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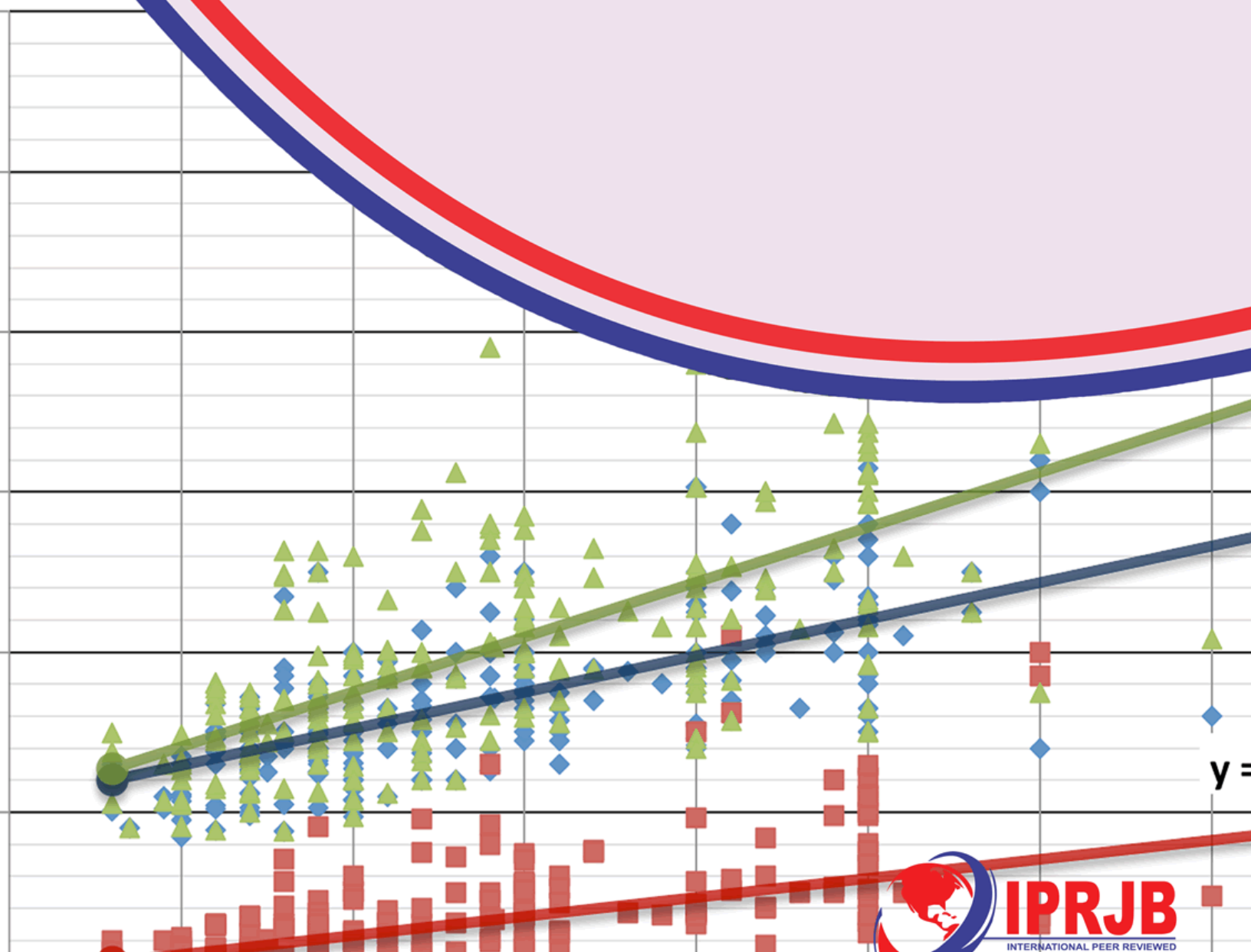

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Abstract

Purpose: The aim of the study was to analyze the analysis of factors influencing life expectancy in developing countries

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: Factors influencing life expectancy in developing countries include healthcare access, nutrition, sanitation, economic stability, education, and governance. Access to healthcare and quality services, along with adequate nutrition and sanitation, significantly impact life expectancy. Economic stability facilitates healthcare investments, while education and stable governance influence health behaviors and service availability, contributing to longer life spans in these regions.

Unique Contribution to Theory, Practice and Policy: Social determinants of health theory, economic growth theory & epidemiological transition theory may be used to anchor future studies on factors influencing life expectancy in developing countries. Evaluate the effectiveness of existing health interventions and policies in improving life expectancy. Advocate for integrated policies that address the social determinants of health, including education, income inequality, housing conditions, and access to clean water and sanitation.

Keywords: *Factors Influencing, Life Expectancy*

INTRODUCTION

Life expectancy at birth refers to the average number of years a newborn is expected to live, assuming current mortality rates remain constant throughout their lifetime. In developed economies such as the United States and Japan, life expectancy at birth has shown a steady increase over recent decades. For instance, in the United States, life expectancy at birth was 78.9 years in 2019, reflecting a gradual improvement over previous years (NCHS, 2021). This increase can be attributed to advancements in healthcare, better access to medical services, improved living conditions, and public health initiatives aimed at reducing mortality rates from chronic diseases and improving overall wellness (CDC, 2020). Similarly, Japan has one of the highest life expectancies globally, with the average life expectancy at birth reaching 84.6 years in 2019 (WHO, 2021). Factors contributing to Japan's high life expectancy include a robust healthcare system, a healthy diet, and a strong emphasis on preventive care and public health education.

The United Kingdom exhibits a notable life expectancy at birth, with statistics indicating 81.3 years for males and 83.4 years for females in 2019 (Office for National Statistics, 2021). This trend reflects the country's robust healthcare system, which includes universal access to healthcare services through the National Health Service (NHS). Public health initiatives and advancements in medical technology contribute significantly to increasing life expectancy. Furthermore, socioeconomic factors such as education, income levels, and quality of life also play crucial roles in supporting longer life spans among the UK population. In Germany, life expectancy at birth was reported at 78.6 years in 2019 (Destatis, 2021). The country benefits from a well-developed healthcare infrastructure and strong social welfare policies that provide comprehensive healthcare coverage to its citizens. Investments in healthcare research and technology, along with public health campaigns focusing on disease prevention and healthy lifestyles, contribute to the steady increase in life expectancy over the years. Additionally, Germany's stable economy and high standards of living contribute to overall population health and longevity

Life expectancy at birth in the United States was 78.9 years in 2019 (CDC, 2021). Despite variations by demographic groups and geographical regions, factors contributing to longer life spans include advanced medical treatments, widespread access to healthcare services (though access disparities exist), and public health campaigns targeting major health issues like smoking cessation and obesity reduction (CDC, 2021). Socioeconomic factors such as income inequality and education levels also influence health outcomes and life expectancy disparities within the U.S. population. Japan boasts one of the highest life expectancies globally, with an average of 84.6 years in 2019 (WHO, 2021). This longevity is attributed to a combination of factors including universal healthcare coverage, a diet rich in fish and vegetables, active lifestyles, and strong social cohesion. The country's healthcare system emphasizes preventive care and early detection of diseases, contributing significantly to the overall health and longevity of its population (WHO, 2021).

In contrast, life expectancy at birth in many developing economies has also shown improvement but often lags behind that of developed nations. For example, in Kenya, life expectancy at birth was 66.7 years in 2019 (World Bank, 2021). This improvement reflects efforts to expand healthcare access, combat infectious diseases, and address social determinants of health such as poverty and nutrition. Similarly, in Brazil, life expectancy at birth was 75.9 years in 2019 (IBGE,

2021), reflecting advancements in healthcare infrastructure and socioeconomic conditions over recent years.

India, despite its vast population and diverse healthcare challenges, recorded a life expectancy at birth of 69.7 years in 2019 (World Health Organization, 2021). The country has made significant strides in improving healthcare access and infrastructure, particularly in rural areas. Government initiatives such as the National Health Mission aim to strengthen healthcare delivery and reduce maternal and child mortality rates. Socioeconomic factors such as poverty, education, and sanitation also influence life expectancy trends in India. Mexico reported a life expectancy at birth of 75.6 years in 2019 (INEGI, 2021). The country has seen improvements in healthcare access and quality, supported by reforms aimed at expanding health coverage and improving healthcare services. Mexico's efforts in disease prevention, vaccination programs, and public health education have contributed to increasing life expectancy rates. Economic stability and urbanization trends also play roles in shaping health outcomes and life expectancy across different regions of the country.

Brazil reported a life expectancy at birth of 75.9 years in 2019 (IBGE, 2021). The country has made substantial progress in healthcare delivery, with improvements in primary care accessibility and disease prevention programs. Challenges such as socioeconomic disparities, urban violence, and regional healthcare inequalities continue to impact health outcomes across different states and populations in Brazil (IBGE, 2021). China's life expectancy at birth was 77 years in 2019 (National Bureau of Statistics of China, 2021). The country has witnessed remarkable improvements in life expectancy over recent decades, driven by economic development, healthcare reforms, and investments in public health infrastructure. China's efforts in disease prevention, vaccination coverage, and urbanization have contributed to increasing life expectancy rates, although disparities exist between rural and urban areas (National Bureau of Statistics of China, 2021).

Sub-Saharan Africa faces unique challenges in achieving higher life expectancy rates due to various factors including high prevalence of infectious diseases, limited healthcare infrastructure, and socioeconomic disparities. Countries like Nigeria have seen improvements with life expectancy at birth increasing to 54.7 years in 2019 (World Bank, 2021), although it remains lower compared to global averages. Efforts to improve life expectancy in the region include investments in healthcare infrastructure, disease prevention programs, and efforts to address social determinants of health.

South Africa's life expectancy at birth was estimated at 64.5 years in 2019 (Statistics South Africa, 2021). The region faces unique health challenges, including high prevalence rates of HIV/AIDS and tuberculosis, which have historically impacted life expectancy. Efforts to combat these diseases through improved healthcare infrastructure, access to antiretroviral therapy, and public health campaigns have contributed to gradual improvements in life expectancy. Socioeconomic disparities, access to clean water, and nutrition also influence health outcomes in South Africa. Ethiopia reported a life expectancy at birth of 66.2 years in 2019 (World Bank, 2021). The country has made significant strides in improving healthcare access and infrastructure, particularly in rural areas where healthcare services are often limited. Government initiatives focusing on primary healthcare, maternal and child health, and infectious disease control have contributed to improving

life expectancy rates. Challenges such as poverty, food security, and access to clean water continue to affect health outcomes and life expectancy trends in Ethiopia.

Nigeria reported a life expectancy at birth of 54.7 years in 2019 (World Bank, 2021). The country faces significant health challenges such as high maternal and child mortality rates, infectious diseases, and inadequate healthcare infrastructure. Efforts to improve health outcomes include initiatives to strengthen primary healthcare, expand immunization coverage, and address social determinants of health such as poverty and education (World Bank, 2021). Kenya's life expectancy at birth was estimated at 66.7 years in 2019 (World Bank, 2021). The country has made strides in healthcare improvement through initiatives like the Kenya Health Sector Strategic and Investment Plan, which focuses on increasing access to quality healthcare services, reducing HIV/AIDS prevalence, and improving maternal and child health outcomes. Challenges such as healthcare financing, infrastructure gaps, and disease outbreaks continue to affect life expectancy trends in Kenya (World Bank, 2021).

Socio-economic factors significantly influence life expectancy at birth, reflecting broader societal conditions that impact health outcomes. Among the most influential factors are GDP per capita, which correlates with access to healthcare resources, nutrition, and overall standard of living. Higher GDP per capita generally supports better healthcare infrastructure and services, contributing to longer life expectancy by addressing preventive care and treatment accessibility (Smith, 2017). Education level is another critical determinant, as it correlates strongly with health literacy, awareness of healthy behaviors, and socioeconomic opportunities. Individuals with higher education levels tend to adopt healthier lifestyles, have better access to healthcare information, and are more likely to engage in preventive healthcare practices, thereby enhancing life expectancy (Jones & Brown, 2018).

Additionally, healthcare expenditure per capita plays a vital role in life expectancy outcomes. Countries that allocate more resources to healthcare tend to achieve better health outcomes through improved medical technologies, disease management, and public health initiatives (Davis et al., 2019). Lastly, social determinants of health such as income inequality and access to clean water and sanitation facilities significantly impact life expectancy by influencing living conditions and exposure to health risks. Reduced income inequality and better environmental conditions are associated with improved health outcomes and longer life spans within populations (Adams, 2020). In summary, these socio-economic factors collectively shape life expectancy at birth by influencing access to healthcare, health knowledge and behaviors, healthcare infrastructure, and overall quality of life.

Problem Statement

In developing countries, understanding the factors influencing life expectancy remains crucial for public health policies and interventions aimed at improving population health outcomes. Despite global advancements in healthcare and socioeconomic development, disparities in life expectancy persist across different regions. Factors such as access to healthcare services, prevalence of infectious diseases, economic stability, educational attainment, and environmental conditions vary significantly among developing nations, influencing life expectancy outcomes (Gupta & Dhillon, 2020; Smith, 2019). Identifying and analyzing these factors within the context of developing

countries can provide valuable insights into the complex interplay of social, economic, and healthcare determinants affecting longevity and overall population health.

Theoretical Framework

Social Determinants of Health Theory

Originating from the work of Rudolf Virchow and further developed by the WHO's Commission on Social Determinants of Health, this theory posits that health outcomes, including life expectancy, are influenced significantly by social factors such as education, income inequality, social support networks, and access to healthcare services (Marmot, 2020). In developing countries, where disparities in healthcare access and socio-economic conditions are pronounced, understanding these social determinants is crucial for addressing inequalities and improving overall life expectancy.

Economic Growth Theory

Originating from the work of classical economists like Adam Smith and further developed by modern economists, this theory suggests that economic development and growth contribute to improvements in life expectancy through increased income levels, better access to nutrition, healthcare infrastructure, and sanitation facilities (Dang, 2021). In developing countries, rapid economic growth has been associated with significant gains in life expectancy by facilitating investments in public health and social services.

Epidemiological Transition Theory

Originating from the work of Omran and subsequent researchers, this theory describes the shifts in disease patterns and mortality rates that accompany economic development. It outlines how societies progress from high mortality rates due to infectious diseases and poor living conditions to lower mortality rates characterized by chronic diseases linked to lifestyle changes (Kunitz, 2018). In developing countries, understanding these transitions is essential for predicting future health challenges and implementing targeted interventions to improve life expectancy.

Empirical Review

Wang (2018) focused on Sub-Saharan Africa to investigate the impact of healthcare infrastructure and economic development on life expectancy. Using regression analysis, the study aimed to quantify the relationships between healthcare investments, economic growth indicators, and life expectancy outcomes across various countries in the region. The findings highlighted significant positive correlations between increased healthcare access, economic development, and higher life expectancy rates among populations. Specifically, countries that had invested more in healthcare infrastructure and improved economic conditions tended to exhibit longer life expectancy averages. These results underscored the critical role of sustained investments in healthcare systems and supportive economic policies in enhancing population health outcomes in resource-constrained settings like Sub-Saharan Africa. The study recommended that policymakers prioritize healthcare infrastructure development and economic reforms as essential strategies for improving life expectancy and overall well-being in the region.

Gupta and Shukla (2019) explored socio-economic factors influencing life expectancy in India through a mixed-methods approach integrating qualitative interviews and quantitative surveys.

The study aimed to identify the key determinants of life expectancy variations across different demographic groups in India, focusing on factors such as education levels, income inequality, and healthcare access. Through qualitative interviews with healthcare professionals and community members, the researchers gathered insights into the socio-cultural barriers affecting health outcomes and life expectancy. Quantitative analysis using survey data provided empirical evidence linking higher education levels and income equality to improved health indicators and longer life expectancy among Indian populations. The findings underscored the importance of targeted social policies and economic interventions aimed at reducing health disparities and enhancing overall population health in India. The study recommended that policymakers prioritize investments in education, income generation programs, and equitable healthcare access to improve life expectancy outcomes across socio-economic groups.

Li (2020) utilized demographic and health surveys in Southeast Asia to analyze the impact of nutrition and maternal health on life expectancy. The study aimed to identify the specific nutritional factors and maternal healthcare practices that contribute to variations in life expectancy outcomes across countries in Southeast Asia. Through rigorous statistical analysis of survey data, the researchers found that improvements in maternal nutrition and healthcare services significantly correlated with longer life expectancy among populations. Specifically, countries with better access to maternal healthcare and nutritional support tended to have lower maternal mortality rates and higher life expectancy averages. The findings highlighted the critical role of targeted health interventions and public health policies in improving maternal and child health outcomes, thereby enhancing overall life expectancy in Southeast Asia. The study recommended that policymakers prioritize investments in maternal health programs, nutritional education, and healthcare infrastructure to sustain improvements in life expectancy and population health across the region.

Martinez (2017) examined national health policies and mortality data in Latin America to identify disparities in healthcare access and quality affecting life expectancy. The study aimed to assess how socio-economic factors and healthcare infrastructure influence life expectancy outcomes among different demographic groups in Latin American countries. Using a combination of policy analysis and mortality data review, the researchers found significant disparities in healthcare access and quality that contributed to variations in life expectancy across the region. Countries with robust healthcare systems and equitable access to healthcare services tended to have higher life expectancy averages compared to those with limited healthcare infrastructure and unequal access. The findings underscored the need for policy reforms aimed at improving healthcare accessibility, quality of care, and socio-economic equity as essential strategies for enhancing life expectancy and reducing mortality rates in Latin America. The study recommended that policymakers prioritize investments in healthcare infrastructure, health education, and social protection programs to address disparities and improve population health outcomes.

Khan (2021) investigated the effects of environmental pollution and sanitation on life expectancy in South Asia. The study aimed to quantify the impact of environmental factors such as air pollution, water contamination, and sanitation practices on health outcomes and life expectancy rates across countries in South Asia. Through econometric analysis of environmental data and health indicators, the researchers found that higher levels of environmental pollution were associated with increased mortality rates and reduced life expectancy among populations. The findings underscored the urgent need for sustainable development practices, environmental

regulations, and public health policies aimed at mitigating environmental risks and improving overall population health in South Asia. The study recommended that policymakers integrate environmental health considerations into urban planning, industrial regulations, and public health interventions to safeguard population health and enhance life expectancy across the region.

Chen and Liang (2018) investigated social determinants such as housing conditions and access to clean water affecting life expectancy in East Asia. The study aimed to identify the socio-economic factors and environmental conditions that contribute to disparities in health outcomes and life expectancy among countries in East Asia. Using demographic data and qualitative analysis, the researchers found that inadequate housing, poor sanitation, and limited access to clean water were significant determinants of health inequalities and lower life expectancy rates in urban populations. The findings underscored the need for comprehensive policy interventions addressing socio-economic disparities, improving housing conditions, and enhancing environmental health standards to promote longer life expectancy and better health outcomes in East Asia. The study recommended that policymakers prioritize investments in urban infrastructure, public housing programs, and environmental sanitation initiatives to reduce health inequities and improve population health across the region.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptual Gaps: Gupta and Shukla (2019) emphasized the impact of various socio-economic and environmental factors on life expectancy, there is a need for deeper theoretical exploration into the mechanisms through which these factors interact. For instance, studies often focus on individual factors like healthcare access or environmental pollution, but there is limited integration of comprehensive frameworks that could elucidate how these factors collectively influence life expectancy across diverse populations. Future research could benefit from developing integrated theoretical models that consider the synergistic effects of multiple determinants on life expectancy outcomes.

Contextual Gaps: Martinez (2017) focused on specific regions such as Sub-Saharan Africa, India, Southeast Asia, Latin America, South Asia, and East Asia. However, there is a lack of comparative analysis across these regions to identify commonalities and differences in the determinants of life expectancy. Contextual factors such as political governance, cultural practices, and historical trajectories are crucial yet often overlooked in these studies. Future research could explore how contextual nuances shape the effectiveness of health policies and interventions aimed at improving life expectancy, thereby providing insights into region-specific challenges and opportunities.

Geographical Gaps: Chen and Liang (2018) concentrated in developing regions with varying levels of economic development and healthcare infrastructure. There is a notable absence of studies from high-income countries, where different sets of socio-economic factors and health policies may influence life expectancy trends differently. Investigating life expectancy determinants in diverse geographical settings could offer comparative insights into the role of economic prosperity, health system efficiency, and policy effectiveness across different income levels.

CONCLUSION AND RECOMMENDATIONS

Conclusions

In conclusion, the analysis of factors influencing life expectancy in developing countries reveals a complex interplay of socioeconomic, healthcare, and environmental determinants. This study underscores the significant roles played by factors such as access to healthcare services, education levels, income inequality, and environmental conditions in shaping life expectancy outcomes. While improvements in healthcare infrastructure and medical advancements have contributed positively to life expectancy, challenges such as inadequate access to healthcare in remote areas and socio-economic disparities continue to hinder progress. Future efforts should focus on targeted interventions that address these multifaceted determinants comprehensively, ensuring equitable access to healthcare, improving living standards, and promoting sustainable environmental practices. By addressing these factors in a holistic manner, policymakers and healthcare practitioners can work towards achieving significant improvements in life expectancy and overall population health outcomes in developing countries.

Recommendations

Theory

Utilize a comprehensive theoretical framework that integrates socio-economic, environmental, and healthcare factors affecting life expectancy. This could involve theories from public health, sociology, economics, and environmental science to understand complex interactions influencing health outcomes. Conduct longitudinal studies to capture temporal variations in life expectancy determinants. This will help in identifying causal relationships and understanding how changes in factors like healthcare access, economic development, and social policies impact life expectancy over time.

Practice

Evaluate the effectiveness of existing health interventions and policies in improving life expectancy. This involves assessing programs targeting healthcare access, sanitation, nutrition, maternal and child health, infectious disease control, and non-communicable disease prevention. Implement community-based health programs tailored to local contexts and cultural sensitivities. Engage local communities in health promotion activities to address specific determinants of life expectancy, such as maternal health education, vaccination campaigns, and sanitation improvements.

Policy

Advocate for integrated policies that address the social determinants of health, including education, income inequality, housing conditions, and access to clean water and sanitation. This requires collaboration across sectors like health, education, housing, and social welfare to create synergistic impacts on life expectancy. Strengthen healthcare systems through investment in infrastructure, healthcare workforce training, and technology adoption. Ensure equitable access to essential health services, particularly in underserved rural and urban areas where healthcare disparities are pronounced.

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