, 2014). More so, changes in dietary patterns, increased consumption of processed foods, and decreased physical activity levels contribute to the rise in lifestyle-related diseases. The other factor has to do with environmental factors. Environmental changes, including pollution, exposure to toxins, and climate change, can impact health. The increase in pollutants in the air, water, and soil may contribute to a higher incidence of respiratory diseases, cancers, and other health issues. Changes in the environment can also lead to the spread of infectious diseases, further challenging healthcare systems. Overreliance on Pharmaceuticals is another factor worth noting as the healthcare system in many countries tends to focus on treating symptoms with pharmaceutical interventions rather than addressing root causes. This approach may sometimes result in the over prescription of drugs, contributing to the emergence of antibiotic resistance and other drug-related issues (WHO, 2012). Additionally, some medications may have side effects or unintended consequences, potentially exacerbating health problems or leading to the development of new issues.

Medicalization of normal life is yet another underlying dynamic that may contribute to the observed rise in certain diseases. There's a trend towards medicalizing aspects of normal life, with a focus on preventive medicine and early detection. While this can be beneficial, it may also lead to over diagnosis and overtreatment, exposing individuals to unnecessary medical interventions and potential risks. Social factors, such as income inequality, education, and access to healthcare, significantly impact health outcomes (Boell,2014). Disparities in these social determinants can result in unequal access to medical care and contribute to the persistence of certain diseases in specific populations. Globalization and urbanization have also led to changes in dietary habits, increased stress levels, and the spread of infectious diseases. Urban environments, in particular, may contribute to unhealthy lifestyles and the transmission of diseases. In some cases, healthcare systems may be inadequate or inefficient, leading to suboptimal health outcomes despite the presence of healthcare professionals and medications. Nevertheless, addressing the apparent contradiction requires a holistic approach that goes beyond

medical interventions. Public health efforts should focus on promoting healthy lifestyles, addressing environmental issues, improving access to healthcare, and tackling social determinants of health to create a more comprehensive and effective healthcare system (Riessman, 2008).

The apparent contradiction of having more doctors, more drugs, and yet an increase in disease can be attributed to various complex and interconnected factors. While this is a multifaceted issue and not exhaustive. Some key factors that contribute to this phenomenon include lifestyle factors such as poor diet as hangs in dietary habits, including increased consumption of processed foods, high sugar intake, and low nutritional value, contribute to the rise of chronic diseases while sedentary lifestyle as modern lifestyles often involve less physical activity, leading to an increase in obesity and related health issues. Antibiotic resistance due to overuse and misuse of antibiotics can lead to the development of antibiotic-resistant strains of bacteria, making infections harder to treat (Pipher,2006). Overreliance on pharmaceutical interventions may sometimes lead to a focus on treating symptoms rather than addressing underlying causes. Additionally, the side effects of certain medications can contribute to health problems and as populations age, the prevalence of chronic diseases tends to increase. This demographic shift can contribute to a higher overall burden of disease. Incomplete healthcare access is another factor as well since, disparities in healthcare access and quality can result in certain populations not receiving adequate preventive care, leading to an increase in disease prevalence.

The general overview of the trends and factors influencing the expansion of healthcare infrastructure and pharmaceutical capabilities. The ongoing global health challenges, such as the COVID-19 pandemic, have underscored the importance of robust healthcare infrastructure. Many countries have recognized the need to invest in healthcare systems to better respond to emergencies and provide essential healthcare services (Bakhtin, 2010). The integration of technology in healthcare has played a significant role in expanding infrastructure. Telemedicine, electronic health records (EHRs), and other digital health solutions have improved access to healthcare services and facilitated remote patient monitoring. The trend of urbanization has led to increased demand for healthcare services in urban areas. This has prompted the development of new healthcare facilities, including hospitals, clinics, and diagnostic centers, to cater to the growing population in cities. To curb this phenomenon, many countries are exploring and implementing public-private partnerships (PPP) to enhance healthcare infrastructure. Collaboration with the private sector can bring in additional resources, expertise, and efficiency in managing healthcare facilities. Also, Government policies and initiatives, aimed at improving healthcare accessibility and quality, play a crucial role. Investments in infrastructure are often part of broader healthcare reforms to address gaps in service delivery (Greenhalgh and Wengraf, 2008).

Advances in pharmaceuticals are driven by ongoing research and development efforts. Investment in R&D is crucial for discovering new drugs, developing innovative therapies, and improving existing medications. The pharmaceutical industry has witnessed significant advancements in biotechnology. Biopharmaceuticals, including gene therapies and monoclonal antibodies, have become increasingly important in treating various diseases. Pharmaceutical companies often engage in international collaborations and partnerships to leverage global expertise and resources (Loh,2013). These collaborations can accelerate drug development and improve access to medications worldwide. The trend towards precision medicine, which tailors treatment approaches based on an individual's genetic, environmental, and lifestyle factors, has influenced pharmaceutical research and development. This approach aims to enhance treatment efficacy and reduce adverse effects. Stringent regulatory standards and processes play a critical role in ensuring the safety and efficacy of pharmaceutical products. Continuous efforts to improve and harmonize regulatory frameworks contribute to the growth and capabilities of the pharmaceutical industry (Blommaert,2005). Nevertheless, developments in healthcare infrastructure and pharmaceutical capabilities are dynamic and subject to change based on global and regional circumstances, technological advancements, and public health priorities. For the latest information, it's recommended to refer to recent sources and updates from relevant authorities.

The apparent contradiction of advancing medical technology alongside an increase in the prevalence of diseases is a complex and multifaceted issue. Several factors contribute to this seeming paradox. As medical technology improves, people are living longer, and the global population is aging. Older individuals often face a higher risk of developing chronic diseases, such as cardiovascular diseases, diabetes, and certain types of cancer. The longer people live, the more likely they are to experience age-related health issues. Advances in technology have led to changes in lifestyle and environment, exposing individuals to new health risks. Factors such as pollution, poor dietary habits, sedentary lifestyles, and increased stress can contribute to the rise of various diseases (Charon, 2006). Additionally, the globalization of trade and travel facilitates the spread of infectious diseases. Despite technological advancements, genetic factors continue to play a significant role in the development of diseases. Some individuals may be genetically predisposed to certain conditions, and advancements in genetic research may reveal previously unknown genetic links to diseases.

Improved diagnostic tools and techniques contribute to the identification of diseases at earlier stages, sometimes even before symptoms appear. This can create the illusion of an increase in disease prevalence when, in fact, the diseases were present but undetected in the past. Increased awareness and screening efforts may also lead to higher reported incidence rates. Microorganisms can evolve and develop resistance to medical interventions. The misuse or overuse of antibiotics, for example, has contributed to the emergence of drug-resistant strains of bacteria, making certain infections more challenging to treat (Moat, Lavis and Abelson,2013). Disparities in access to healthcare and resources can result in unequal distribution of the benefits of medical advancements. Some populations may not have the same level of access to preventive measures, early detection, or state-of-the-art treatments, leading to a persistent burden of diseases in certain regions or demographic groups. Some medical interventions may have unintended consequences. For example, certain treatments may have side effects or unforeseen long-term impacts on health. Additionally, the widespread use of certain technologies may contribute to new health challenges, such as the sedentary lifestyle associated with increased screen time and reduced physical activity. While medical technology has undoubtedly made significant strides in understanding, preventing, and treating diseases, various interconnected factors contribute to the persistence or even increase in disease prevalence. Addressing this apparent contradiction requires a comprehensive and interdisciplinary approach, considering not only medical advancements but also environmental, social, and economic factors influencing health outcomes (Lavis, Rottingen and Bosch, 2012).

1.1 Statement of the Problem

In recent decades, the global healthcare landscape has witnessed unprecedented advancements in medical science, with a significant increase in the number of healthcare professionals, pharmaceutical interventions, and cutting-edge medical technologies. Despite these remarkable strides, there has been a perplexing conundrum—an alarming surge in the prevalence of diseases. This paradoxical scenario raises critical questions about the efficacy of current healthcare approaches and necessitates an in-depth investigation into the underlying causes (Boel, 2014). The apparent contradiction between the substantial growth in the medical field, including a rising number of doctors, an influx of pharmaceutical innovations, and the integration of advanced medical technologies, juxtaposed with an escalating global burden of diseases is therefore, a problem. Despite the expansive healthcare infrastructure and resources, the world is witnessing a surge in both communicable and non-communicable diseases, challenging the conventional belief that increased medical capabilities would lead to a proportional decline in illness. Hence, providing insights that can inform future healthcare policies, resource allocation, and the development of more effective strategies for combating the rising tide of diseases in a world of unprecedented medical advancements is a must (WHO, 2012).

1.2 Purpose of the study

The purpose of the study was to explore the paradoxical scenario of a world with an abundance of medical professionals and pharmaceutical advancements, but concurrently witnessing a surge in the prevalence of diseases. The study further delved into the factors contributing to this phenomenon and examined the implications for healthcare systems globally.

1.3. Objectives of the Study

1. To assess the impact of the increased presence of doctors, drugs, and medical technologies on disease prevention and management.
2. To analyze the role of lifestyle changes and environmental factors in the escalating global disease burden.
3. To investigate disparities in access to medical resources and their implications for disease prevalence.
4. To explore potential unintended consequences of widespread medical interventions.
5. To propose alternative public health strategies that address the paradox of increased diseases despite medical progress.

1.4. Theoretical Framework

The study was guided by the Critical Public Health Theory by John Graunt in 1662 while critical theory was defined by Max Horkheimer in 1937. Critical Theory is a social theory that aims to critique and change society as a whole and critical theories attempt to find the underlying assumptions in social life that keep people from fully and truly understanding how the world works. However, Critical Public Health is an approach that challenges the status quo in public health, questions what have come to be defined as problems, and breaks down fundamental assumptions by considering them within the context of the social systems in which they are created. On the other hand, Critical Public Health Theory is a critical psychology of health which focuses on research seeking transformation and change, using participatory action research and performance-based arts approaches (Bakhtin, 2010). Other forms of research seek insight into the sociostructurally processes and power relations that sustain disadvantage. In recent decades, the global healthcare landscape has witnessed unprecedented advancements in medical science, with a significant increase in the number of healthcare professionals, pharmaceutical interventions, and cutting-edge medical technologies. Despite these remarkable strides, there has been a perplexing conundrum—an alarming surge in the prevalence of diseases. Nevertheless, Pharmaceutical research may be the answer as it helps to drive drug discovery, development and testing.

1.5. Significance of the Study

The significance of studying the world in which there are increased numbers of medical doctors, drugs, and medical technologies, despite a rise in the prevalence of diseases, is multifaceted. The study would help governments, doctors, scholars and pharmaceutical personnel in understanding the factors contributing to the persistent increase in diseases despite advancements in medical fields is crucial for public health. This knowledge can help in developing targeted interventions and policies to address the root causes of certain diseases. Also, examining the relationship between the growth in medical resources and disease prevalence helps in assessing the efficiency of healthcare systems. It raises questions about how resources are allocated and whether they are being used effectively to improve overall health outcomes. Further, identifying the reasons behind the continued rise of diseases can inform the development of more effective preventive measures. It highlights the importance of public health education and awareness to promote healthier lifestyles and reduce the burden of preventable diseases. The study can shed light on the challenges associated with rapidly advancing medical technologies. It may uncover issues related to the accessibility, affordability, or appropriateness of these technologies in different populations, leading to a more nuanced understanding of their impact. Despite medical advancements, focusing solely on treatment may not address the complex interplay of social, economic, and environmental factors that contribute to the prevalence of diseases. This study can advocate for a more holistic approach to healthcare that considers these broader determinants. Examining the global landscape can highlight disparities in healthcare access and outcomes. It can draw attention to regions or communities where despite medical advancements, there are persistent challenges in delivering adequate healthcare, thus emphasizing the need for equitable healthcare distribution. The study can explore the rise of new or re-emerging diseases and assess whether current

medical approaches are effectively addressing these challenges. This insight is crucial for preparing healthcare systems to respond to emerging health threat. Findings from the study can influence healthcare policies at local, national, and global levels. Policymakers can use this information to reassess existing strategies, allocate resources more effectively, and implement evidence-based interventions. Moreover, investigating the paradox of increasing medical resources alongside rising disease prevalence is vital for optimizing healthcare systems, improving public health outcomes, and guiding future medical research and policy development.

2.Literature Review

2.1 The Rise of Medical Resources

The growth in the number of healthcare professionals worldwide has been influenced by a variety of factors, including population growth, advancements in medical technology, changing demographics, and evolving healthcare needs. Some key points to consider include population growth. It is important to note that the global population has been steadily increasing over the years, leading to a higher demand for healthcare services. As populations grow, there is a proportional need for more healthcare professionals to provide adequate medical care. Technological advancements in medicine have led to the emergence of new specialties and the need for professionals with specialized skills (Whitty, 2015). This includes fields such as genomics, telemedicine, robotics, and artificial intelligence, which require trained healthcare professionals to operate and manage these technologies. Changing demographics: involves aging populations in many parts of the world which has resulted in an increased demand for healthcare services. Older individuals typically require more medical attention and care, leading to a higher demand for healthcare professionals, particularly in fields like geriatrics. However, there is what can be called evolving Healthcare needs as the healthcare landscape is continuously evolving to address emerging health issues, such as new diseases, pandemics, and public health challenges. This evolution necessitates a diverse and adaptable healthcare workforce capable of responding to these changing needs (Ulin, Robinson and Tolley, 2012).

Various global health initiatives and campaigns have aimed to improve healthcare infrastructure and access in different regions. These initiatives often involve training and deploying healthcare professionals to underserved areas, contributing to the overall growth of the healthcare workforce. In the same vein, many countries have invested in expanding and improving medical education and training programs to produce a larger number of qualified healthcare professionals. This includes increasing the capacity of medical schools, nursing programs, and other allied health professions (Dohan, et al, 2016). The challenge however, is that there has been a global movement of healthcare professionals seeking employment opportunities in different countries. Migration can contribute to the redistribution of healthcare workers, helping address shortages in certain regions while creating surpluses in others. Moreover, the COVID-19 pandemic had highlighted the crucial role of healthcare professionals and has led to increased recognition of the need for a resilient and well-prepared healthcare workforce. The pandemic has prompted some regions to invest in expanding their healthcare capacity and workforce. Nevertheless, while there has been growth in the number of healthcare professionals globally, challenges such as disparities in distribution, shortages in certain specialties or regions, and the ongoing need for ongoing professional development and training persist (Polletta et al, 2011). Efforts to address these challenges are crucial to ensuring that healthcare systems worldwide can meet the diverse and evolving healthcare needs of populations.

Several advancements in medical technology and pharmaceutical research have been notable. There may have been further developments which may not have been covered in this study. However, some highlights include: medical technology such as Telemedicine and Remote Patient Monitoring. These are types of telehealth in which health care providers monitor patients outside the traditional care setting using digital medical devices, such as weight scales, blood pressure monitors, pulse oximeters and blood glucose meters (Cho, Shen and Wilson,2014). The primary distinction between telemedicine services and RPM is that the former uses technologies to engage with patients remotely while telehealth refers to the broader field and the associated technology. The widespread adoption of telemedicine has allowed patients to consult with healthcare professionals remotely. Also, remote patient monitoring devices have become more sophisticated, enabling real-time tracking of vital signs and health metrics. However, RPM relies on transmitting sensitive medical data over the internet. Thus, security is a significant concern as it is vulnerable to cyber-attacks, data breaches and various threats and these threats can compromise patients' integrity, availability and confidentiality. The other advancement is Artificial Intelligence (AI) in Healthcare and AI is being used for diagnostic purposes, analyzing medical images, and predicting patient outcomes. AI provides opportunities to help reduce human error, assist medical professionals and staff, and provide patient services 24/7. As AI tools continue to develop, there is potential to use AI even more in reading medical images, X-rays and scans, diagnosing medical problems and creating treatment plans. These machine learning algorithms are improving disease detection accuracy and aiding in personalized treatment plans. However, an inconsistent data set introduces biases and errors and this can have profound consequences for an AI model trained on such raw data. Biased and inaccurate data can perpetuate healthcare disparities and affect patient outcomes (Talley, 2011).

Another advancement is the Robot-Assisted Surgery. Robotic surgery, also called robot-assisted surgery, allows doctors to perform many types of complex procedures with more precision, flexibility and control than is possible with conventional techniques. Robotic surgery is usually associated with minimally invasive surgery procedures performed through tiny incisions. The da Vinci surgical system gives the surgeon an advanced setoff instruments to use in performing robotic-assisted minimally invasive surgery (Prior, Hughes and Peckham,2015). Robots, however, don't perform surgery, the surgeon performs surgery with da Vinci by using instruments that he or she guides via console. Robotic surgery can be used to treat conditions affecting the heart, digestive system, bladder, prostate and more. Benefits include less blood loss, reduced pain and discomfort, shorter hospital stays, quicker recovery time and return to normal activities. Robotics in surgery have become more prevalent, enhancing precision and reducing invasiveness in procedures. Using this device, surgeons can remotely control robotic systems for certain surgeries (Epstein, Farina and Heidt,2014). The disadvantages of Robotic surgery

are that robot-assisted surgery can cause nerve palsies due to extreme body positioning or direct nerve compression that may occur when using robots. It also takes longer to perform robotic surgery than non-robotic surgery in surgical centres with lower robotic volume or by less experienced surgeons.

3D Printing in Medicine is an advancement in healthcare and 3D printing in medicine can be used to print organ models and these could be helpful for patient education and pre personalized -operative planning for surgeons. Scientists are using a combination of MRI and ultrasound imaging along with 3D-printing technology to help doctors prepare for fetal surgeries. 3D printing technology is being employed to create implants, prosthetics, and even organs for transplantation and this technology has the potential to revolutionize the field of regenerative medicine. There are several advantages of 3D printing in the medicine and healthcare industry as it enables the production of patient-specific anatomical models and medical devices that are tailored to an individual's unique needs (Simopoulos, Bourne and Faergeman,2013). Hence, this personalization allows for more precise treatment and better outcomes. Nevertheless, the disadvantages of 3D construction printing are mainly related to the novelty of the technology and a few challenges are a lack of engineers with the right competencies, local building codes and the transformation of current construction professions. Nanomedicine is also an advancement in healthcare and it is the application of nanotechnology to achieve innovation in healthcare. Nanomedicine uses the properties developed by a material at its nanometric scale 10-9m which often differ in terms of physics, chemistry or biology from the same material at a bigger scale (Kneafsey et al.,2013). Nanometric aims to identify diseases at an early stage at cellular level [23,24]. Nanotechnology is being applied to drug delivery systems, enabling more targeted and efficient treatment and further, nanoparticles are designed to deliver drugs directly to diseased cells, minimizing side effects. Nanotechnology is an emerging branch of science for designing tools and devices of size 1 to 100nm with specific function at the cellular, atomic and molecular levels while the concept of employing nanotechnology in biomedical research and clinical practices is best known as nanomedicine. Nanomedicine, in terms of disease diagnosis, treatment and prevention offers numerous advantages but it also has some setbacks such as toxicity to brain, causing lung inflammation, cardiac problems price and difficulties with regulation, ethical questions and a lack of knowledge

2.2 Pharmaceutical Research

What is Pharmaceutical Research? Pharmaceutical R & D refers to the pharmaceutical research and development of new medicines. The process begins with understanding the disease and selecting a target, usually, a receptor site on cell that can potentially be affected by a drug molecule. Pharmacy research also focusses on examining how and why people access pharmacy services, how much care costs and what happens to patients as well. In pharmaceutical research, a pharmaceutical scientist performs research to drive drug discovery, development and testing (White and Blackmore,2016). Penn Medicine is home to the breakthrough messenger ribonucleic acid (mRNA) technology and the development and successful deployment of mRNA vaccines, such as those for COVID-19 from Moderna and Pfizer-BioNTech, represent a groundbreaking achievement. mRNA stands for messenger RiboNucleic Acid and is the single stranded molecule that carries the instruction to make proteins. This technology has the potential to revolutionize vaccine development for various diseases. CRISPR Gene Editing is another technology in Pharmaceutical research CRISPR-Cas9 technology is advancing gene editing capabilities, offering potential treatments for genetic disorders as allows scientists to quickly create cell and animal models, which researchers can use to accelerate research into disease such as cancer and mental illness. In addition, CRISPR is now being developed as a rapid diagnostic. Also, ongoing research explores the ethical and practical implications of gene editing in humans (Zevnik, 2014).

Immunotherapy is a treatment that uses a person's own immune system to fight cancer and immunotherapy can boost or change how the immune system works so that it can find and attack cancer cells. Immunotherapy has emerged as a powerful approach in cancer treatment, harnessing the body's immune system to target and destroy cancer cells. CAR-T cell therapy, a form of immunotherapy, has shown promising results in certain types of cancers. Drug Repurposing and Personalized Medicine is also a technology brought about by pharmaceutical research and advances in genomics have led to the development of personalized medicine tailored to an individual's genetic makeup (Mathews,2012). Drug repurposing involves finding new uses for existing drugs, expediting the drug development process. There should therefore be continuous manufacturing of drugs and Pharmaceutical companies are exploring continuous manufacturing processes, which offer more efficiency and flexibility compared to traditional batch processing. Nevertheless, these advancements collectively contribute to improving patient outcomes, reducing treatment side effects, and enhancing the overall efficiency of healthcare delivery. It's important to stay updated with the latest literature and news for the most recent developments in these fields.

2.3 Changing Disease Landscape

The general trends and factors that contribute to the increasing evidence of diseases globally based on historical patterns include: Globalization and Urbanization as increased international travel and the concentration of people in urban areas facilitate the rapid spread of infectious diseases. Dense populations and close proximity can lead to faster transmission. Antimicrobial Resistance (AMR) also contribute to disease increase as the misuse and overuse of antibiotics and other antimicrobial agents contribute to the development of resistant strains of bacteria, making it more difficult to treat infections (Aridiacono and Di Martina,2016). Changes in climate patterns can affect the distribution of vectors (such as mosquitoes carrying diseases like malaria or dengue) and alter the geographic range of infectious diseases. In addition, new and re-emerging diseases, often originating from wildlife, can pose significant global health threats. Examples include Ebola, Zika, and coronaviruses. Disparities in healthcare access, socioeconomic factors, and education contribute to the uneven distribution of diseases. Regions with limited resources may struggle to control and manage disease outbreaks. Vector-borne diseases is another factor contributing to increase in diseases since the spread of diseases by vectors, such as mosquitoes or ticks, is influenced by various factors, including climate change, deforestation, and human movement. There are what are known as Zoonotic diseases which are diseases that can be transmitted between animals and humans (zoonoses) and are a significant concern. Changes in land use, wildlife trade, and human-animal interactions can increase the risk of zoonotic spillover events. Last but not the least is global connectivity that is, increased connectivity through trade, travel, and migration means that diseases can spread more rapidly across borders (Brandan,2016).

This study may not have real-time data on disease trends. However, it provides information on certain diseases that were identified as emerging or on the rise based on trends observed. The situation may have evolved but, some diseases that were of concern include antibiotic-resistant infections. The rise of antibiotic-resistant bacteria, often referred to as superbugs, has been a global health concern. Infections that were once easily treatable with antibiotics become more challenging to manage (Davies,2016). Chronic respiratory diseases are also on the increase and conditions like chronic obstructive pulmonary disease (COPD) and asthma have been on the rise, potentially linked to factors such as air pollution, smoking, and environmental exposures. The prevalence of type 2 diabetes has been increasing worldwide, largely due to lifestyle factors such as poor diet, sedentary behavior, and obesity. Also, various autoimmune diseases, where the immune system attacks the body's own cells, have been reported to be on the rise. Examples include rheumatoid arthritis and lupus. Further, certain neurodegenerative disorders, such as Alzheimer's disease and Parkinson's disease, have been on the rise, potentially due to aging populations and changes in lifestyle. The incidence of mental health disorders, including depression, anxiety, and other mood disorders, has been increasing. This could be influenced by a combination of genetic, environmental, and societal factors. Conditions like Crohn's disease and ulcerative colitis, which are types of inflammatory bowel disease (IBD), have shown an increase in incidence. Nevertheless, disease trends can vary by region, and factors such as population growth, urbanization, environmental changes, and global travel can influence the spread and emergence of diseases (Bauer, Mc Adams and Pals,2008). Regular updates from health organizations and research institutions are essential to stay informed about current trends in disease prevalence and incidence.

2.4 Factors Contributing to the Paradox of more Doctors, More Drugs Yet More Diseases

Lifestyle changes can have a significant impact on health and well-being. Adopting healthy habits can prevent various diseases, improve mental health, and enhance overall quality of life. Several lifestyle changes and their potential impacts on health include, healthy eating whose impact is that a well-balanced diet provides essential nutrients, helps maintain a healthy weight, and reduces the risk of chronic diseases such as heart disease, diabetes, and certain cancers. The other factor is regular physical activity and its impact is that regular exercise helps maintain a healthy weight, strengthens muscles and bones, improves cardiovascular health, boosts mood, and reduces the risk of chronic diseases (Sayer, 2011). Adequate sleep is another factor and its impact on prevention of disease is that quality sleep is crucial for physical and mental health. It supports immune function, regulates mood, and helps prevent conditions like obesity and diabetes. Stress management is a crucial habit in disease prevention as chronic stress can contribute to various health issues, including heart disease, digestive problems, and mental health disorders. Stress management techniques such as meditation, yoga, and deep breathing can be beneficial. Limiting alcohol consumption is a lifestyle change that is necessary for enhancing overall quality life as excessive alcohol intake can lead to liver disease, cardiovascular problems, and mental health issues. Moderation or abstaining from alcohol can have positive effects on overall health (Achotegui,2015).

Another lifestyle worth mentioning is tobacco cessation since quitting smoking or using tobacco products significantly reduces the risk of lung cancer, heart disease, and respiratory issues. It also improves overall respiratory health. Also, staying hydrated is essential for various bodily functions, including digestion, temperature regulation, and nutrient transport. Dehydration can lead to fatigue, headaches, and kidney problems. Social connections are important because maintaining strong social connections and having a supportive network can positively affect mental health and may even contribute to a longer lifespan (Beneduce, 2015). Limiting screen time is a good lifestyle as excessive screen time, especially on devices like smartphones and computers, can impact sleep quality and contribute to sedentary behavior. Setting limits can improve overall well-being. Regular medical check-ups and screenings can help detect potential health issues early, allowing for timely intervention and prevention. Mindfulness and mental health practices: such as mindfulness meditation, yoga, and therapy can improve mental health, reduce anxiety and depression, and enhance overall emotional well-being. Nevertheless, these lifestyle changes are interconnected, and adopting a holistic approach is often more effective than focusing on individual factors (Ajuebos, Cometto and Akl, 2018). Additionally, individual responses to lifestyle changes may vary, so it's advisable to consult with healthcare professionals for personalized advice and guidance.

Environmental factors play a significant role in the emergence of new diseases, and understanding these factors is crucial for preventing and managing outbreaks. Several environmental elements contribute to the emergence of diseases, and their interactions with other factors such as human behavior, pathogens, and host populations can create conditions favorable for the spread of infectious diseases. Some key environmental factors include: Climate change because changes in climate patterns, including temperature, precipitation, and extreme weather events, can influence the distribution and behavior of disease vectors (such as mosquitoes and ticks) and the pathogens they carry. For example, warmer temperatures may expand the geographical range of certain vectors, allowing diseases like malaria or dengue fever to spread to new areas. Deforestation and land use changes is another environmental factor that play a significant role in the emergence of new diseases as alterations in land use, such as deforestation and urbanization, can disrupt ecosystems and lead to the displacement of wildlife (Langer,2015). This can bring humans into closer contact with animals and increase the risk of zoonotic diseases (diseases that can be transmitted from animals to humans). For instance, the clearing of forests may force wildlife to migrate, bringing them into closer proximity to human populations. Globalization and urbanization: is quite significant as well since increased global travel and urbanization can facilitate the rapid spread of infectious diseases. Urban areas with high population density provide favorable conditions for the transmission of diseases due to increased human-to-human contact.

Water management and sanitation is also a significant environmental factor that play a role in the emergence of new diseases as poor water quality and inadequate sanitation can contribute to the transmission of waterborne diseases. Contaminated water sources can be a breeding ground for pathogens, leading to diseases like cholera and dysentery. Environmental factors, including the widespread use of antibiotics and antivirals in agriculture and healthcare, can contribute to the development of drug-resistant strains of pathogens. This poses a significant challenge in the treatment and control of infectious diseases (Napier et al,2014). Also, changes in the ecology of disease vectors, such as mosquitoes and ticks, can impact disease transmission.

Factors like stagnant water, temperature, and humidity can influence the breeding and survival of these vectors, affecting the prevalence of diseases like malaria and Lyme disease. Another factor worth mentioning is biodiversity loss since loss of biodiversity can disrupt ecological balances and impact disease dynamics. Healthy ecosystems often have checks and balances that limit the spread of certain diseases, and the loss of biodiversity can upset these natural controls. Air quality is an environmental factor as well that play a significant role in the emergence of new diseases since airborne transmission of diseases is influenced by air quality. Poor air quality, often associated with industrial activities and urbanization, can exacerbate respiratory diseases and contribute to the spread of infectious agents (WHO, 2012). Nevertheless, understanding and monitoring these environmental factors are essential for predicting and mitigating the emergence of new diseases. Integrated approaches that consider ecological, social, and economic dimensions are crucial for addressing the complex interactions that contribute to disease emergence and spread.

Medical interventions, while often designed to improve health and well-being, can have unintended consequences. These consequences may arise due to various factors, including the complexity of the human body, the unpredictability of biological systems, and the interplay of different variables. However, some potential unintended consequences associated with medical interventions include: side effects and adverse reactions because medications and medical treatments can lead to side effects that may vary in severity. Sometimes, these side effects are not apparent during clinical trials due to the limited sample size or the exclusion of certain patient groups (Loh, 2013). Another potential unintended consequence associated with medical intervention is resistance and tolerance as the overuse or misuse of medications, particularly antibiotics, can contribute to the development of drug resistance. Bacteria and viruses may evolve to withstand the effects of the drugs, rendering them less effective over time. The other factor includes complications and secondary conditions as surgeries and medical procedures may introduce new complications or exacerbate existing conditions. For example, surgery-related infections or the formation of blood clots are potential risks associated with various surgical interventions. Psychological and emotional effects is as well an intended consequence associated with medical interventions since some medical interventions, especially those involving chronic conditions or mental health, may have psychological consequences. For instance, a patient undergoing a life-altering surgery may experience anxiety, depression, or post-traumatic stress (Boell, 2014).

Financial burden: is unintended consequence as medical interventions can be expensive, and the financial burden of treatments may lead to stress and difficulties for patients. This can affect their overall well-being and quality of life. Over diagnosis and overtreatment is unintended consequence since aggressive screening or diagnostic procedures may lead to the detection and treatment of conditions that may not have caused harm. This can result in unnecessary interventions, exposing individuals to the risks associated with treatments without corresponding benefits (Moat, Lavis and Abelson,2013). Ethical Concerns are crucial. In some medical interventions may raise ethical questions, such as gene editing or the use of emerging technologies like CRISPR. Ethical dilemmas may include issues related to consent, privacy, and the potential for unintended consequences in future generations. Also, the use of vaccines and antibiotics, while crucial in preventing and treating diseases, can influence the prevalence and patterns of certain illnesses. For instance, the overuse of antibiotics may alter the microbiome and contribute to autoimmune conditions. Further, the long-term effects of certain medical interventions may not be fully understood at the time of implementation. This is particularly relevant for emerging technologies and treatments with limited historical data. Social and cultural impacts have unintended consequences since medical interventions can have broader social and cultural impacts. For example, the widespread use of certain pharmaceuticals may influence societal norms and expectations related to health and well-being. More so, it is important for healthcare professionals, researchers, and policymakers to carefully consider these potential unintended consequences and work towards minimizing risks while maximizing the benefits of medical interventions (Prior, Hughes and Peckham,2015). Additionally, ongoing monitoring, research, and open communication with patients can help identify and address unforeseen issues as they arise.

2.5. Pharmaceutical Industry Dynamics:

The pharmaceutical industry's focus on profit-driven research and treatment rather than prevention is a complex and multifaceted issue. Several factors contribute to this trend, and it's essential to consider both the industry's perspective and the broader healthcare system. Some key aspects to consider include: profit motive: due to high research and development costs. Developing new drugs is an expensive and time-consuming process. Pharmaceutical companies often invest significant resources in research and development (R&D), and they may prioritize projects that are more likely to yield profitable treatments rather than preventive measures (Whitty,2015). The other is financial incentives as the business model of pharmaceutical companies is built on selling drugs. Treatments that require ongoing use generate more revenue than one-time preventive interventions. This can create a financial disincentive for companies to invest heavily in preventive measures. Regulatory Environment also contributes to this due to approval processes since regulatory agencies often have well-established processes for approving new drugs. These processes may favor treatments over preventive measures, as demonstrating the efficacy of prevention may require longer and more complex studies. Nevertheless, the patent system, which grants exclusive rights to companies for a certain period, incentivizes the development of new treatments. Preventive measures may not be as amenable to patent protection, making them less attractive from a business perspective (Talley, 2011).

Another factor which contributes to this trend in the pharmaceutical industry dynamics is healthcare system dynamics: Healthcare systems and insurance often reimburse providers for treating illnesses rather than preventing them. This can influence both pharmaceutical companies and healthcare providers to focus on treatments. Further, prevention strategies may take years or decades to demonstrate their effectiveness, whereas treatments can show results more quickly (Ulin, Robinson and Tolley, 2012). Companies operating in a competitive market may prioritize short-term gains. Consumer demand such as patient expectations: is as well a factor to be considered since patients often seek immediate relief from symptoms and may be more willing to pay for treatments than invest in preventive measures that yield benefits over the long term. Pharmaceutical companies may find it easier to market and sell treatments, especially when they can directly target symptoms that consumers want alleviated. Global health challenges usually focus on urgent issues. Global health challenges, such as infectious diseases and emerging pandemics, may necessitate a focus on immediate treatment rather than long-term

prevention. Ethical considerations in access to medicines should be taken into consideration as well. There are ethical concerns regarding access to medicines, and pharmaceutical companies face scrutiny for pricing strategies. This can affect the development and distribution of preventive measures (Cho, Shen and Wilson,2014). Nevertheless, addressing the imbalance between profit-driven treatment and preventive measures requires collaboration among pharmaceutical companies, regulatory bodies, healthcare providers, and policymakers. Shifting incentives, improving reimbursement models, and fostering a culture of prevention could contribute to a more balanced approach in the industry. Additionally, public awareness and advocacy for preventive healthcare can play a crucial role in influencing industry priorities.

Antibiotic resistance is a significant global health challenge that poses a threat to the effective treatment of bacterial infections. Some key challenges associated with antibiotic resistance and the need for new therapeutic approaches include: overuse and misuse of antibiotics. Over prescription and inappropriate use of antibiotics in both human and animal healthcare contribute to the development of resistance. Patients may not complete prescribed antibiotic courses, leading to incomplete eradication of bacteria and potential resistance. On the other hand, bacteria can evolve rapidly, and the overuse of antibiotics creates a selection pressure favoring the survival of resistant strains. These strains can then multiply and spread, making previously treatable infections more challenging to manage (Dohan et al,2016). Another challenge is lack of new antibiotics since the development of new antibiotics has lagged behind the emergence of antibiotic-resistant bacteria. Pharmaceutical companies face economic challenges in bringing new antibiotics to market due to the high costs of development, limited market potential, and the risk of resistance developing shortly after introduction. Global spread of resistant strains is also crucial since resistant bacteria can spread globally through travel and trade. A resistant strain that emerges in one region can quickly become a threat in other parts of the world, making it a complex and interconnected issue (Polletta et al,2011).

Antibiotic resistance is a significant global health challenge that poses a threat to the effective treatment of bacterial infections due also to limited incentives for research and development. The traditional model of antibiotic development faces challenges, as the short treatment duration and the goal of limiting use for resistance mitigation conflict with the economic model of drug development. There is a lack of sufficient economic incentives for pharmaceutical companies to invest in the development of new antibiotics. Complexity of bacterial biofilms is another factor contributing to antibiotic resistance as many chronic and recurrent infections involve bacterial biofilms, which are highly resistant to antibiotics. Biofilms are communities of bacteria encased in a protective matrix, making it difficult for antibiotics to penetrate and eliminate the infection (Langer,2015). Cross-resistance and co-resistance is another factor contributing to antibiotic resistance as some antibiotics share resistance mechanisms, meaning that resistance to one antibiotic can confer resistance to others. This cross-resistance complicates treatment options and limits the effectiveness of available antibiotics. Therefore, there is need for new therapeutic approaches and currently, alternative therapeutic approaches, such as phage therapy, immunotherapy, and novel antimicrobial agents, are being explored. These approaches aim to provide new options for treating infections, either by targeting specific pathogens or by enhancing the body's natural immune response (Epstein, Farina and Heidt,2014). Addressing antibiotic resistance requires international collaboration and surveillance to monitor the spread of resistant strains, share information, and coordinate efforts to combat this global threat. In addition, addressing antibiotic resistance requires a multifaceted approach that includes responsible antibiotic use, research and development of new antibiotics, alternative therapeutic approaches, and global collaboration to mitigate the impact of resistance on public health.

2.6 GMO Foods and their Effects

Genetically Modified Organisms (GMOs) are organisms whose genetic material has been altered in a way that does not occur naturally through mating or natural recombination. In the context of food, GMOs are often plants or animals that have had their DNA modified through genetic engineering techniques. The primary goal of genetically modifying organisms is to introduce specific traits or characteristics that are not naturally present in the organism. For crops, these modifications might include resistance to pests, tolerance to herbicides, improved nutritional content, or enhanced shelf life. Genetic modification can be done by introducing genes from other organisms or by modifying the organism's existing genetic material. It is important to note that GMOs have been a subject of considerable debate, with concerns raised about potential environmental and health impacts (Achtegui,2015). Advocates argue that GMOs can contribute to increased crop yields, reduced use of chemical pesticides, and improved nutritional content. Critics, on the other hand, express concerns about unintended environmental consequences, the potential for allergenicity, and the consolidation of seed and agricultural technology in the hands of a few large companies. Regulations regarding the cultivation and sale of GMOs vary by country, and some regions have implemented strict guidelines for the approval and labeling of genetically modified foods. As of my last knowledge update in January 2022, the status of GMO regulations may have evolved, so it's advisable to check the most recent sources for the latest information (Langer et al,2015).

The effects of genetically modified organisms (GMOs) on the immune system have been a subject of scientific research and debate. It's important to note that the term "GMOs" encompasses a wide range of organisms and crops, each with its own unique genetic modifications. As of my last knowledge update in January 2022, there wasn't conclusive evidence suggesting that GMOs, in general, have a significant negative impact on the immune system. The safety of GMOs for human consumption is a complex and evolving topic (Sayer,2011). Regulatory agencies in various countries, such as the U.S. Food and Drug Administration (FDA) and the European Food Safety Authority (EFSA), evaluate the safety of GMOs before they are approved for use in food production. Generally, these assessments include considerations for potential allergen city and toxicity. Several studies have investigated the effects of specific GMOs on the immune system, and the results have been mixed. Some studies have suggested no significant impact on the immune system, while others have reported potential concerns. It's essential to consider the specific modification and the particular crop or organism in question, as effects can vary. Critics argue that the potential long-term effects of GMO consumption on human health, including the immune system, need more thorough investigation. Proponents, on the other hand, contend that GMOs are rigorously tested and that the current scientific consensus supports their safety. Nevertheless, it is worth noting that opinions on this matter can be influenced by various factors, including individual beliefs, cultural perspectives,

and political considerations. Scientific understanding of GMOs and their effects on health may have evolved since my last update, so I recommend checking more recent and reliable sources for the latest information on this topic (Simopoulos, Bourne and Faergeman,20113).

2.7 Drugs and their Uses

"Drugs" refer to substances that have a physiological effect when introduced into the body. These substances can be classified into various categories based on their effects, mechanisms of action, and legal status. Drugs can be used for medicinal purposes to treat or manage health conditions, or they can be used recreationally for their psychoactive effects. "Drug use" generally refers to the consumption of drugs for medical, recreational, or other non-medical purposes. When used responsibly and as prescribed by a healthcare professional, drugs can have therapeutic benefits and contribute to improved health and well-being. In medical contexts, drug use is carefully regulated to ensure safety and effectiveness. "Drug abuse" or "substance abuse" refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs. It involves the excessive or inappropriate consumption of substances, leading to negative consequences on an individual's physical and mental health, relationships, and overall well-being. Drug abuse is often characterized by a lack of control over drug use, continued use despite negative consequences, and sometimes a physical or psychological dependence on the substance (Brangan,2016).

There are four main types of drugs. First we have medicinal drugs and these drugs are prescribed by healthcare professionals to treat or manage medical conditions. Examples include antibiotics, pain relievers, antidepressants, and antihypertensive drugs. Secondly, there are recreational drugs and these drugs are used for pleasurable effects rather than medical reasons. Examples include alcohol, cannabis, cocaine, and ecstasy. The third category are the performance-enhancing drugs and these are substances used to improve physical or cognitive performance. In sports, athletes may use substances like steroids or stimulants to enhance their abilities. The fourth category are the illicit drugs and as the name suggests, these are illegal substances, and their use is prohibited by law (Mathews,2012). Examples include heroin, methamphetamine, and certain hallucinogens. Nevertheless, it is important to note that not all drug use is considered abuse. Responsible and controlled use of certain substances, particularly those prescribed by healthcare professionals, can be a crucial aspect of medical treatment. However, misuse or abuse of drugs can have serious consequences for individual health and society as a whole.

Vaccines on the other hand, are biological substances that stimulate the immune system to recognize and fight against specific pathogens, such as bacteria or viruses. They are designed to provide immunity to infectious diseases without causing the disease itself. Vaccines typically contain weakened or inactivated forms of the pathogens, or parts of the pathogens (like proteins), which trigger the immune system to produce an immune response. This immune response results in the production of antibodies and memory cells, providing protection against future infections by the targeted pathogen (Zevnik,2014). Vaccination is a crucial public health measure that has been instrumental in preventing and controlling the spread of many infectious diseases. Some key points regarding vaccines and their effects on children and adults include: prevention of diseases since vaccines are highly effective in preventing various infectious diseases, including measles, mumps, rubella, polio, hepatitis B, influenza, and many others. The other key point regarding vaccines is herd immunity as vaccination not only protects individuals but also contributes to the concept of herd immunity. When a significant portion of the population is immune to a disease, it helps prevent the spread of the disease, protecting those who cannot be vaccinated, such as individuals with certain medical conditions or allergies. In many countries, a schedule of recommended vaccinations is established for children to receive at specific ages. This schedule helps ensure that children are protected against a range of diseases early in life. (Achtotegui,2015)

While vaccines are generally safe and well-tolerated, like any medical intervention, they can have side effects. Common side effects are usually mild and temporary, such as soreness at the injection site or a low-grade fever. Serious side effects are rare. Vaccination is not limited to childhood; adults also benefit from vaccines. Some vaccines, like influenza and tetanus, require booster shots throughout life. Others, such as the shingles vaccine, are recommended for specific age groups. Also, the development of vaccines is a rigorous process involving extensive testing in laboratories and clinical trials to ensure safety and effectiveness (Napieretal,2014). Regulatory agencies, such as the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA), evaluate and approve vaccines before they are made available to the public. Further, vaccination has been instrumental in reducing the global burden of certain diseases. Programs such as the Expanded Program on Immunization (EPI) by the World Health Organization (WHO) aim to increase access to vaccines in developing countries. Nevertheless, it is important for individuals to consult with healthcare professionals to understand the specific vaccination recommendations for their age, health status, and regional disease risks. Public health authorities often provide guidance on recommended vaccines and vaccination schedules (Riessman,2008).

2.8 Healthcare System Challenges:

The strain on healthcare systems due to the increasing disease burden is a complex and multifaceted challenge that many countries around the world are facing. Several factors contribute to this strain, and understanding them is crucial for developing effective strategies to address the issue. Some key aspects to consider: the growing aging population and as populations age, there is a higher prevalence of chronic diseases and conditions associated with aging. These often require ongoing medical care and can place a significant burden on healthcare systems. The other challenge contributing to healthcare system challenge is the rise in non-communicable diseases (NCDs) as non-communicable diseases such as cardiovascular diseases, diabetes, and certain cancers are on the rise globally. These conditions often necessitate long-term treatment and management, leading to increased demand for healthcare services (Loh,2013). Pandemics and emerging diseases also contribute to these challenges since the outbreaks of infectious diseases, such as the COVID-19 pandemic, can overwhelm healthcare systems, straining resources and personnel. The sudden and widespread nature of pandemics poses unique challenges in terms of preparedness and response. Technological advances and increased expectations is another challenge as advances in medical

technology and treatments have led to increased life expectancy, but they also come with higher costs. Additionally, there is a growing expectation for access to cutting-edge medical interventions, putting pressure on healthcare systems to provide these services (Prior, Hughes and Peckham,2015).

Lifestyle factors are crucial since unhealthy lifestyles, including poor diet, lack of physical activity, and substance abuse, contribute to the prevalence of chronic diseases. Addressing these factors requires not only healthcare interventions but also broader public health initiatives. Disparities in access to healthcare services can exacerbate the strain on systems. In many cases, vulnerable populations may face barriers to accessing timely and appropriate care, leading to worse health outcomes. Also, in some regions, especially in the developing countries, there may be insufficient healthcare infrastructure and a shortage of skilled healthcare professionals. This can limit the capacity of healthcare systems to meet the growing demand for services (Whitty,2015). Further, the increasing cost of healthcare, driven by factors such as rising drug prices and the expense of advanced medical technologies, poses financial challenges for both individuals and healthcare systems. This can result in limited resources for preventive measures and long-term health management. Nevertheless, addressing the strain on healthcare systems requires a comprehensive and multi-pronged approach. This includes investing in preventive care, promoting healthy lifestyles, improving healthcare infrastructure, ensuring equitable access to services, and exploring innovative solutions to enhance efficiency in healthcare delivery. Policymakers, healthcare providers, and communities all play crucial roles in developing and implementing strategies to mitigate the impact of the increasing disease burden on healthcare systems (Lavis,2012).

Managing a higher number of patients in healthcare can have significant economic implications, influencing various aspects of the healthcare system, including costs, resource allocation, efficiency, and overall economic impact. Some key economic considerations include: costs of care which may be direct or indirect. On direct costs, treating a higher number of patients requires more healthcare resources, such as personnel, medical supplies, and facilities. This can lead to increased direct costs for hospitals, clinics, and healthcare providers. As regards indirect costs, managing a larger patient load may result in indirect costs associated with administrative tasks, paperwork, and coordination of care. These costs can contribute to the overall economic burden. Significant economic implications arise as regards resource allocation in both human resources and facilities and equipment (Talley,2011). As regards human resources, a higher patient volume may necessitate more healthcare professionals, potentially leading to increased labor costs. Adequate staffing levels are crucial to maintaining quality care and preventing burnout among healthcare workers. In terms of facilities and equipment, managing a larger patient population may require additional investment in facilities, equipment, and technology to accommodate the increased demand for services. Efficiency and productivity, also includes operational efficiency and productivity gains. Operational Efficiency: includes efficient healthcare delivery is essential for managing a higher number of patients. Streamlining processes, implementing technology solutions, and optimizing workflows can enhance operational efficiency, potentially reducing costs and improving patient outcomes (Dohan et al,2016). While, productivity gains involve effective management strategies, such as the use of telemedicine, remote monitoring, and data analytics, can contribute to productivity gains. These technologies may improve patient management without a proportional increase in costs.

Other significant economic implications, influencing various aspects of the healthcare system, include reimbursement and revenue such as reimbursement model and financial sustainability. On reimbursement models, the economic impact depends on the reimbursement models in place. Fee-for-service models may lead to increased revenue with more patients, while value-based care models focus on outcomes and cost-effectiveness. Financial sustainability on the other hand, involves balancing patient volume with financial sustainability is critical. An influx of patients may strain finances if not accompanied by appropriate reimbursement and cost-control measures (Cho, Shen and Wilson,2014). Also, managing a higher number of patients may involve implementing preventive measures to reduce the overall burden on the healthcare system. Proactive public health strategies can lead to cost savings by preventing the development of chronic conditions or the spread of infectious diseases. Implications also involve economic impact on patients. Out-of-pocket expenses due to a higher patient load can impact individual patients by potentially increasing out-of-pocket expenses. This may be influenced by insurance coverage, copayments, and deductibles. The economic implications extend to patients' ability to access timely and affordable care. Long wait times and crowded healthcare facilities may affect patient outcomes and satisfaction (Ulin, Robinson and Tolley,2012). Moreover, managing a higher number of patients in healthcare involves a complex interplay of costs, resource allocation, efficiency, and overall economic impact. Strategic planning, technology adoption, and policy interventions are essential to address these economic challenges and ensure the sustainability of healthcare systems.

2.9 Future Prospects and Solutions:

A holistic and preventive approach to healthcare involves addressing not just the symptoms of illness but also the underlying factors that contribute to health and well-being. Several strategies that can contribute to a more holistic and preventive healthcare model include: health education and promotion and there is need to implement comprehensive health education programs in schools, workplaces, and communities to raise awareness about healthy lifestyles, nutrition, exercise, and mental well-being. Governments through the Ministries of Health should encourage preventive screenings and regular health check-ups. Should promote healthy lifestyle choices, including a balanced diet, regular physical activity, stress management, and adequate sleep as well as provide incentives for individuals to adopt healthier behaviors, such as discounts on health insurance premiums for those who engage in preventive activities (Talley, 2011). As regards community engagement, governments should foster community involvement in health initiatives, creating support networks and social environments that encourage healthy living and also, develop community-based programs that address specific health concerns prevalent in the local population. Early intervention programs should be implemented for early detection programs for common health issues, such as cancer, diabetes, and cardiovascular diseases as well as provide easy access to preventive services, vaccinations, and screenings to catch potential health issues before they become severe. Should further utilize technology for remote monitoring and management of chronic conditions as well as develop apps and wearable devices that track and promote healthy behaviors, providing individuals with real-time feedback and support (Langer, et al,2015).

Mind-body connection involves integrating mental health services into primary care settings and promoting mindfulness and stress reduction techniques as part of routine healthcare, recognizing the impact of mental health on overall well-being. There should be nutritional support which may involve encouraging the adoption of a plant-based diet and reduce reliance on processed foods as well as providing nutrition counseling and support, especially for individuals with chronic conditions. Should address environmental factors that impact health, such as air and water quality, and promote policies that support a clean and healthy environment and encourage sustainable and health-conscious urban planning (Epstein, Farina and Heidt,2014). Healthcare professionals to take a holistic approach should be trained, considering physical, mental, and social factors in diagnosis and treatment while interdisciplinary collaboration among healthcare providers to address the multifaceted nature of health should be encouraged. NGOs and other stake holders should advocate for policies that support preventive healthcare measures, such as subsidies for healthy food, restrictions on advertising unhealthy products, and workplace wellness programs. Governments should as well establish and enforce regulations that promote a healthy environment, such as smoke-free policies and restrictions on harmful substances. Governments should incentivize prevention by developing financial incentives for healthcare providers to focus on preventive care and reward positive health outcomes as well as offer insurance plans with lower premiums for individuals who actively engage in preventive measures. By combining these strategies, healthcare systems can shift towards a more holistic and preventive approach, ultimately reducing the burden of disease and improving overall population health (Ajuebor, Cometto and Akl, 2018).

Public health education and lifestyle interventions play a crucial role in promoting and maintaining the well-being of individuals and communities. Some key points highlighting their importance include prevention of diseases as public health education raises awareness about the risk factors associated with various diseases, helping individuals make informed decisions about their lifestyles. Lifestyle interventions focus also, on preventive measures such as regular exercise, healthy eating, and stress management, reducing the incidence of chronic diseases like heart disease, diabetes, and obesity (Simopoulos, Bourne and Fargeman, 2013). Public health education enhances health literacy, empowering individuals to understand and navigate health information as health-literate individuals are more likely to adopt healthier lifestyles and adhere to medical recommendations, contributing to better overall health outcomes. Investing in public health education and lifestyle interventions can be cost-effective in the long run by reducing the economic burden of treating preventable diseases since preventing diseases through education and lifestyle changes can lead to lower healthcare costs, increased productivity, and a healthier workforce. Further, public health education fosters a sense of community responsibility and encourages collective efforts toward healthier living and lifestyle interventions that are community-based can create supportive environments that promote health and well-being. Public health education also helps address health disparities by ensuring that information reaches all segments of the population, regardless of socioeconomic status or education level as lifestyle interventions that are accessible and culturally sensitive contribute to reducing health inequalities (Beneduce,2015).

Behavioral change has significant implications, influencing various aspects of the healthcare system since public health education utilizes behavior change theories to promote positive health-related behaviors. Hence, lifestyle interventions provide practical strategies for individuals to modify their habits, leading to sustained improvements in health and well-being. Public health education empowers individuals to take charge of their health by providing knowledge and skills to make informed decisions while lifestyle interventions emphasize the importance of personal responsibility in maintaining a healthy lifestyle, promoting a sense of control over one's well-being (Sayer, 2011). Public health education and lifestyle interventions focus on long-term health benefits rather than short-term fixes by promoting sustainable changes in behavior and lifestyle, these interventions contribute to a population with improved overall health and quality of life. Moreover, public health education and lifestyle interventions are instrumental in creating a culture of health, preventing diseases, and promoting well-being at both the individual and community levels. These efforts are essential components of a comprehensive approach to healthcare that extends beyond medical treatments to encompass the broader determinants of health.

3.Methodology

3.1 Research design

The research design was descriptive survey with both qualitative and quantitative methods of data collection in order to attain the comprehensive results (Musonda,2009). Qualitative methods were appropriate to this investigation as it produced detailed data from a small group of participants, while exploring feelings, impressions and judgments. This study employed a mixed-methods approach, combining historical analysis, case studies, and interviews with key stakeholders, including doctors, scholars, and civil pharmaceutical representatives. Data was collected from a range of primary and secondary sources to ensure a comprehensive and nuanced understanding of the subject. On the other hand, quantitative method made the use of questionnaires, surveys and experiment to gather data that is revised and tabulated in numbers, which allows the data to be characterized by use of statistical analysis (Kombo and Tromp,2006).

3.2 Research Sites

The study was carried out in three institutions of Hospitals, Universities, and Pharmaceutical offices from which respondents were also sampled.

3.3 Population, Sample and Sampling procedure

The population for the study was purposefully drawn from the Lusaka province of Zambia where all the respondents are found. Purposive sampling procedure was used to select the institutions (3) while the simple random sampling procedure was used to select the University lecturers (50); five from each institution, University students (50); five from each institution, Senior Doctors (50); five from each Hospital and Pharmaceutical members (50); four

from each organization (Bickel, 2007). The sample size comprised of 200 respondents. Also, the primary data was complimented by the secondary data which was derived from government policy documents, ministerial reports and relevant literature on language use.

In the sampling of province and institutions, the study adopted the stratified cluster random sampling technique. Sampling of the province was done on the basis of concentration of respondents and institutions were then done zone by zone. Universities and other institutions were clustered by zones. Two zones were purposively selected based on the basis of concentration of respondents. The sampling was done at three levels: Sampling zones, universities and other institutions- level 1, Sampling University lecturers and Doctors-level 2, Sampling Pharmaceutical representatives-level 3.

3.4 Data Analysis

In this research, data was analysed qualitatively as in-depth interviews, questionnaires and observation schedules were used as data collection instruments. Thematic approach was used, where data analysis started with the categorization of themes from the structured interviews, questionnaires (Kombo and Tromp, 2006). Charts and graphs were used to analyse data. The data gathered was analysed according to the themes of the study and per the order of the research objectives. Data generated from the interview guide was analysed manually and also, a combination of software MS Access, SPSS and MS Excel was used to analyse data. Analysis was mainly descriptive, that is, mean, median, mode, range, and standard deviation. Related statistics were applied where possible. Statistical testing took the form of Analysis of Variance (ANOVA), correlation and regression both simple and multiple, (Ahlers and Hessen, 2012).

3.5 Ethical Issues

The researcher avoided pressuring respondents to take part in the research. Alternatively, permission consents, assents were obtained from respondents involved in the research and the research topic was strategically selected to ensure that there was no harm whatsoever to the research respondents. In this research, the researcher was fully conscious of the need to abide by the ethical rule of respecting the privacy of individuals taking part in the research. In the same way, all the respondents of the research were to remain unidentified to the public as all their valuable views, opinions and perceptions were only known by the researcher for use only in the research and participant's identities will forever remain hidden.

The Researcher got permission from the Vice Chancellors to interview lecturers and students, from Hospital Superintendents to interview senior doctors in the Hospitals and Executive officers to interview Pharmaceutical members. The names of respondents would remain anonymous for the sake of confidentiality, (Bryman, 2001) and (Diener and Crandall, 2008). However, the identity of respondents was concealed in the article but for identification in the article, the fifty lecturers were allocated numbers 1 to 50, the fifty students were allocated ordinal numbers 1st to 50th, the fifty Pharmaceutical members were allocated names of fifty Primary schools in Lusaka, the fifty Doctors were allocated names of fifty secondary schools in Lusaka and Zones and institutions used pseudo names.

4. Findings and Discussions

4.1 The Impact of the Increased Presence of Doctors, Drugs and Medical Technologies on Disease Prevention and Management

According to study results, the increased presence of doctors, drugs, and medical technologies has had a profound impact on disease prevention and management. Three key aspects considered and brought out by respondents included disease prevention at 40%, disease management at 35% and challenges and conditions at 25% as illustrated in Figure 1 below.

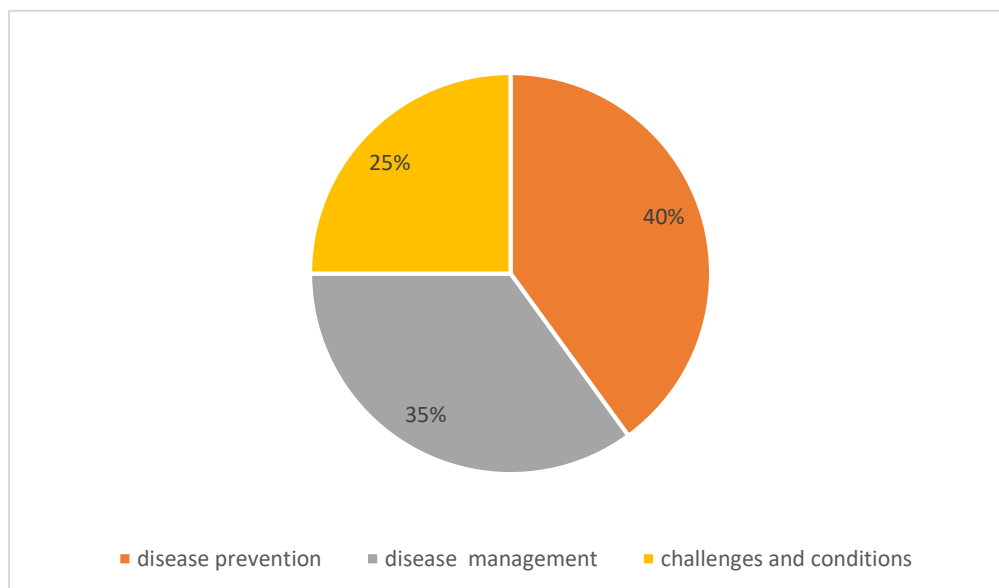


Figure1: Distribution of Key Aspects on the Impact of More Doctors, Drugs and Medical Technologies on Disease Prevention and Management.

On disease prevention, the study results reviewed that as regards vaccination and immunization, doctors play a crucial role in administering vaccines and promoting immunization and medical technologies contribute to the development and improvement of vaccines. As regards screening and early detection, advanced medical technologies enable early detection of diseases through various screening methods and increased doctor presence facilitates regular check-ups and screenings. On health education, doctors are essential in providing health education to the public, promoting lifestyle changes, and advising on preventive measures while drugs can be used for preventive purposes, such as statins for heart disease prevention (Langer,2015).

Further, on disease management, the study reviewed that Pharmacological treatment involves the availability of a wide range of drugs has significantly improved the management of various diseases and that doctors prescribe medications for chronic conditions, infectious diseases, and other health issues. On precision medicine, the study reviewed that advances in medical technology, including genetic testing, allow for more personalized and targeted treatments while doctors can tailor treatments based on an individual's genetic makeup, improving effectiveness (Ajuebor, Cometto and Akl,2018). Telemedicine involves the increased presence of doctors through telemedicine has improved access to healthcare, especially in remote areas and that patients can consult with healthcare professionals and manage certain conditions from the comfort of their homes. Also, the study reviewed that in surgical interventions, medical technologies have led to advancements in surgical procedures, making them more precise and less invasive and that surgeons can utilize robotic-assisted surgery and other advanced tools for better outcomes. On the other hand, chronic disease management involves continuous monitoring devices and wearable technologies help manage chronic diseases by providing real-time data to doctors while medications for chronic diseases help control symptoms and improve patients' quality of life (Beneduce,2015).

In addition, the study reviewed that challenges and considerations include cost and accessibility as despite advancements, cost and accessibility to medical services and drugs can be a barrier for some populations. As regards overreliance on medications, there's a risk of overreliance on medications without addressing underlying lifestyle factors while long-term use of certain medications may have side effects. On ethical considerations, the study reviewed that the use of emerging technologies raises ethical concerns, such as privacy issues in genetic testing and the responsible use of patient data (Achotegui,2015). As regards global disparities, the disparities in healthcare access and technology exist globally, affecting disease prevention and management outcomes. Nevertheless, the increased presence of doctors, drugs, and medical technologies has substantially improved disease prevention and management. However, addressing challenges related to accessibility, cost, ethical considerations, and global disparities is crucial to ensure equitable and effective healthcare outcomes for all.

4.2 The Role of Lifestyle Changes and Environmental Factors in the Escalating Global Disease Burden

According to study results, the escalating global disease burden is influenced by a complex interplay of various factors, including lifestyle changes and environmental factors. Understanding and analyzing these components is crucial for developing effective public health strategies. An analysis of the role of lifestyle changes and environmental factors in the increasing global disease burden is that lifestyle changes involves diet and nutrition and shifts in dietary patterns, often characterized by an increase in processed foods, high sugar intake, and a decrease in the consumption of fresh fruits and vegetables, contribute to the rise in non-communicable diseases (NCDs) such as obesity, diabetes, and cardiovascular diseases. Physical activity involves sedentary lifestyles associated with urbanization and technological advancements contribute to obesity and related health issues (Sayer,2011). Lack of physical activity is linked to conditions such as heart disease, diabetes, and certain cancers. On tobacco and alcohol use, increased tobacco and alcohol consumption, particularly in developing countries, contribute to the growing burden of respiratory diseases, cancers, and liver diseases. Stress and mental health comes in as modern lifestyles often involve higher stress levels due to factors like work pressure, social issues, and technological advancements. Chronic stress is associated with mental health disorders and can exacerbate physical health problems.

Also, the study results reviewed that environmental factors involves air pollution as poor air quality, largely a result of industrialization and increased vehicular emissions, is linked to respiratory diseases, cardiovascular problems, and other health issues. This is a significant concern, especially in rapidly urbanizing areas. Inadequate access to clean water and sanitation facilities contributes to the spread of infectious diseases, including waterborne diseases like diarrhea and cholera while alterations in climate patterns have implications for the spread of vector-borne diseases (e.g., malaria, dengue) and can lead to increased frequency and intensity of extreme weather events, impacting public health infrastructure and exacerbating existing health challenges (Bauer, Mac Adams and Pals,2008). In addition, exposure to environmental pollutants and chemicals, both in the workplace and in daily life, can contribute to the development of various diseases, including cancers and reproductive health issues. Further, the study reviewed that interconnectedness of factors escalate the global disease burden and this includes synergistic effects since lifestyle and environmental factors often interact, leading to synergistic effects. For example, poor diet and sedentary lifestyles can amplify the health impacts of environmental pollution. Lifestyle choices and exposure to environmental risks are often influenced by socioeconomic factors, contributing to health disparities. Individuals with lower socioeconomic status may have limited access to healthcare, healthy food, and safe living environments (Davies,2016).

In addition, the study reviewed that globalization and urbanization escalate the global disease burden since globalization involves the interconnected global economy and facilitates the spread of lifestyle choices and environmental challenges across borders, influencing health patterns on a global scale. Urbanization: is another factor which help to escalate the global disease burden as the rapid urbanization often leads to changes in lifestyle and environmental exposure. Urban areas may face specific health challenges related to congestion, pollution, and lifestyle changes (Epstein, Farina and Heidt,2014). Nevertheless, addressing the escalating global disease burden requires a comprehensive understanding of the multifaceted relationship between lifestyle changes, environmental factors, and health outcomes. Implementing effective interventions requires a holistic approach that considers

the interconnected nature of these influences and takes into account socioeconomic, cultural, and geopolitical factors. Public health strategies should focus on preventive measures, health education, and sustainable development to mitigate the impact of these factors on global health.

4.3 Disparities in Access to Medical Resources and their Implications for Disease Prevalence

According to study findings, disparities in access to medical resources contribute significantly to variations in disease prevalence across different populations. These disparities can manifest in various forms, including education health literacy being the highest at 35%, socioeconomic status at 25%, cultural factors at 20% and differences in healthcare infrastructure geographical disparities both at 10% as illustrated in Figure 2 below.

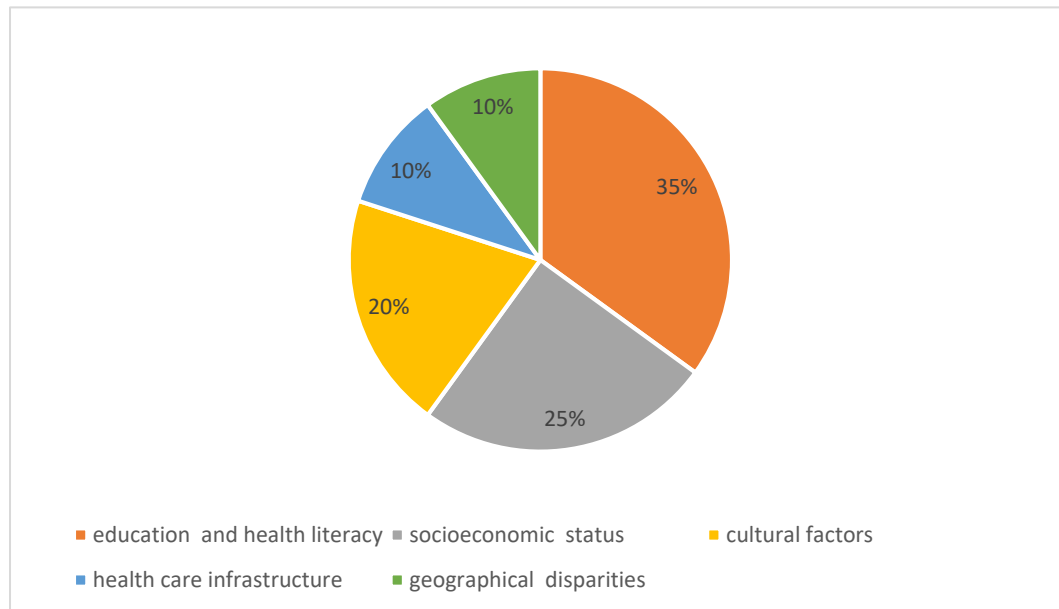


Figure 2: Distribution of Disparities in Access to Medical Resources and their Implications for Disease Prevalence

The study reviewed some key aspects to consider when investigating these disparities and their implications for disease prevalence included healthcare infrastructure and healthcare personnel and usually, disparities may arise due to unequal distribution of healthcare facilities. Rural areas, for instance, may have limited access to hospitals and specialized medical services, leading to delayed or inadequate healthcare while disparities in the distribution of healthcare professionals can impact the quality and availability of medical care. Areas with shortages of doctors and nurses may experience higher disease prevalence. On socioeconomic status: the study reviewed income disparities and insurance coverage. Lower-income individuals often face barriers in accessing medical resources, including preventive care, screenings, and medications. This can contribute to a higher prevalence of diseases that could have been managed or prevented. Disparities in health insurance coverage can also result in individuals avoiding or delaying medical care due to financial constraints, leading to increased disease burden (Simopoulos, Bourne and Faergeman,2013).

Further the study reviewed that education and health literacy, geographic disparities and cultural factors have implications on disease prevalence. Lack of education and health literacy can lead to poor awareness of preventive measures and delayed recognition of symptoms. This can contribute to the higher prevalence of certain diseases while understanding medical advice is crucial for proper disease management. Disparities in education can lead to non-adherence to prescribed treatments and lifestyle modifications (Kneafsey et al,2013). As regards geographic disparities, there is urban vs. rural disparities where rural areas may have limited access to healthcare facilities and specialized services, contributing to differences in disease prevalence compared to urban areas while regional variations in the prevalence of diseases can be influenced by environmental factors, lifestyle choices, and the availability of public health programs. In addition, the study reviewed that cultural factors involves beliefs and practices where cultural beliefs and practices can influence healthcare-seeking behavior. Some populations may rely on traditional remedies, leading to delayed or inadequate medical intervention. while stigmatization of certain diseases can discourage individuals from seeking medical help, contributing to higher prevalence rates. Nevertheless, addressing these disparities requires a multi-faceted approach that involves improving healthcare infrastructure, addressing socioeconomic inequalities, promoting education and health literacy, and understanding and respecting cultural diversity. By reducing disparities in access to medical resources, it is possible to mitigate the impact of these factors on disease prevalence and improve overall population health (White and Blackmore,2016).

4.4 Potential unintended consequences of widespread medical interventions

According to study results, widespread medical interventions, while often designed to improve health outcomes, can indeed have unintended consequences. Some potential unintended consequences to brought out to consider included: antibiotic resistance as the widespread and often inappropriate use of antibiotics can lead to the development of antibiotic-resistant strains of bacteria. This poses a significant threat to public health, as it

reduces the effectiveness of these drugs in treating infections (Zevnik,2014). Over diagnosis and Overtreatment brings about unintended consequences as intensive screening and diagnostic efforts can lead to over diagnosis, where individuals are diagnosed with conditions that may never cause harm. This can result in unnecessary treatments, exposing patients to potential risks and increasing healthcare costs. Medicalization of normal conditions is another as some medical interventions may redefine normal variations as medical conditions, leading to unnecessary medicalization. For example, defining common emotional states as mental disorders might result in the unnecessary prescription of medications. Also, side effects and complications have consequences since every medical intervention carries some risk of side effects or complications. Widespread use can amplify the occurrence of these adverse effects, impacting the overall health of the population (Mathews,2012).

Further, the study reviewed that resource allocation and inequity is a potential unintended consequence of widespread medical interventions as widespread medical interventions may divert resources away from other important public health initiatives, potentially exacerbating health inequities. Access to certain interventions may also be unevenly distributed, leading to disparities in health outcomes. Shift in disease patterns is unintended since successful interventions against certain diseases may lead to a shift in disease patterns. For example, the reduction of infectious diseases through vaccination might lead to an increase in the prevalence of chronic diseases (Arcidiacono,2016). Relying heavily on medical interventions may lead to psychological effects, such as a reduced sense of personal responsibility for one's health. Individuals might be less inclined to adopt healthy lifestyle changes if they believe that medical interventions can address all health issues. Also, the production and disposal of medical interventions, such as pharmaceuticals, can have environmental consequences. The release of pharmaceuticals into water sources, for example, can impact ecosystems and potentially harm aquatic life. In addition, reliance on vaccines and other medical interventions to prevent diseases may result in a population with reduced natural immunity. This could be problematic if there are disruptions in the availability of medical interventions. The cost of widespread medical interventions, particularly in the context of emerging technologies, can place a significant economic burden on healthcare systems and society as a whole (Brangan,2016). However, these unintended consequences are not universal to all medical interventions, and many interventions have clear benefits that outweigh potential drawbacks. However, considering these factors is crucial for designing and implementing healthcare strategies that maximize benefits while minimizing harm.

4.5 Alternative public health strategies that address the paradox of increased diseases despite medical progress

According to study results, addressing the paradox of increased diseases despite medical progress involves considering a holistic approach to public health. While medical advancements have certainly improved the treatment of many diseases, there are various social, economic, and environmental factors that contribute to the rising burden of diseases. Alternative public health strategies to address this paradox were preventive health education at 14%, access to healthcare at 13%, social determinants of health at 12%, environmental policies and community based interventions both at 10%, early childhood health programs and global collaboration both at 9% and behavioral economics strategies and data driven interventions both at 8% as illustrated in Figure 3 below.

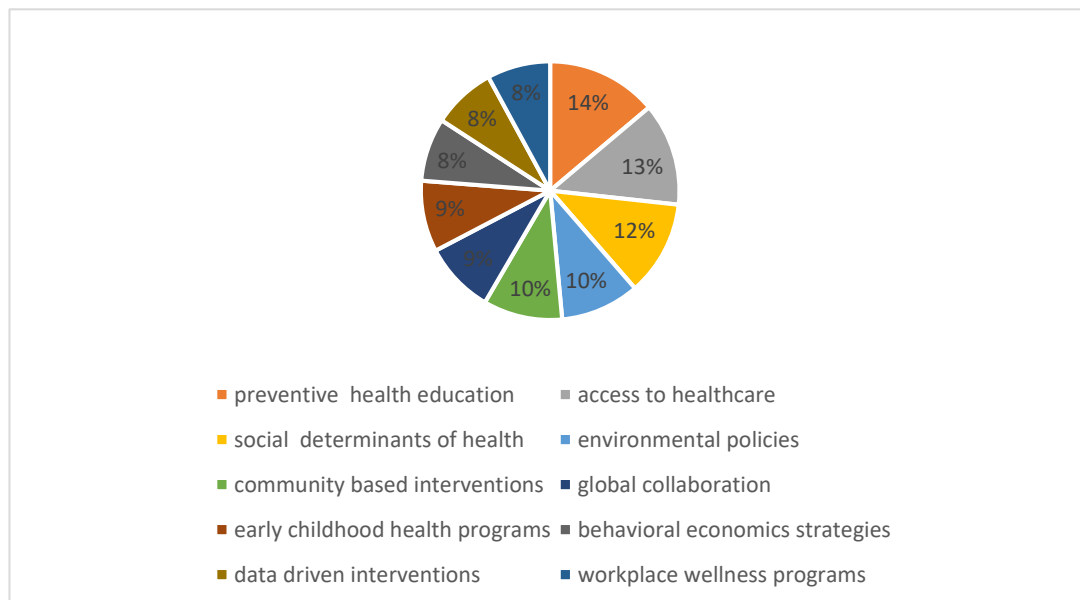


Figure 3: Distribution of alternative public health strategies that address the paradox of increased diseases despite medical progress

The study reviewed that preventive health education is essential in addressing the paradox and should focus on public health education to promote healthier lifestyles and preventive measures. This includes awareness campaigns on nutrition, physical activity, mental health, and the risks associated with certain behaviors as well as target specific populations with tailored messages to address cultural and socio-economic factors influencing health choices. As regards social determinants of health governments should address the social determinants of health, such as poverty, education, and housing. These factors significantly impact health outcomes and should implement policies that reduce income inequality, improve access to quality education, and create affordable housing options. Environmental policies are inevitable and should develop and enforce policies to reduce environmental pollution

and promote sustainable practices. Air and water quality, as well as exposure to toxins, can contribute to the prevalence of diseases as well as encourage the use of clean energy sources, green spaces, and urban planning that prioritizes health (Prior, Hughes and Peckham,2015).

Further, the reviewed that community-based interventions can be applied to address this paradox. Should foster community engagement in health promotion activities. Establish community health centers and support grassroots organizations working on health initiatives and promote social cohesion and a sense of community, which has been linked to better health outcomes. There is need to improve access to healthcare services, especially in underserved communities. This includes increasing the number of healthcare facilities, healthcare professionals, and affordable healthcare options and also, implement telehealth initiatives to enhance access, particularly in remote areas. Governments should utilize principles from behavioral economics to nudge individuals toward healthier choices. This might include incentive programs for healthier behaviors and interventions that consider cognitive biases affecting decision-making. They should encourage companies to implement comprehensive workplace wellness programs. These programs can include fitness initiatives, stress management, and mental health support(Talley,2011).

In addition, study reviewed that governments should foster international collaboration to address global health challenges. This involves sharing resources, knowledge, and technologies to tackle diseases that transcend national borders. Data-driven interventions should be used to implement data analytics to identify and understand health trends. Use this information to design targeted interventions and allocate resources efficiently. Early childhood health programs should be put in place and governments the world over should invest in early childhood health programs that focus on nutrition, vaccination, and early detection of developmental issues. The foundation of good health starts in childhood (Ajuebos, Cometto and Akl,2018). Nevertheless, by adopting a comprehensive, multi-faceted approach that goes beyond the traditional medical model, it is possible to address the paradox of increased diseases despite medical progress and create a healthier society. These strategies require collaboration between healthcare providers, policymakers, communities, and individuals.

5.Conclusion

In conclusion, the paradox of increased diseases in the context of medical progress underscores the need for a holistic understanding of health. Medical advancements alone may not be sufficient to address the complex interplay of biological, environmental, and social factors influencing disease patterns. A comprehensive approach that considers prevention, lifestyle interventions, and equitable access to healthcare is essential to truly improve overall public health outcomes. However, medical progress has contributed to the identification and understanding of new diseases, and changing lifestyles have led to the emergence of previously uncommon health issues. As a result, the overall burden of diseases may appear to increase, even though some traditional diseases are better managed. Also, the global population is aging, and older individuals often experience a higher prevalence of chronic diseases. The increase in life expectancy, which is a marker of medical progress, also means a higher likelihood of encountering age-related health challenges. Changes in the environment, including pollution, climate change, and alterations in dietary habits, can contribute to the rise of certain diseases. Medical progress alone may not be sufficient to address these external factors. Nevertheless, disparities in access to healthcare, socioeconomic status, and education can lead to variations in health outcomes. While medical progress may benefit some segments of the population, others may experience increased disease burden due to inadequate access to healthcare resources. The misuse of antibiotics and the evolution of antibiotic-resistant strains of bacteria pose a significant challenge to medical progress. Infections that were once easily treatable may become more difficult to manage, contributing to the paradox of increased diseases. Despite medical advancements, lifestyle choices such as poor diet, lack of exercise, and substance abuse continue to contribute significantly to the prevalence of preventable diseases. Addressing these factors requires a comprehensive, multidisciplinary approach. Also, advances: Improved diagnostic techniques can lead to the identification of previously undetected conditions. While this can be seen as a positive outcome of medical progress, it may also contribute to an apparent increase in the overall disease burden.

6.Recommendations

The paradox of increased diseases despite medical progress can be attributed to various factors, including lifestyle changes, environmental factors, and the emergence of new health challenges. Addressing the paradox of increased diseases requires a holistic and collaborative approach that involves individuals, communities, healthcare professionals, policymakers, and researchers working together to promote health and well-being. Some recommendations for governments and Ministries of Health include the following:

1. Preventive Healthcare:

- Emphasize the importance of preventive healthcare measures, including regular health check-ups, vaccinations, and screenings.
- Educate the public about healthy lifestyle choices, such as balanced nutrition, regular exercise, and stress management.

2. Health Education:

- Increase public awareness about the risks of unhealthy behaviors, such as smoking, excessive alcohol consumption, and poor dietary habits.
- Promote health literacy to empower individuals to make informed decisions about their health.

3. Environmental Awareness:

- Address environmental factors contributing to health issues, such as air and water pollution, which can lead to respiratory and cardiovascular diseases.
 - Encourage sustainable practices to mitigate the impact of environmental degradation on public health.
4. Access to Healthcare:
 - Improve access to healthcare services, particularly in underserved and remote areas.
 - Implement policies to reduce healthcare disparities and ensure that everyone has access to essential medical services.
 5. Technological Innovations:
 - Leverage technology for early detection and diagnosis of diseases. Develop and implement advanced screening methods and diagnostic tools.
 - Explore telemedicine and digital health solutions to enhance healthcare accessibility.
 6. Global Collaboration:
 - Foster international collaboration to address global health challenges.
 - Share research findings, best practices, and resources to tackle emerging diseases on a global scale.
 7. Research and Development:
 - Invest in research to understand the underlying causes of new and emerging diseases.
 - Support the development of innovative treatments and vaccines to combat evolving health threats.
 8. Policy Interventions:
 - Implement and enforce policies that promote public health, such as tobacco control measures, regulations on food quality, and environmental protection laws.
 - Address social determinants of health, such as poverty and education, through targeted policy interventions.
 9. Community Engagement:
 - Engage communities in health promotion and disease prevention efforts.
 - Encourage community-based initiatives that address specific health challenges faced by different populations.
 10. Adaptability and Flexibility:
 - Develop healthcare systems that can adapt to changing health landscapes and respond effectively to new challenges.
 - Foster a culture of continuous learning and improvement within the healthcare sector.

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