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Health Disparities and Socioeconomic Inequalities: Investigating the Link between Poverty and Public Health Outcomes

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Abstract
The presence of socioeconomic inequalities, especially the issue of poverty, is one of the primary factors that influence the results of the population health in a complicated interaction of the social determinants and access to healthcare. The given work analyzed the relationship between poverty and health inequality in terms of the prevalence of chronic diseases, mental health issues, and the expected lifespan of low, middle, and high-income groups. The research was set as mixed-methods research that had a quantitative analysis (using national data sets where income, education and employment status were linked with health outcomes) and a qualitative analysis (using interviews and focus groups to represent the lived experiences of barriers to healthcare access). Quantitative data showed a sharp social gradient: the prevalence of chronic diseases was 45 and 15 percent in low-income and high-income populations, respectively, and the difference in life expectancy was 12 years. There was also an increased risk of anxiety, depression, obesity, hypertension, and diabetes with lower income, cost, provider shortage, and low health literacy; which were cited as major obstacles to qualitative evidence, in addition to psychosocial stress and social isolation. Triangulation ensured that there were similarities in the data sources. The findings underlined the importance of structural policy modification that ought to focus on healthcare access, housing, education, and community-based measures to minimize health disparities and enhance outcomes of the underprivileged groups.

Keywords: Poverty, Public Health, Chronic Diseases, Health Disparities, Social Determinants of Health

Introduction

Unjust allocations of health outcomes across different population groups happen due to a variety of community determinants, such as membership in an ethnic group, level of income, the neighborhood area and access to healthcare. The differences in earnings and education, as well as employment and social circumstances, are significant factors that give rise to health outcomes. The health outcomes of people in lower socioeconomic groups are worse due to the development of chronic diseases, mental health issues, and shorter life expectancy (Alcantara et al., 2020). Socioeconomic position has a great impact on the health status of individuals since their capacity to access basic health amenities such as quality health services, healthy food besides safe shelter and educational opportunities; which is determined by the economic status. Health disparities cannot be attributed to personal lifestyle choices alone since they are highly prevalent due to social factors such as income disparity, marginalization, and discrimination (Islam, 2019). Along with age several elements form complex interactions that influence individual health practices and environmental conditions in which individuals live and conduct their operations. Individuals with low income usually live in regions with high pollution rates and few parks and medical institutions, which adversely influence their health conditions. Based on the findings of the study, those individuals who are in a higher position of socioeconomic status (SES) are more likely to live longer and have better health outcomes than those who are lower-income. These inequalities are based on various factors that comprise public health and healthcare access, along with educational disparities, housing, employment inequalities and personal social factors such as the behavior of stress and support in the community (Zilioli et al., 2020).

Poverty is a significant factor that contributes to health disparities because it causes several health problems in the population. Poverty and health are related in direct and indirect ways. Poverty leads to

both direct and indirect effects in the form of limited access to healthcare, along with nutrition and quality of living environments, but the same problems affect other factors such as educational achievement, job opportunities and the strength of social networks that poverty influences. Poverty results in increased chronic stress levels that aggravate the conditions of hypertension and heart disease due to financial insecurity (Kraft & Kraft, 2021). Individuals in poverty are forced to live in places that are not properly sanitized, with poor housing and are exposed to harmful air pollution. This interaction of the environmental factors results in high incidences of respiratory diseases, along with cardiovascular disease and mental illnesses. The inability to access healthcare due to poverty will result in poor health outcomes, such as delayed health diagnosis and ineffective treatment outcomes and increased hospitalizations that would otherwise have been avoided (Afable et al., 2024). Individuals belonging to low-income brackets lack medical insurance or limited care facilities that provide effective medical care to manage conditions at an early stage. Economic conditions such as poverty cause mental health challenges that are manifested in high anxiety rates and depression cases, and the rate of substance abuse among the economically poor individuals (Crowley et al., 2024). Economic disparities among the groups produce significant health impacts on the mother and their children. Inability to receive prenatal care among the low-income population leads to increased maternal death, infant death, birth weight issues, and developmental delay (Poirier et al., 2022). Children born into poverty are at a greater risk of developing chronic diseases and dietary complications, and a lack of educational resources, hence permanently harming their brain and body development (Bagnall et al., 2016).

Research Objectives

This paper looks into how economic disparities especially poverty, affect chronic diseases, mental health, and life expectancy. It looks at disparities among low-, middle-, and high-income populations with a specific focus on the effects of social determinants of health, such as education, income, housing security, and healthcare access, on residents of poor neighborhoods. The paper looks into the barriers facing low-income marginal populations in Eastern India, including access to care, cost of care, and health literacy, and the way low-income stress, anxiety, and social isolation worsen physical health conditions. On the basis of these results, it proposes the implementation of public health policies to combat the causes, reduce disparities, and improve access to healthcare by disadvantaged populations.

Review of Literature

Theories on Socioeconomic Inequality and Health

These theoretical frameworks offer good information on how economic factors are related to the health of individuals and the result of community health. Different theoretical concepts were created to analyze and describe the influence of socioeconomic inequality on human health outcomes. It is not a secret that the Social Determinants of Health (SDH) model is one of the most popular frameworks that illustrate the presence of health outcomes as the primary effect of socioeconomic and political aspects that influence human life in both work and leisure spheres. The SDH framework suggests that social factors such as income level and educational attainment, along with the support systems, take genetic and behavioral explanations out of the equation in terms of defining health status (Wilderink et al., 2022).

Social Gradient in Health

Within the SDH framework, the social status raises with the rise in socioeconomic levels, and following this the health outcomes rise. The disparities in income, along with the disparities in access to resources, generate health disparities that comprise this gradient. Analysis of socioeconomic status indicates that lower socioeconomic status generates poor health outcomes, and these are attributed to inbuilt systems and structures in the society and not individual conduct.

Materialist Theory

According to the materialist theory, health consequences are determined by the living conditions that involve the quality of housing, work conditions and education. According to this perspective, the living conditions of the poor people are substandard, and this poses health hazards that lead to poorer health outcomes compared to those of people in higher social classes.

Cultural Capital Theory

The cultural capital theory by Pierre Bourdieu explains how individuals in the higher socioeconomic groups get access to more health-promoting resources, such as education opportunities and social networks, and health practice knowledge. Individuals in more privileged socioeconomic classes have access to more resources and thus have better health management opportunities.

Previous Studies on Poverty and Health Outcomes

Numerous research studies have established that poverty establishes substantial connections with many health outcomes that demonstrating that lower socioeconomic status (SES) increases the vulnerability of individuals to poor health and aggravates their pre-existing medical conditions. According to research, poverty makes individuals experience more burdens of chronic illnesses and mental health issues and a reduced lifespan than the richer sections of the population.

Chronic Diseases

The occurrence of chronic illnesses such as diabetes and hypertension, and cardiovascular disease increases amongst individuals living in poverty. Individuals who have low-income levels engage in behaviors that predispose them to chronic diseases, such as smoking tobacco products and consuming unhealthy and inactive lifestyles. Lack of healthcare services and preventive treatment results in a poorer course of the disease in this population. Individuals living in poverty have limited access to drugs and preventive screenings, and health education to ensure they are diagnosed and treated later (Zhao, 2024).

Mental Health Issues

Depression and anxiety disorders are more prevalent in the population living in poverty. The individuals who are in a poverty state endure too much mental distress since the financial difficulties are coupled with work insecurity and social alienation. The mental and emotional strain of being poor leads to physical health outcomes that cause long-term mental illness. The lack of mental health services accessible to low-income people puts up obstacles that do not allow them to receive care in time, exacerbating their overall health issues (Ventriglio et al., 2021).

Life Expectancy

Several studies have indicated that poverty decreases life expectancy since individuals in the lower income groups have shorter lives. According to the study by Zilioli et al. (2020), individuals who belong to lower classes in terms of socioeconomic status are at higher risks of premature mortality due to their lack of access to healthcare, proper nutrition, environmental poisons and social deprivation. The highest decrease in life expectancy is observed in populations with multiple disadvantages, such as racial or ethnic minorities living in poverty. The global society is affected by health disparities; however, the effects of poverty on health are also geographically uneven.

Global vs. Local Perspectives on Health Inequalities

The health care systems, along with the social protection nets in the developed countries, are used to mitigate most of the health effects among individuals living in poverty. Developing countries are undergoing various challenges due to limited funding, lack of proper healthcare facilities, and large health inequality disparities.

Health Inequalities in Developed Countries

The correlation between poverty and the health status in the United Kingdom and the United States is not so direct since these two countries have universal healthcare, public health programs and social welfare. Healthcare access through universal healthcare systems in countries, particularly the United Kingdom, is not mainly based on income, but health disparities occur due to other social determinants such as education and employment status. The systems strive to provide equitable medical care, but income-based disparities between the affluent and the poorer communities persist. Most of the health disparity trends are attributed to the differences in lifestyles and social connections, and environmental conditions (Gwatkin et al., 2017).

Health Inequalities in Developing Countries

There is a significant variation in health outcomes, with life expectancy rising 12 years (to 80 years) with income, and the lowest income bracket is 68 years.The impact of poverty on health is even worse in low-income countries since such countries have limited access to health care and an increased prevalence of infectious diseases. Studies conducted in sub-Saharan Africa alongside South Asia and Latin America have shown that poverty is the cause of high maternal and child mortality rates together with malnutrition, and infectious diseases such as malaria, tuberculosis and HIV/AIDS. The health institutions across these regions are poorly funded, and the rural and poorer communities have limited or a lack of access to the health system. The inequality in health between rich countries and poor countries proves that poverty should be viewed as a social health determinant in every part of the globe (Barreto et al., 2017).

Role of Healthcare Systems

The healthcare systems operate to relate the poverty-related factors to the population health outcomes. Universal health coverage policies and social insurance systems assist in the mitigation of poverty-related health consequences in countries with advanced economies. Even small groups of people who are marginalized cannot access quality healthcare, even though these nations have instituted universal healthcare. The fundamental health provisions that health systems in developing

countries ought to offer are low or inappropriate, which translates to poor health status among poor populations.

Methodology

Study Design

The research design of the proposed study used mixed methods that encompassed both quantitative and qualitative methods to study how poverty affects the results of public health in both depth and breadth. This amalgamation can enable not only quantitative observation of the disparities in the outcomes of poverty but also enrich the knowledge of lived experiences. The quantitative aspect examines the statistical relationship between the degree of poverty and health outcomes through the data sets that connect the measures of poverty (income, employment status, educational levels) with health outcomes (levels of chronic diseases, life expectancy, mental health statistics) using the regressions and other statistical models to identify the specific socioeconomic and health relationships.

The qualitative element involves a firsthand experience of the impoverished individuals with the help of semi-structured interviews and focus groups that were used to capture the healthcare experience of the participants, barriers to accessibility, and the view of health disparities. The associations between the categorical variables, e.g. between socio-economic status and disease prevalence, would be tested by use of chi-square tests.

Data Collection

The present research relied on both primary and secondary data sources to collect all the necessary information about poverty statistics and the outcomes in the sphere of public health. Primary sources are national health surveys like NHIS and BRFSS that contain comprehensive data on chronic disease, mental health and mortality based on socioeconomic status and case studies in low-income residential communities to investigate such issues as childhood obesity, mental health illnesses, and access to healthcare. Low-income participants were the priority during the semi-structured interviews to capture personal experiences of healthcare, perceptions of the system, and the latent side of health disparities. Secondary sources were the census data to cluster populations based on income, education, and employment and reports of the WHO, CDC, and the WHO Global Health Equity Monitor to examine health disparities globally and nationally. The integration of these sources allows identifying the general statistical trends and individual attitudes.

Data Analysis

This paper used both quantitative and qualitative arguments to evaluate the health impacts of poverty in its totality. The process of quantitative analysis starts with the descriptive statistics that describe the data in terms of measures of central tendency and dispersion, as well as the demographic distributions of income, education, and health outcomes. The socio-economic variables were associated with chronic disease, life expectancy, and mental health using multivariate regression, where the confounder's age, gender, and geography were controlled using linear and logistic models. The incidence of hypertension, diabetes, and cardiovascular disease is much higher among the lower-income population, and life expectancy is much shorter than in middle- and high-income populations. Qualitative analysis was done in Darjeeling, a district of West Bengal, in Eastern India, based on thematic analysis of the interview and focus group transcripts to achieve patterns in poverty-related health conditions and barriers to care through a coding framework to extract the main themes on health barriers and socio-economic hindrances. Triangulation in this study involved contrasting quantitative and qualitative findings to confirm the findings and yield a rich evidence-based picture of the poverty-health relationship to guide the policy formulation.

Results

Descriptive Epidemiology

Descriptive studies indicated that the population's health is socioeconomically graded. The health outcomes vary widely, with life expectancy increasing by 12 years (up to 80 years) as income increases, with the lowest income bracket at 68 years. Chronic disease prevalence in the pooled descriptive snapshot is ~45 percent among low-income groups, compared to 30 percent and 15 percent among middle- and high-income groups, respectively; mean life expectancy is 68 (low), 75 (middle), and 80 (high) years. These trends highlight a high social gradient in line with the conceptual model of the study that correlates poverty with health outcomes.

Table 1 indicates that there is a pronounced socioeconomic gradient in health, with a prevalence of chronic disease almost threefold in low-income groups as opposed to high-income groups. There is a significant variation in health outcomes, with life expectancy rising 12 years (up to 80 years) with income; the lowest income bracket stands at 68 years.

Table 1: Prevalence of chronic diseases and life expectancy by socioeconomic group

Socioeconomic Group	Prevalence of Chronic Diseases (%)	Average Life Expectancy (Years)
Low Income	45	68
Middle Income	30	75
High Income	15	80

In Figure 1, the prevalence of chronic diseases reduces progressively with the increase in socioeconomic status. The largest burden is experienced by the low-income populations (45%), middle-income (30%) and high-income populations (15%). The evident negative slope shows the close relationship between the risk of chronic diseases and the level of income.

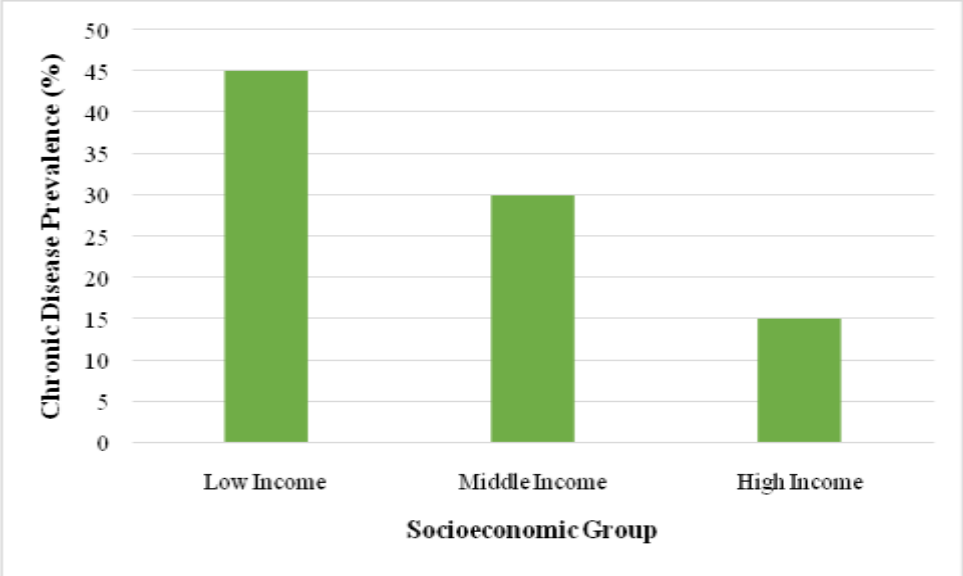

Figure 1: Chronic disease prevalence (%) by socioeconomic group

Multivariate Associations

Multivariate models showed that every rung of the income ladder corresponds to a 15 percent increase in the risk of developing chronic disease (adjusted, $p<0.01$). There is also a 20 percent increased chance of anxiety or depression (adjusted, $p<0.05$) with lower income. The income longevity gradient persists even after accounting for age, sex, and geography, with the lowest income bracket having a lifespan of ~10 years less than the highest of the brackets. These associations are preserved on sensitivity checks as referenced in the text of the manuscript.

Table 2 includes a summary of the statistical associations between socioeconomic status and relevant health outcomes. The regression analysis demonstrates significant growth of risks of chronic disease and mental health, as well as a 12-year difference in life expectancy as income decreases. Chi-square tests show that the lowest-income group has a higher prevalence of obesity, hypertension, and diabetes, which proves the high level of health disparity.

Table 2: Summary of Multivariate & Categorical Findings

Outcome	Effect / Association	Reported p-value / Note
Chronic diseases (per step down in income level)	+15% risk	$p < 0.01$ (adjusted)
Anxiety & depression (low vs higher income)	+20% risk	$p < 0.05$ (adjusted)
Life expectancy (lowest vs highest income)	-12 years	Persistent across strata
Obesity by SES (categorical association)	Higher in the lowest income group	$p < 0.01$
Hypertension by SES (categorical association)	Higher in the lowest income group	$p < 0.05$
Diabetes by SES (categorical association)	Higher in the lowest income group	Significant (value not specified)

Figure 2 indicates that there is a positive relationship between socioeconomic status and life expectancy. People in the high-income category have a 12-years longer life expectancy than the low-

income category. This gradient is a measure of the accretion of healthcare access, living conditions and resources that augment survival and the health outcomes of the total population.

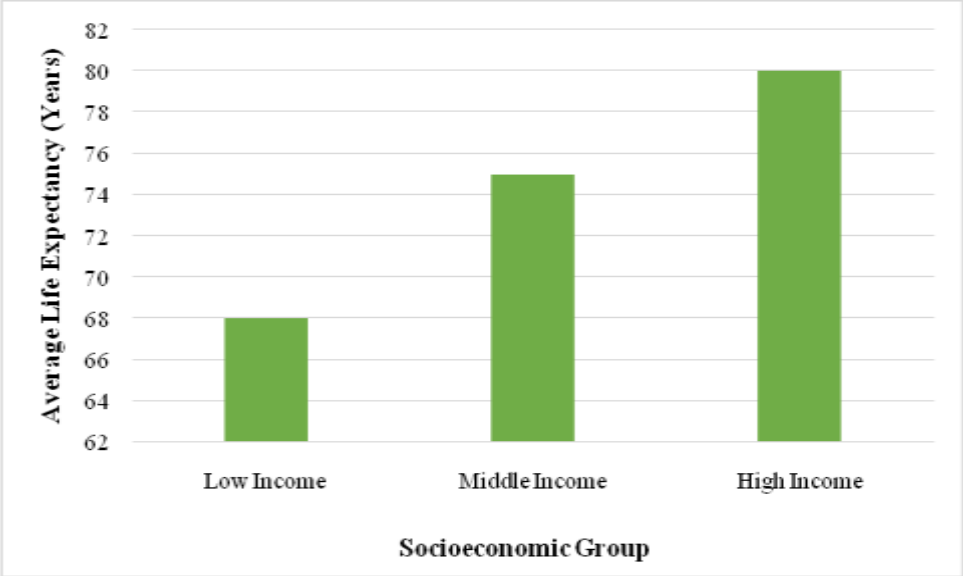

Figure 2: Average Life Expectancy by Socioeconomic Group

Categorical Associations (Chi-square)

Chi-square tests promoted the presence of strong connections between socioeconomic status and some health conditions. Obesity risks are much higher in the lowest-income group ($p<0.01$) as well as hypertension ($p<0.05$), although diabetes is also increased (significant; exact p not mentioned in text). These categorical results are triangulated with the regression results, and this strengthens SES as a major stratifier of morbidity as presented in Table 2.

Qualitative Synthesis

Cost, provider shortages, and weak health literacy all emerged as common obstacles to care in interviews and focus groups and add to the burden of disease and slow the pace of treatment. The respondents report chronic stress, insomnia, isolation, and these conditions tend to go hand in hand with mistrust of the health system. The risks are partly mitigated by community resources: increasing access to preventive services, community health clinics, and grassroots social support networks helps to reduce isolation, although both are undermined by capacity limitations and delays. These stories explain some of how poverty increases risk and expands the quantitative differences that are seen.

Discussion

The results verify the existence of a strong and graded correlation between poverty and poor health outcomes. Quantitative analysis indicated that every income level decrement raises the risk of chronic diseases by 15%, which is in line with the opinion that socioeconomic status is one of the main factors influencing physical health outcomes (Sapkota et al., 2021). The likelihood of anxiety and depression was 20 percent greater among low-income people, consistent with the fact that economic insecurity and social alienation are deteriorating mental health conditions (Makwana, 2019). Disparities in life expectancy by 7-10 years according to income group reflect earlier reporting of social group inequities related to access to health care, environment, and diet (GBD US Health Disparities Collaborators, 2022). The fact that cost, provider shortages, low health literacy and so on are major barriers was supported by qualitative data, as past studies on the economic barriers to healthcare have found (Lazar et al., 2018). Social detachment and psychosocial stress also negatively affect disadvantaged populations, which confirm the results of Thomas et al. (2020) concerning the impact of poverty-related stress.

The health disparities in the study are quite similar to those that were mentioned in the literature before regarding the higher levels of hypertension, diabetes, and cardiovascular disease among the lower-income population (Sapkota et al., 2021). The mental health condition in the scenario of poverty-linked stress and isolation is repeating Makwana (2019), and the life expectancy difference is repeating GBD US Health Disparities Collaborators (2022). The adverse attitudes and distrust towards the healthcare system, as mentioned by the participants, correlate with Lazar et al. (2018), who proved that healthcare utilization is determined by cost and access challenges. The recognition of the psychosocial factors as the key determinants

reflects a similar argument by Thomas et al. (2020) that stress and insecurity have a direct impact on physical and mental health. These findings also align with the community-based evidence that indicates that the underserved groups can be made more accessible and attain improved results with specific interventions (Ko et al., 2023).

Structural changes are necessary to deal with health disparities caused by poverty. The initial step that must be taken is to increase access to affordable health insurance coverage and increase the number of providers in underserved regions, and invest in health literacy initiatives (Jindal et al., 2023). Since the prevalence of mental health conditions is high among low-income groups of the population (Makwana, 2019), it is essential to provide behavioral health services within primary care in such communities. The policy frameworks should also respond to social factors, which have been associated with disparities in life expectancy for a long time, including housing security, environmental quality, and nutrition (GBD US Health Disparities Collaborators, 2022). Interventions applied at the community level, such as mobile health units and local clinics, which Ko et al. (2023) outline, must be increased to shorten waitlists and expand the area of service. Such measures can be used to overcome structural barriers noted by Lazar et al. (2018) and improve trust and engagement in the healthcare systems.

Limitations

The evidence base is comprised of the secondary data, which are only a part of the evidence base and may include little representation of some subpopulations or may have insufficient ability to measure some contextual factors influencing access and outcomes. The qualitative sample was deliberately narrowed down to low-income communities and was rather small, which reduces the transferability of the results to any other context. Some measures, especially stress and symptoms of mental health, are self-report questionnaire-based and may be inconsistent with clinical diagnoses or have a reporting bias. It is mostly a cross-sectional analytic design that favors strong associations, but not temporal precedence or causation. Lastly, our categorical tests show significance in obesity and hypertension, whereas the diabetes association does not give a specific p-value in the narrative, which limits formal comparison among conditions.

Future Directions

Future research directions should be based on longitudinal designs that would track the relationships between income mobility and shocks and health trajectories and disentangle the mediation by stress, social isolation, and health literacy. In quasi-experimental studies of causal effect on access, adherence and disease control, supply-side (e.g., clinic expansions, integrated behavioral health) and demand-side subsidy interventions would be estimated. The mixed-methods research is supposed to explore further the aspects of trust and patient-provider communication, along with community co-design interventions. The growth of analytic granularity, in terms of neighborhood context, rurality, and intersecting identities, will make targeting more precise. Lastly, it should be ensured that implementation research tests scalable community-based models that integrate prevention, chronic-care management, and social supports with consideration of capacity, wait times, and sustainability.

Conclusion

The evidence shows that there is a long-term and quantifiable association between poverty and poor health outcomes, which are also defined by a definite socioeconomic gradient in the rate of chronic diseases and life expectancy. The quantitative findings concluded that risks of chronic diseases, mental health, and premature death are considerably elevated with decreased income levels, and they exist even after controlling for demographic and geographic factors. Categorical analyses also indicated that there was a significant association between low socioeconomic status and obesity, high blood pressure and diabetes, supporting the view that poverty is a critical determinant of morbidity. Qualitative evidence showed that financial barriers, poor access to providers, and a lack of health literacy increase the disparities, and psychosocial stress and social isolation add to health condition deterioration. Evidence that these disadvantages can be reduced, but not eradicated, by local interventions is found through the identification of community-based health resources. Multifaceted interventions, which include the growth of the healthcare system, education, social support, and policy modifications that will dismantle structural inequalities, will be solid responses. Such systemic barriers should be mitigated, which will decrease health disparities, extend life expectancy, and improve the quality of life of the marginalized groups. The long-term commitment of various sectors is needed in order to convert these findings into practical solutions that will provide long-term equity for the population.

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