International Journal of Multidisciplinary Research and Bulletin
Volume 3 Issue 1 (Jan – Feb) 2024

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Demographic and Epidemiological Trends in Mortality in Jamaica, 1970–2024: A Comparative Analysis with Global Patterns

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Article Publication Details

This article is published in the **International Journal of Multidisciplinary Research and Bulletin**, ISSN 3108-1428 (Online) Volume 3 Issue 1 (Jan – Feb) 2024.

ABSTRACT

This study examines the demographic profile of mortality in Jamaica from 1970 to 2024, analysing trends across age, sex, urban–rural location, and cause of death. Using secondary data from the Statistical Institute of Jamaica (STATIN), the World Bank, the World Health Organisation (WHO), and the United Nations Population Division, the study presents a longitudinal analysis spanning five decades. Crude death rates in Jamaica declined from 8.47 per 1,000 in 1970 to 7.75 in 2024, reflecting overall improvements in public health infrastructure, sanitation, and healthcare access. Life expectancy increased from 69.0 to 75.0 years, while infant and under-five mortality rates fell dramatically from 40.0 and 55.0 per 1,000 live births in 1970 to 10.48 and 12.8 per 1,000 live births, respectively, indicating substantial progress in child health. Age-specific mortality decreased sharply among children, moderately among adults, and remained higher among older people, highlighting the need for targeted interventions. Gender-specific analysis revealed persistently higher male mortality compared to females, while urban populations exhibited slightly higher mortality than rural counterparts, indicating disparities in risk exposure and healthcare access. Epidemiological transition was evident, with infectious disease mortality declining significantly and non-communicable diseases emerging as the leading cause of death. External causes, including violence and accidents, remained relatively high, particularly among younger adults. Comparative analysis with global trends shows that Jamaica outperforms global averages in life expectancy and child survival, but faces challenges with non-communicable and external cause mortality. These findings underscore the effectiveness of Jamaica's public health policies while highlighting areas requiring targeted interventions and sustained health system investments.

Keywords: mortality, Jamaica, life expectancy, infant mortality, non-communicable diseases, epidemiological transition, global comparison

Introduction

Mortality is one of the most critical indicators of a population's health, reflecting the interplay between biological, social, and environmental determinants (Bongaarts & Watkins, 1996; Caldwell, 1986; Coale & Demeny, 1983; Omran, 1971; Ozieh et al., 2021; Preston, 1976; Reidpath & Allotey, 2003; Riley, 2001; Salgado et al., 2020; Weeks, 2021; World Health Organization, 2013). Understanding mortality patterns provides insights into population health, disease burden, and the effectiveness of healthcare systems over time. Jamaica has experienced substantial demographic changes from 1970 to 2024, shaped by economic, social, and public health developments. The nation has witnessed improvements in sanitation, healthcare delivery, and vaccination programmes, which have contributed to declining mortality rates. Despite these gains, mortality remains influenced by factors such as urbanisation, socioeconomic inequality, and emerging non-communicable diseases. Comparing Jamaica's mortality trends with global averages provides a contextual framework to evaluate the nation's health outcomes relative to international benchmarks. Such analysis can inform policy interventions, resource allocation, and targeted programmes aimed at reducing preventable deaths.

Over the past five decades, Jamaica has undergone a demographic transition characterised by declining infant and child mortality and rising life expectancy. This shift is consistent with the classic demographic transition model first proposed by Notestein (1945), which describes a move from high fertility and mortality to lower levels as societies modernise. Jamaica's experience also aligns with Omran's (1971) epidemiologic transition theory, in which infectious diseases as primary causes of death give way to chronic and degenerative diseases. Historical studies confirm that such mortality declines are integral to broader patterns of health improvement (Preston, 1976; Riley, 2001). Empirical evidence from the World Bank (2024a, 2024b) and WHO (2023) shows sustained increases in Jamaican life expectancy from the 1970s to the present, alongside marked reductions in infant mortality. These improvements reflect global trends, albeit at a pace influenced by Jamaica's unique social and economic conditions (United Nations, 2019). Scholars such as Caldwell (1986) have argued that mortality decline in developing societies reflects both medical interventions and shifts in social structures, offering a valuable lens for understanding Jamaica's demographic transition.

Mortality reduction in Jamaica has not been uniform, with disparities evident across age groups, sexes, and geographic locations. Historically, infectious diseases were the leading causes of death, but Jamaica's epidemiological profile has shifted towards non-communicable diseases and external causes, consistent

with Omran's (1971) theory of the epidemiologic transition. Global and regional analyses confirm that many Caribbean countries, including Jamaica, are experiencing rising burdens of chronic illnesses such as cardiovascular disease and diabetes (Bourne & McGrowder, 2009; PAHO, 2023; WHO, 2023). These shifts are part of broader demographic and epidemiological transitions that have been documented worldwide (Preston, 1976; Riley, 2001). Understanding these complex patterns requires longitudinal analysis using robust national and international datasets, such as those maintained by the World Bank (2024) and the United Nations (2019). Comparative studies highlight areas where Jamaica's mortality trends align with global experiences, but also where divergences emerge, particularly in homicide and injury-related mortality. Moreover, disaggregating mortality by age and sex helps identify vulnerable subpopulations who may require targeted interventions, underscoring the importance of a data-driven approach for public health planning.

Infant and under-five mortality have historically served as key indicators of healthcare quality and social development, providing insights into broader population health (Coale & Demeny, 1983; WHO, 2023). Reductions in these rates reflect improvements in maternal health, vaccination coverage, and access to healthcare facilities, which are recognised as pivotal determinants of child survival (Black et al., 2013). Jamaica has made substantial progress in reducing child mortality since the 1970s, with evidence showing declines in both infant and under-five mortality rates. However, challenges remain in preventing neonatal deaths and addressing disparities between rural and urban populations (World Bank, 2024c; PAHO, 2023). Age-specific mortality patterns reveal that while children benefit from improved health services, adult and elderly populations face increasing mortality from chronic diseases, a feature of the epidemiological transition described globally (Riley, 2001; United Nations, 2019). Gender differences in mortality further highlight the need for interventions targeted at men, who consistently exhibit higher mortality across age groups due to risk behaviours and social determinants (PAHO, 2023; WHO, 2023). Urban populations are also at greater risk from environmental hazards, violence, and lifestyle-related diseases, underscoring the importance of policies tailored to specific geographic and social contexts (Black et al., 2013; PAHO, 2023). This study contextualises Jamaica's demographic trends within broader global mortality patterns, allowing for comparative insights into progress and remaining vulnerabilities.

Cause-specific mortality provides valuable insight into the underlying health challenges facing a population and reflects both medical and social change (Preston, 1976; WHO, 2023). In Jamaica, infectious diseases, non-communicable diseases (NCDs), and external causes have dominated the mortality profile at different stages of development, a pattern consistent with the epidemiologic transition described by Omran (1971). The decline in infectious disease mortality highlights public health successes such as vaccination programmes, improved sanitation, and expanded healthcare access, while the rise in

NCDs underscores the influence of lifestyle changes, ageing, and urbanisation (PAHO, 2023; Riley, 2001). External causes, particularly road traffic injuries and violence, remain persistent concerns and disproportionately affect younger males, reflecting social vulnerabilities and behavioural risks (World Bank, 2024; PAHO, 2023). Comparing Jamaica with global trends reveals that while the country has achieved notable reductions in infectious disease mortality, its high burden of external causes, especially violence, exceeds global averages (WHO, 2023; United Nations, 2019). These comparative analyses help identify areas where Jamaica outperforms or lags behind international benchmarks, thereby informing priorities for health interventions and resource allocation. Evaluating these patterns over multiple decades enables a comprehensive understanding of Jamaica's health trajectory and provides critical evidence for targeted policy development (Omran, 1971; Preston, 1976).

The purpose of this study is to provide a detailed demographic analysis of mortality in Jamaica from 1970 to 2024, with comparisons to global averages. By examining mortality by age, sex, urban–rural location, and cause of death, the study seeks to identify key trends, successes, and ongoing challenges, consistent with the analytical traditions established in demographic research (Preston, 1976; Omran, 1971). Data are presented in tabular form, with interpretations preceding each table to ensure clarity and contextual understanding, reflecting best practices in epidemiological reporting (WHO, 2023; World Bank, 2024b). The findings are intended to inform health policymakers, researchers, and public health practitioners about effective interventions that address both national and regional health priorities (PAHO, 2023). Additionally, the comparative approach highlights Jamaica's position relative to international standards, providing lessons for other developing countries navigating similar demographic and health transitions (United Nations, 2019; Riley, 2001). The study emphasises the continued importance of investment in healthcare infrastructure, preventive programmes, and innovative policy solutions to sustain health gains and reduce disparities. Ultimately, this paper contributes to understanding Jamaica's mortality transition, situating the country within broader global health trajectories while identifying strategies for sustainable improvements in population health (WHO, 2023; PAHO, 2023).

Theoretical Framework

Understanding mortality trends in Jamaica requires a theoretical foundation that integrates demographic transition theory with epidemiological frameworks. The demographic transition theory posits that a society progresses through stages of mortality and fertility decline, resulting in changes in population structure and life expectancy (WHO, 2024a). In Jamaica, improvements in sanitation, healthcare access, and socioeconomic conditions have led to reductions in infant and child mortality, marking the second stage of the demographic transition (PAHO, 2024). This theory provides a lens to interpret the shift from

high mortality dominated by infectious diseases to lower mortality characterised by non-communicable diseases and external causes (WHO, 2024b). Applying this framework helps to contextualise Jamaica's evolving mortality profile in both a temporal and structural sense. Furthermore, it allows policymakers to anticipate future health challenges associated with population ageing and urbanisation. The demographic transition model, therefore, forms a foundational perspective for examining national mortality trends.

Epidemiologic transition theory complements the demographic transition by focusing on changes in cause-specific mortality over time (WHO, 2024b). According to this theory, societies shift from a predominance of infectious and nutritional deficiency diseases to chronic, non-communicable diseases as primary causes of death (WHO, 2024b). In Jamaica, the rise in cardiovascular disease, diabetes, and cancer illustrates this transition and highlights the health implications of modernisation, lifestyle changes, and urbanisation (PAHO, 2024). External causes, including accidents and violence, also become increasingly significant during this stage, particularly among young adults (WHO, 2024c). Epidemiologic transition theory, therefore, provides a framework for understanding the distribution of mortality by cause and demographic factors. It also emphasises the importance of health system adaptation to emerging disease burdens. Integrating this theory into analysis enables researchers to interpret both historical trends and current mortality patterns.

Social determinants of health theory further enriches the understanding of mortality trends by examining how socioeconomic, environmental, and behavioural factors influence health outcomes (WHO, 2024c). Factors such as income, education, occupation, and access to healthcare services shape individual and population-level mortality risks (WHO, 2024b). In Jamaica, urban-rural disparities, gender differences, and socioeconomic inequities significantly affect mortality outcomes, highlighting the relevance of this theory (PAHO, 2024). For instance, males are disproportionately affected by violence-related deaths, while rural populations face barriers to accessing timely medical care (WHO, 2024c). By incorporating social determinants, researchers can identify the structural and contextual factors that contribute to observed mortality patterns. This approach highlights the necessity for policy interventions that address the underlying causes of health inequities. Social determinants theory, therefore, complements demographic and epidemiologic perspectives by adding a socio-environmental dimension.

Life course theory provides an additional lens for understanding mortality by examining how exposures and experiences across various life stages impact health outcomes (WHO, 2024a). Early-life interventions, such as maternal and child health programmes, have long-term impacts on life expectancy and susceptibility to chronic diseases (PAHO, 2024). In Jamaica, improvements in infant and child survival contribute to increased adult life expectancy, illustrating the cumulative effects of early-life

health interventions (WHO, 2024b). Life course theory also highlights the importance of interventions during adolescence and adulthood to mitigate risk factors for non-communicable diseases and injuries (WHO, 2024c). This perspective aligns with the observed demographic and epidemiological transitions, illustrating how mortality patterns evolve throughout the lifespan. Applying life course theory allows for a more comprehensive understanding of the timing and impact of health interventions. It underscores the importance of developing integrated policies that address health risks across all age groups.

Finally, health systems theory contextualises mortality trends by examining how healthcare delivery, policy, and organisational structures influence population health (WHO, 2024b). Effective health systems provide preventive, curative, and rehabilitative services, ensuring equitable access to care across populations (WHO, 2024c). In Jamaica, successes in reducing infectious disease mortality and improving child survival reflect the effectiveness of strong primary healthcare programmes and targeted public health interventions (PAHO, 2024). However, rising mortality from non-communicable diseases and external causes indicates areas where health systems must adapt and strengthen their services (WHO, 2024b). Integrating demographic, epidemiologic, social determinants, and life course perspectives within a health systems framework enables a holistic analysis of mortality trends. This comprehensive theoretical approach provides a robust foundation for interpreting findings and guiding policy recommendations. Overall, combining these frameworks supports a nuanced understanding of Jamaica's mortality dynamics and informs evidence-based health planning.

Literature Review

Jamaica has made significant strides in improving public health over the past few decades. Life expectancy at birth in Jamaica has increased from approximately 69 years in 1970 to 75 years in 2023 (World Health Organisation [WHO], 2024a; Macrotrends, n.d.). This improvement reflects advancements in healthcare infrastructure, sanitation, and socioeconomic conditions. The reduction in infant and under-five mortality rates further underscores these gains (Pan American Health Organisation [PAHO], 2024). However, challenges remain, particularly concerning non-communicable diseases (NCDs) and external causes of death. NCDs account for a significant portion of mortality in Jamaica, with cardiovascular diseases and diabetes being prominent contributors (WHO, 2024b). Addressing these issues requires targeted public health interventions and policy reforms.

The epidemiological transition in Jamaica mirrors global patterns, with a shift from infectious diseases to NCDs as leading causes of death. This transition is characterised by an increase in life expectancy and a decrease in mortality from communicable diseases (WHO, 2024c). PAHO highlights that, between 2006 and 2020, Jamaica's infant mortality rate decreased from 21.1 to 16.7 deaths per 1,000 live births,

reflecting improved maternal and child health services (PAHO, 2024). Despite these advancements, the burden of NCDs continues to rise, necessitating comprehensive strategies to address risk factors such as tobacco use, physical inactivity, and unhealthy diets (WHO, 2024b). Integrating NCD prevention into primary healthcare systems is essential to mitigate this growing threat (WHO, 2024b). Furthermore, WHO's Global Health Estimates provide detailed data on cause-specific mortality, offering valuable insights for policy development (WHO, 2024a). The transition highlights the need for adaptable health strategies that respond to evolving mortality trends.

Gender disparities in mortality rates persist in Jamaica, with males exhibiting higher mortality across various age groups. Life expectancy for men is 72 years, while for women it is 76 years (PAHO, 2024). These differences are influenced by factors such as higher rates of risk-taking behaviours, occupational hazards, and lower healthcare utilisation among men. Addressing these disparities requires gender-sensitive health policies and interventions that promote healthy lifestyles and improve access to healthcare services for men (WHO, 2024b). WHO's Global Health Estimates provide data on gender-specific mortality trends, aiding in the development of targeted interventions (WHO, 2024a). Additionally, WHO's Country Cooperation Strategy for Jamaica outlines priorities for reducing health inequities, including addressing gender disparities in health outcomes (WHO, 2024c). Such insights are critical for planning effective public health programmes.

Urban-rural health disparities are evident in Jamaica, with urban populations experiencing higher mortality rates than their rural counterparts. WHO attributes this to factors such as exposure to violence, environmental hazards, and lifestyle-related diseases prevalent in urban areas (WHO, 2024c). Conversely, rural populations face challenges related to healthcare accessibility, transportation, and emergency services (WHO, 2024c). WHO's Country Cooperation Strategy for Jamaica emphasises the need for equitable healthcare delivery to address these disparities (WHO, 2024c). Additionally, WHO's Global Health Estimates provide data on mortality rates by geographic location, offering insights into regional health inequities (WHO, 2024a). Addressing these disparities requires targeted interventions that consider the distinct needs of both urban and rural populations. Such measures are crucial to ensuring equitable access and health outcomes nationwide.

The rise in non-communicable diseases in Jamaica is a significant public health concern. NCDs account for a substantial proportion of deaths in the country, with cardiovascular diseases, diabetes, and cancer being the leading contributors (WHO, 2024b). WHO's Global Health Estimates detail the burden of NCDs, including years of life lost and disability-adjusted life years (WHO, 2024a). Addressing the NCD epidemic requires a multifaceted approach, including lifestyle modification, early detection, and chronic

disease management (WHO, 2024b). WHO's Global Action Plan for the Prevention and Control of NCDs outlines strategies for reducing the burden of these diseases, emphasising the role of health systems in implementing these interventions (WHO, 2024b). The Country Cooperation Strategy for Jamaica emphasises the need to strengthen health systems in managing the growing burden of NCDs (WHO, 2024c). Comprehensive and sustained interventions are essential to mitigate the growing impact of NCDs on the population.

In conclusion, while Jamaica has made commendable progress in improving public health, challenges remain in addressing the rising burden of NCDs and health disparities. WHO's Global Health Estimates provide valuable data on mortality trends, aiding in the identification of priority areas for intervention (WHO, 2024a). PAHO's Health in the Americas report underscores the importance of continued efforts to reduce infant mortality and improve maternal health (PAHO, 2024). Addressing gender and urban-rural health disparities requires targeted policies and interventions that promote equity in healthcare access and outcomes (WHO, 2024c). Collaboration among national governments, international organisations, and communities is essential to sustain and build upon the health gains achieved in Jamaica (WHO, 2024b). Such coordinated efforts ensure that progress in population health is maintained. Overall, the literature highlights the critical need for evidence-based, equity-focused public health strategies.

Methodology

This study utilises secondary data sources to analyse mortality trends in Jamaica from 1970 to 2024. Primary sources include the Statistical Institute of Jamaica (STATIN, n.d.), which provides annual vital statistics on births, deaths, and causes of death. Complementary global data were obtained from the World Bank (n.d), World Health Organisation (WHO, n.d), and United Nations Population Division (n.d) to allow comparative analyses. Mortality indicators analysed include crude death rates (CDR), life expectancy at birth for Jamaicans (Macrotrends, n.d.), infant and under-five mortality, age-specific mortality, gender-specific mortality, urban–rural mortality, and cause-specific mortality. Data were extracted for selected decades to ensure consistency and reduce reporting bias, providing a longitudinal view over five decades. These datasets are recognised for their reliability, comparability, and wide usage in demographic and public health research. By combining national and international data, the study ensures a robust and contextualised analysis of mortality trends.

Crude death rates were calculated per 1,000 population to assess overall mortality trends. Life expectancy at birth was extracted as an indicator of population longevity, reflecting health system performance and socioeconomic conditions. Infant and under-five mortality rates were analysed as key indicators of child survival, maternal health, and healthcare quality. Age-specific mortality rates were examined to identify

vulnerable age groups and evaluate the impact of public health interventions over time. Gender-specific mortality analysis allowed the study to explore disparities between males and females in terms of longevity and causes of death. Urban–rural mortality rates were compared to understand geographic differences in health outcomes and access to services. Cause-specific mortality, including infectious diseases, non-communicable diseases, and external causes, was analysed to examine the epidemiological transition in Jamaica.

Data presentation was structured in tabular format, with each table preceded by a detailed interpretation to provide clarity and context. Comparative analyses were conducted using global averages for similar indicators, allowing Jamaica's performance to be evaluated against international benchmarks. Descriptive statistical methods, including trend analysis and percentage change calculations, were used to identify patterns, improvements, and emerging challenges. The temporal framework enabled the identification of periods of accelerated progress or stagnation, which were linked to socioeconomic, environmental, and policy factors. Where necessary, minor adjustments were made to ensure consistency in definitions and reporting across datasets. The approach prioritised transparency, allowing readers to interpret the data directly and compare findings with global trends. This method provides a comprehensive and longitudinal perspective on mortality dynamics in Jamaica.

Limitations of the methodology include reliance on secondary data, which may be subject to reporting errors, underregistration, and inconsistencies over time. Historical cause-specific mortality data, particularly for earlier decades, may be less precise due to diagnostic limitations and incomplete record-keeping. Differences in global data collection methods may affect direct comparisons, although the use of WHO and UN data mitigates significant discrepancies. Urban–rural classifications may have changed over time, reflecting population growth and migration, which could influence mortality comparisons. Despite these limitations, the study's reliance on multiple validated sources strengthens the reliability of the findings. The longitudinal approach reduces the impact of short-term fluctuations and highlights persistent trends over decades. Care was taken to ensure that interpretations were evidence-based and aligned with both national and international contexts.

Ethical considerations were minimal, as the study relied exclusively on publicly available aggregated data with no individual identifiers. All data were handled in accordance with standard academic and research guidelines, ensuring accurate representation and responsible interpretation. The comparative design enabled the study to situate Jamaican mortality trends within a broader global context, thereby enhancing policy relevance. Findings were interpreted in light of historical public health interventions, socioeconomic developments, and epidemiological transitions. The methodology enables identification of

priority areas for policy action, including child health, non-communicable diseases, and injury prevention. By combining descriptive statistics, longitudinal trend analysis, and global comparisons, the study provides a holistic understanding of mortality in Jamaica. Ultimately, this methodological framework supports evidence-based decision-making and informs future public health planning.

Findings

Historical Overview of Mortality in Jamaica

Crude death rates (CDR) in Jamaica have demonstrated a consistent decline from 8.47 per 1,000 population in 1970 to 7.75 in 2024 (Table 1). This gradual reduction reflects improvements in healthcare infrastructure, public health interventions, and socioeconomic conditions over the past five decades. Declines in infectious disease mortality, improvements in sanitation, and increased access to medical services have contributed substantially to this trend. The reduction in CDR also corresponds with increases in life expectancy, which rose from 69.0 years in 1970 to 75.0 years in 2024. These trends indicate overall improvements in population health, with fewer deaths occurring in younger age groups and more people surviving into older age. Periodic fluctuations in CDR can be attributed to factors such as economic downturns, epidemics, and natural disasters, which temporarily increase mortality. The data suggest that Jamaica has achieved significant gains in reducing overall mortality, aligning with patterns observed in other developing nations undergoing demographic transition.

Life expectancy at birth has shown a steady upward trajectory over the study period, rising from 69.0 years in 1970 to 75.0 years in 2024 (Table 1). Increases in life expectancy reflect cumulative improvements in child survival, disease prevention, and healthcare accessibility. Expanded vaccination programmes, improved maternal care, and public health education have played key roles in extending life expectancy. Economic growth and improved nutrition have also contributed to healthier populations, supporting longevity. The consistent rise in life expectancy mirrors global trends, although Jamaica has slightly exceeded global averages for much of the study period. These gains underscore the effectiveness of long-term health interventions and social development policies. However, the rise in non-communicable diseases presents emerging challenges to sustaining further increases in life expectancy.

Infant mortality rate (IMR) and under-five mortality rate (U5MR) have declined sharply from 40.0 and 55.0 per 1,000 live births in 1970 to 10.48 and 12.8 per 1,000 live births in 2024, respectively (Table 2). These declines reflect substantial progress in maternal and child health, vaccination coverage, and neonatal care. The reductions in IMR and U5MR exceed global averages for comparable periods, indicating Jamaica's effective implementation of child health interventions. Improvements in sanitation,

nutrition, and access to healthcare facilities have also contributed to better child survival outcomes. Periodic minor increases in these rates can be linked to economic disruptions or disease outbreaks that temporarily affect child health. The sustained reduction over five decades highlights the success of national policies targeting vulnerable populations. These trends suggest that targeted health interventions can result in sustained improvements in child survival.

Age-specific mortality reveals that declines have been most pronounced among children aged 0–14 years, with moderate reductions among adults aged 15–59, and persistently high mortality among the elderly aged 60 and above (Table 3). The dramatic decrease in child mortality reflects the success of public health programmes, including immunisation campaigns and improvements in maternal care. Adult mortality has decreased due to better management of infectious diseases and gradual improvements in healthcare access, though chronic conditions such as cardiovascular disease and diabetes have limited further reductions. Elderly mortality remains high due to age-related vulnerabilities and the increasing prevalence of non-communicable diseases. These patterns mirror global demographic transitions, where mortality reductions typically begin with younger age groups. The data suggest that while child health policies have been highly effective, adult and elderly populations require enhanced interventions to reduce preventable deaths. Addressing mortality among adults and the elderly is crucial for enhancing overall life expectancy and improving population health outcomes.

The historical mortality trends in Jamaica reflect a complex interplay of health, socioeconomic, and environmental factors. Reductions in crude death rates and child mortality, coupled with rising life expectancy, illustrate significant public health progress over the past five decades. The epidemiological transition from infectious to non-communicable diseases highlights emerging challenges for health policy and resource allocation. Mortality declines have been achieved through targeted interventions, improvements in healthcare access, and broader social development initiatives. Nevertheless, persistent mortality and disparities in specific populations among adults and older people underscore the need for ongoing health system strengthening. Comparative analysis with global trends shows that Jamaica has generally outperformed global averages in life expectancy and child survival while facing similar challenges in managing chronic diseases. Overall, the historical overview provides a foundation for understanding current mortality dynamics and informs strategies for continued improvement in population health.

Demographic Breakdown of Mortality

Gender-specific mortality patterns in Jamaica indicate consistently higher mortality among males compared to females over the past five decades (Table 4). In 1970, the male mortality rate was 8.9 per

1,000 population, compared to 7.8 for females. By 2024, this gap persisted, with rates of 8.0 and 7.2, respectively. Biological factors, such as differences in immune response and hormonal influences, contribute to this male disadvantage. Behavioural factors, including higher rates of smoking, alcohol consumption, and occupational hazards, further exacerbate male mortality. Social determinants, including reduced healthcare utilisation among men, also play a role in this disparity. Globally, similar patterns are observed, with males exhibiting higher mortality across almost all age groups. These findings highlight the importance of targeted health interventions, awareness campaigns, and preventive care focused on male populations to reduce premature deaths.

Urban and rural mortality trends in Jamaica reveal slight but persistent differences over the study period, with urban populations generally experiencing higher mortality rates (Table 5). In 1970, urban mortality was 9.0 per 1,000, compared to 8.1 in rural areas. By 2024, the rates had decreased to 7.9 and 7.4, respectively. Urban mortality is influenced by factors such as higher population density, exposure to pollution, and increased rates of violence and accidents. Conversely, rural areas benefit from lower exposure to environmental hazards but face challenges related to healthcare accessibility and infrastructure. Over time, improvements in rural healthcare services have narrowed this urban–rural gap. The trends suggest that location-specific health interventions are necessary to address unique risk factors in urban settings. Comparative global data indicate that urban mortality is higher in many developing countries, reflecting similar socio-environmental influences.

Age-specific mortality analysis demonstrates that declines have been most significant among children and adolescents, with more modest improvements among adults and the elderly (Table 3). Mortality rates for children under five decreased dramatically, reflecting effective vaccination campaigns, maternal health programmes, and improved sanitation. Adult mortality reductions are primarily attributable to better management of infectious diseases and broader access to healthcare services. However, non-communicable diseases, including cardiovascular conditions and diabetes, have limited further reductions in adult mortality. Elderly populations continue to experience high mortality due to age-related vulnerabilities and the growing burden of chronic illnesses. These patterns are consistent with global demographic transitions, where mortality reductions occur first in younger age groups. Targeted interventions for adult and elderly populations are therefore critical to achieving sustained improvements in overall population health.

Gender intersects with age and location to further influence mortality patterns in Jamaica. Male mortality is particularly high among young and middle-aged adults, mainly due to external causes such as accidents, violence, and occupational hazards (Table 12). Female mortality tends to increase more

gradually with age, reflecting both biological longevity advantages and differences in exposure to risk factors. Urban males are especially vulnerable to injury-related deaths, while rural populations face challenges related to chronic disease management and healthcare access. Understanding these intersecting demographic factors is crucial for designing effective public health strategies. Targeted interventions, such as violence prevention programmes, occupational safety regulations, and chronic disease management initiatives, are necessary to address these disparities. Globally, similar patterns emerge, but Jamaica exhibits higher external cause mortality than many countries, highlighting a critical public health priority.

Overall, the demographic breakdown of mortality in Jamaica underscores persistent disparities by sex, age, and geographic location. Males consistently experience higher mortality than females, urban populations face elevated risks compared to rural counterparts, and elderly populations remain vulnerable to chronic diseases. While child and adolescent mortality have declined sharply, adult and elderly mortality reductions have been slower, reflecting the growing impact of non-communicable diseases. These trends emphasise the need for targeted health policies that address demographic vulnerabilities and reduce premature deaths. The intersectionality of gender, age, and location offers a nuanced understanding of mortality patterns that can inform effective interventions. Comparisons with global trends suggest that Jamaica has made notable progress, particularly in reducing child mortality, yet continues to face challenges with adult male and urban mortality. This demographic analysis informs future public health planning, ensuring that interventions are tailored to the populations most at risk.

Leading Causes of Mortality

Jamaica has undergone a significant epidemiological transition over the past five decades, with infectious diseases declining and non-communicable diseases becoming the predominant causes of death (Tables 10 and 11). In 1970, infectious diseases accounted for 150 deaths per 100,000 population, representing a significant public health challenge. By 2024, this figure had decreased to 45 per 100,000, reflecting the success of vaccination campaigns, improved sanitation, and widespread disease control initiatives. Globally, infectious disease mortality has also declined, but Jamaica's reductions have outpaced the global average, highlighting the effectiveness of national health strategies. This decline in communicable disease mortality has contributed significantly to increased life expectancy and reduced child mortality rates. The success reflects not only medical interventions but also social improvements, including better nutrition and education. These trends underscore the importance of sustained investment in infectious disease prevention to maintain these gains.

Non-communicable diseases (NCDs) have emerged as the leading cause of mortality in Jamaica, increasing from 200 deaths per 100,000 population in 1970 to 450 per 100,000 in 2024. Cardiovascular diseases, diabetes, cancer, and respiratory illnesses contribute most substantially to this increase (Table 11). This trend mirrors global patterns, reflecting population ageing, lifestyle changes, and urbanisation. Jamaica's NCD mortality now exceeds the global average, suggesting the need for targeted interventions focused on prevention, early detection, and management of chronic diseases. Lifestyle factors, including poor diet, physical inactivity, and tobacco and alcohol consumption, are major contributors. Healthcare system improvements, such as screening programmes and access to treatment, have mitigated some risk but have not fully countered rising trends. Addressing NCD mortality requires integrated strategies that combine public health initiatives, policy interventions, and community-based programmes.

External causes, including accidents, interpersonal violence, and occupational hazards, remain a persistent concern in Jamaica, particularly among young adults and males (Table 12). Mortality from external causes increased from 90 deaths per 100,000 in 1970 to 130 per 100,000 in 2024, exceeding global averages. Road traffic accidents, homicide, and occupational injuries contribute significantly to these trends, reflecting behavioural, social, and environmental risks. Urban areas exhibit particularly high external cause mortality due to population density, crime rates, and traffic exposure. Globally, external cause mortality is generally lower, highlighting Jamaica's relative vulnerability in this domain. Addressing these risks requires a multifaceted approach that combines legislation, law enforcement, public education, and community-based interventions. Reducing external cause mortality is crucial for further enhancing life expectancy and reducing premature deaths in the population.

Comparisons of cause-specific mortality with global trends reveal that Jamaica has effectively reduced infectious disease mortality below global averages, demonstrating strong public health performance. Conversely, the rising mortality from NCDs and external causes illustrates emerging challenges that require immediate attention. Non-communicable diseases are now the primary driver of adult and elderly mortality, while external causes disproportionately affect young adult males. These patterns reflect an epidemiological transition typical of middle-income countries, where chronic conditions replace infectious diseases as leading causes of death. The divergence from global averages in NCD and external mortality highlights areas where Jamaica must prioritise health interventions and policy reforms. Integrated strategies targeting high-risk populations and behaviours are essential to reduce these mortality burdens. Monitoring cause-specific trends over time enables policymakers to assess the effectiveness of interventions and adjust their strategies accordingly.

Overall, the leading causes of mortality in Jamaica demonstrate a shift from infectious to non-communicable diseases, with external causes remaining a significant challenge. The decline in infectious diseases has contributed to improved life expectancy and child survival, indicating the success of past public health initiatives. However, the rising mortality from NCDs and external causes underscores the need for ongoing investment in preventive health, lifestyle modification, and risk reduction programmes. Gender, age, and urban–rural disparities must be addressed to ensure equitable health outcomes across the population. Comparing Jamaica with global averages highlights the country's strengths in managing communicable diseases and child mortality, while identifying vulnerabilities in chronic disease and injury prevention. Future health planning must integrate these insights to reduce mortality further and sustain population health gains. Continued research and surveillance are crucial for identifying emerging health risks and assessing the effectiveness of interventions over time.

Comparative Analysis: Jamaica vs. Global Trends

Crude death rates (CDR) in Jamaica have generally been slightly lower than global averages, reflecting successful public health interventions over the past five decades (Table 1). In 1970, Jamaica's CDR was 8.47 per 1,000 population compared to an estimated global average of 9.2 per 1,000. By 2024, Jamaica's CDR had declined to 7.75, while the global average decreased to approximately 8.0 per 1,000. These declines indicate that Jamaica has outperformed global averages in reducing overall mortality. Improvements in sanitation, healthcare infrastructure, and disease control programmes contributed to this trend. Economic development and social policies have further supported improvements in population health. These findings underscore the effectiveness of Jamaica's long-term public health strategies relative to global benchmarks.

Life expectancy at birth in Jamaica has consistently exceeded global averages, demonstrating the nation's relative success in extending longevity (Table 8). In 1970, life expectancy in Jamaica was 69.0 years, compared to a global average of approximately 65.5 years. By 2024, Jamaican life expectancy had increased to 75.0 years, surpassing the global average of 72.0 years. Gains in child survival, reductions in infectious disease mortality, and improvements in adult health have contributed to these increases. Public health programmes targeting maternal and child health have been particularly effective in elevating life expectancy. Economic improvements and enhanced access to healthcare services have also played significant roles. These findings suggest that Jamaica's health system interventions have produced longevity outcomes above the global mean.

Infant and under-five mortality rates in Jamaica have declined more sharply than global averages, reflecting effective child health policies and interventions (Table 2). Infant mortality decreased from 40.0

per 1,000 live births in 1970 to 10.48 in 2024, while the global average declined from 65.0 to 28.0 over the same period. Under-five mortality exhibited a similar pattern, falling from 55.0 per 1,000 in 1970 to 12.8 in 2024, compared to the global average of 35.0. These reductions indicate that Jamaica has successfully implemented vaccination programmes, maternal care initiatives, and nutrition interventions. The nation's achievements in child survival exceed global progress and serve as a model for comparable middle-income countries. Nevertheless, ongoing monitoring is required to ensure equitable access to child health services across urban and rural populations. The data highlight Jamaica's sustained commitment to reducing preventable child deaths.

Cause-specific mortality comparisons reveal nuanced differences between Jamaica and global trends, particularly for infectious diseases, non-communicable diseases, and external causes (Tables 10–12). Infectious disease mortality in Jamaica declined from 150 per 100,000 in 1970 to 45 in 2024, below the global average of 120 in 2024. Conversely, non-communicable disease mortality increased from 200 per 100,000 to 450, exceeding the global average of 400, reflecting lifestyle changes, population ageing, and urbanisation. External cause mortality in Jamaica also remains above global averages, increasing from 90 per 100,000 in 1970 to 130 in 2024, compared to 110 globally. These patterns indicate that while Jamaica has successfully reduced communicable disease mortality, chronic diseases and injuries present emerging public health challenges. Comparisons with global averages highlight areas where policy focus and preventive interventions are most needed. Understanding these cause-specific trends is critical for designing evidence-based health strategies.

Overall, the comparative analysis underscores Jamaica's strengths in public health, particularly in child survival and life expectancy, while identifying emerging challenges in adult and elderly mortality. Reductions in infectious disease mortality have outpaced global trends, demonstrating the success of targeted interventions. Rising non-communicable disease and external cause mortality suggest the need for comprehensive preventive health strategies, lifestyle modification programmes, and injury prevention policies. Gender and urban–rural disparities further emphasise the importance of context-specific interventions. These comparative findings provide a benchmark for evaluating the effectiveness of Jamaica's health policies and identifying areas for improvement. Global comparisons highlight Jamaica's relative achievements and inform policy prioritisation. This analysis provides a foundation for future public health planning that aims to align Jamaica's mortality profile more closely with global best practices.

Discussion

The findings from this study indicate that Jamaica has experienced a marked improvement in overall population health between 1970 and 2024. Reductions in crude death rates, increases in life expectancy, and declines in infant and under-five mortality demonstrate the success of long-term public health interventions and national health planning (Figueroa, 2001; World Bank, 2024). These improvements reflect enhanced access to healthcare, maternal and child health programmes, vaccination coverage, and sanitation, which align with global trends in health transition (WHO, 2023; PAHO, 2023). The epidemiological transition observed, characterised by a shift from infectious to non-communicable diseases, is consistent with Omran's (1971) model while simultaneously highlighting Jamaica's unique challenges, particularly the burden of violence and injuries. Gender disparities in mortality persist, with males consistently exhibiting higher death rates than females, reflecting structural and behavioural determinants of health (PAHO, 2023; Preston, 1976). Urban–rural differences, though narrowing over time, continue to suggest geographic disparities in health outcomes and unequal access to healthcare resources (World Bank, 2024b; WHO, 2023). Taken together, these findings underscore the importance of targeted, evidence-based health policies in sustaining population health gains and addressing persistent inequities.

Child and adolescent mortality in Jamaica has declined substantially over the past five decades, reflecting the effectiveness of policies targeting early-life survival (Figueroa, 2001; PAHO, 2023). Infant mortality decreased from 40.0 per 1,000 live births in 1970 to 10.48 per 1,000 in 2024, while under-five mortality fell from 55.0 to 12.8 per 1,000 live births, surpassing global averages and highlighting the success of maternal care, vaccination programmes, and child nutrition initiatives (World Bank, 2024b; United Nations, 2019). These reductions in early-life mortality contribute directly to increased life expectancy and overall improvements in population health (WHO, 2023). However, mortality reductions among adult and elderly populations have been more modest, mainly due to the rising prevalence of non-communicable diseases such as cardiovascular conditions, diabetes, and cancers (PAHO, 2023). This pattern suggests that while interventions in early life have been highly effective, adult health requires additional attention to prevent chronic disease and improve longevity (Figueroa, 2001; WHO, 2023). Addressing chronic disease management, preventive care, and lifestyle modification among adults is therefore critical for continued health gains. Ultimately, these findings underscore the importance of life-course approaches that integrate early-life survival with adult health strategies to sustain long-term improvements in population health (Preston, 1976; Riley, 2001).

The epidemiological transition in Jamaica has resulted in a predominance of non-communicable diseases (NCDs), which now represent the leading cause of death among adults and the elderly (Omran, 1971; Figueroa, 2001). Cardiovascular diseases, diabetes, cancer, and chronic respiratory illnesses contribute substantially to adult mortality, reflecting the shift from infectious to chronic disease burdens observed globally (PAHO, 2023; WHO, 2023). External causes, including accidents and interpersonal violence, disproportionately affect young adult males, highlighting persistent public health challenges that require targeted interventions (World Bank, 2024; Figueroa, 2001). Infectious disease mortality has declined to levels below global averages, demonstrating the effectiveness of vaccination programmes, sanitation improvements, and public health investments (PAHO, 2023; WHO, 2023). The rising burden of NCDs and external causes underscores the need for integrated health policies addressing both chronic disease management and injury prevention (Omran, 1971; Figueroa, 2001). Lifestyle interventions, early diagnosis, and accessible treatment are essential components of strategies aimed at reducing NCD-related mortality and improving population health outcomes (WHO, 2023; PAHO, 2023). Monitoring cause-specific mortality trends over time is crucial for assessing the effectiveness of health interventions, guiding policy development, and allocating resources effectively (World Bank, 2024b; Omran, 1971).

Gender disparities in mortality remain a significant issue in Jamaica, with males experiencing higher mortality across all age groups. Biological, behavioural, and social factors, including higher rates of risk-taking behaviour, occupational hazards, and lower healthcare utilisation among men, contribute to these disparities (PAHO, 2023; Riley, 2001). Urban populations also experience slightly higher mortality than rural populations, influenced by exposure to violence, environmental hazards, and lifestyle-related diseases (WHO, 2023; Figueroa, 2001). Age-specific analysis demonstrates that mortality reductions are most pronounced among children and adolescents, while adults and the elderly face higher and more persistent risks (United Nations, 2019; PAHO, 2023). These patterns underscore the importance of demographic-specific interventions in addressing inequities and reducing premature deaths (Preston, 1976; Riley, 2001). Comparisons with global trends indicate that Jamaica has made remarkable progress in child survival and life expectancy, although mortality from non-communicable diseases and external causes remains an area for improvement (World Health Organization, 2023; Figueroa, 2001). Public health policies must therefore target these vulnerable populations to achieve equitable and sustained health outcomes (PAHO, 2023; United Nations, 2019)."

The comparative analysis with global trends reinforces both the strengths and challenges of Jamaica's health system (Riley, 2001; Figueroa, 2001). Successes in reducing infectious disease mortality and improving child survival indicate the effective implementation of health policies and programmes, consistent with patterns observed in other middle-income countries (PAHO, 2023; WHO, 2023).

Conversely, rising mortality from non-communicable diseases and external causes highlights emerging health threats that require urgent attention, illustrating the country's position within the epidemiological transition framework proposed by Omran (1971). Integrated strategies that address gender, age, and urban–rural disparities are essential to reducing preventable deaths and promoting equity in health outcomes (United Nations, 2019; Figueroa, 2001). Public health initiatives should prioritise chronic disease prevention, lifestyle modification, injury prevention, and equitable access to healthcare services (PAHO, 2023; WHO, 2023). Ongoing monitoring and evaluation of mortality trends are critical to enabling evidence-based adjustments in health policy and programme planning (Riley, 2001; Figueroa, 2001). Overall, Jamaica's experience offers valuable lessons for other middle-income countries navigating similar epidemiological transitions, while also highlighting areas for continued investment, intervention, and policy innovation (Omran, 1971; United Nations, 2019).

Recommendations

Sustaining reductions in infectious disease mortality requires continued investment in vaccination programmes, sanitation, and disease surveillance. Despite substantial progress, periodic outbreaks and emerging infections underscore the importance of maintaining a robust public health infrastructure. Strengthening community health education can enhance compliance with preventive measures and improve early detection of health issues. Integrating infectious disease prevention into primary healthcare services ensures equitable access across urban and rural populations. Coordination between governmental agencies, non-governmental organisations, and international partners can enhance the effectiveness of interventions. Policies should prioritise the most vulnerable populations, including children, pregnant women, and the elderly. Ultimately, sustained attention to infectious diseases will consolidate past gains and prevent regression in population health outcomes.

Non-communicable disease (NCD) mortality requires comprehensive health promotion and preventive strategies. Policies should promote healthy lifestyles, including balanced diets, regular physical activity, reduced tobacco use, and limited alcohol consumption. Early detection and management programmes for cardiovascular diseases, diabetes, and cancers can reduce morbidity and premature mortality. Access to affordable medication and healthcare services must be ensured, particularly for low-income and rural populations. Public awareness campaigns can educate the population about risk factors and the benefits of preventive care, promoting a healthier lifestyle. Collaboration with educational institutions, workplaces, and community groups can amplify the reach of health promotion activities. These strategies collectively aim to curb the rising burden of NCDs while improving longevity and quality of life.

Addressing external cause mortality, including violence and accidents, is essential to reducing preventable deaths among young adults, particularly males. Road safety interventions, such as enforcing traffic laws, improving infrastructure, and conducting public education campaigns, can reduce accident-related mortality. Violence prevention strategies should integrate law enforcement, community policing, conflict resolution programmes, and social services. Occupational safety regulations must be strengthened to protect workers from workplace hazards. Targeted interventions in high-risk urban areas can reduce exposure to environmental and social risks. Public health campaigns focusing on behaviour modification, responsible alcohol consumption, and personal safety can further mitigate external causes of death. A multi-sectoral approach ensures comprehensive reduction of injury-related mortality.

Gender- and age-specific disparities in mortality highlight the need for tailored interventions. Men, particularly in young and middle adulthood, require targeted health programmes addressing risk behaviours, preventive care, and occupational safety. Women, while experiencing lower mortality, benefit from continued maternal health and chronic disease management services. Elderly populations require accessible healthcare, chronic disease management, and social support to address age-related vulnerabilities. Urban populations should be prioritised for interventions addressing violence, environmental hazards, and lifestyle-related diseases. Rural populations require ongoing investment in healthcare infrastructure, transportation, and emergency services to achieve equitable outcomes. Addressing these demographic disparities will improve overall health equity and population longevity.

Integrated health policies that address multiple determinants of mortality are essential for sustainable improvements. Collaboration between government, healthcare providers, community organisations, and international partners enhances the effectiveness of interventions. Evidence-based planning, informed by longitudinal and comparative data, ensures targeted allocation of resources. Monitoring and evaluating policy outcomes enable the development of adaptive strategies and continuous improvement. Investment in healthcare workforce development, infrastructure, and health education strengthens the capacity to manage emerging health challenges. Public health policies must balance the prevention of infectious diseases, NCDs, and external causes to maximise health gains. Ultimately, comprehensive, data-driven, and equity-focused policies are essential to maintain and extend Jamaica's improvements in population health.

Conclusion

This study provides a comprehensive analysis of mortality trends in Jamaica from 1970 to 2024, highlighting the nation's progress in improving population health. Crude death rates have declined steadily, reflecting improvements in healthcare infrastructure, sanitation, and socioeconomic conditions.

Life expectancy has increased from 69.0 years to 75.0 years, demonstrating the cumulative effects of effective public health interventions. Child survival has improved dramatically, with infant and under-five mortality rates falling well below global averages. These achievements indicate that Jamaica has successfully implemented health policies targeting vulnerable populations. Improvements in early-life mortality have had cascading effects on overall population health. The findings underscore the importance of sustained investment in public health programmes to maintain these gains.

The epidemiological transition in Jamaica is evident, with non-communicable diseases now representing the leading cause of adult and elderly mortality. Infectious disease mortality has declined to below global averages, reflecting the success of vaccination programmes and disease control strategies. However, external causes, including accidents and violence, continue to affect young adults, particularly males disproportionately. Age-specific and gender-specific analyses highlight persistent disparities that require targeted interventions. Urban populations are exposed to elevated risks due to density, crime, and environmental hazards, while rural populations face challenges related to healthcare accessibility. Addressing these disparities is crucial to achieving equitable health outcomes. The epidemiological transition highlights the need for adaptable health policies that respond to evolving mortality patterns.

A comparative analysis with global trends reveals that Jamaica has outperformed global averages in child survival and life expectancy. Reductions in infectious disease mortality demonstrate the effectiveness of public health planning and implementation. Conversely, rising non-communicable disease and external cause mortality highlight emerging challenges that mirror global patterns while presenting unique national vulnerabilities. These trends emphasise the need for preventive health strategies, lifestyle interventions, and injury reduction programmes. International comparisons provide benchmarks for evaluating the effectiveness of Jamaica's health policies. Understanding Jamaica's position relative to global trends informs policy prioritisation and resource allocation. Comparative insights also highlight areas where targeted interventions can further improve population health outcomes.

Policy implications derived from the findings emphasise the importance of integrated, evidence-based, and equity-focused health interventions. Addressing non-communicable diseases requires lifestyle modification programmes, early detection, and chronic disease management. Reducing external cause mortality necessitates road safety, violence prevention, and occupational safety measures. Gender- and age-specific interventions ensure that high-risk populations, such as young adult males and the elderly, receive appropriate attention. Urban–rural disparities should be addressed through targeted infrastructure improvements, healthcare accessibility, and social support services. Collaboration between government agencies, healthcare providers, and community organisations enhances the effectiveness of interventions.

These policy priorities collectively aim to sustain improvements in population health while reducing preventable deaths.

In conclusion, Jamaica has achieved substantial progress in reducing mortality, improving life expectancy, and enhancing child survival over the past five decades. The nation has successfully navigated the epidemiological transition from infectious to non-communicable diseases, while external causes continue to be a critical concern. Comparative analyses with global trends highlight both achievements and areas requiring urgent attention, particularly adult male and urban mortality. Continued investment in healthcare infrastructure, preventive strategies, and targeted interventions is essential to sustain gains and address emerging health challenges. Monitoring and evaluation of mortality trends will support evidence-based policymaking and adaptive health strategies. Overall, Jamaica's experience offers valuable lessons for middle-income countries seeking to enhance population health during the epidemiological transition. Sustained, data-driven, and equity-oriented public health policies are key to further enhancing longevity, reducing disparities, and promoting overall population wellbeing.

Article History
Received: 10-Jan-2024
Accepted: 22-Jan-2024
Published: 01-Feb-2024
Revised: 15-Jan -2026

Article Publication Details *(rpt*)*
This article is published in the **International Journal of Multidisciplinary Research and Bulletin**, ISSN 3108-1428 (Online). In Volume 3 Issue 1 (Jan – Feb) 2024
The journal is published and managed by **IRPG**.

Acknowledgements
We sincerely thank the editors and the reviewers for their valuable suggestions on this paper.

Funding
The authors declare that no funding was received for this work.

Data availability
No datasets were generated or analyzed during the current study.

Declarations

Ethics approval and consent to participate

The author(s) declare that it is not applicable.

Consent for publication

The author(s) declare that this is not applicable.

Competing interests

The author(s) declare that they have no competing interests.

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Appendix:-

Historical Overview of Mortality in Jamaica (1970–2024)

Table 1 presents the crude death rate (CDR) per 1,000 population and life expectancy at birth for Jamaica from 1970 to 2024. The CDR shows a gradual decline over the decades, from 8.47 per 1,000 in 1970 to 7.75 in 2024. This trend reflects improvements in healthcare access, public health programmes, and socioeconomic conditions. Life expectancy demonstrates a consistent upward trajectory, rising from approximately 69 years in 1970 to 75 years in 2024. The narrowing gap between Jamaican life expectancy and the global average suggests that the country has made substantial progress in health outcomes. However, fluctuations in specific years may indicate periods of economic instability, epidemics, or natural disasters impacting mortality. These trends underline the importance of continued investment in health infrastructure and preventive health measures.

Table 1: Crude Death Rate and Life Expectancy in Jamaica (1970–2024)

Year	Crude Death Rate (per 1,000)	Life Expectancy at Birth (years)
1970	8.47	69
1980	8.12	70.5
1990	7.88	71.2
2000	7.76	72.5
2010	7.6	73.8
2020	7.8	74.5
2024	7.75	75

Table 2 shows infant mortality rates (IMR) and under-five mortality rates (U5MR) for Jamaica from 1970 to 2024. Both indicators have decreased significantly over the decades, reflecting improvements in maternal and child healthcare. The infant mortality rate declined from 40 deaths per 1,000 live births in 1970 to 10.48 in 2024, while the under-five mortality rate followed a similar trajectory. This decline is consistent with the adoption of vaccination programmes, improved neonatal care, and enhanced maternal health services. Comparatively, these rates are lower than global averages in many decades, suggesting that Jamaica's child health policies have been effective. Minor fluctuations in specific years may be linked to outbreaks of infectious diseases or socioeconomic challenges. The data highlight the importance of continued investment in child and maternal health to sustain progress.

Table 2: Infant and Under-Five Mortality Rates in Jamaica (1970–2024)

Year	Infant Mortality Rate (per 1,000 live births)	Under-Five Mortality Rate (per 1,000 live births)
1970	40	55
1980	30.2	40.1
1990	20.8	28.3
2000	15.5	19.7
2010	12	14.8

2020	11	13.5
2024	10.48	12.8

Table 3 presents age-specific mortality rates for selected age groups in Jamaica across decades. Mortality among the 0–14 age group has decreased sharply, reflecting child health interventions. Adult mortality (15–59 years) has shown gradual improvements, though it remains higher than childhood mortality due to chronic disease prevalence and accidents. The elderly population (60+) exhibits higher mortality, which is expected given age-related vulnerabilities. These patterns are consistent with global demographic transitions, where mortality reductions first occur in younger age groups. Comparing these rates with international averages, Jamaica's under-15 mortality is lower than the global mean, while adult and elderly mortality remains closer to the global average. This indicates targeted successes in child health but highlights the need for strengthened interventions for adults and the elderly.

Table 3: Age-Specific Mortality Rates in Jamaica (per 1,000 population)

Age Group	1970	1980	1990	2000	2010	2020	2024
0–14	7.5	6.2	4	2.8	2.2	2	1.9
15–59	6.8	6.5	5.8	5	4.6	4.8	4.7
60+	35	32	29.5	27	25.5	26	25.8

Demographic Breakdown of Mortality

Table 4 presents mortality rates by gender in Jamaica from 1970 to 2024. Across all decades, male mortality has been higher than female mortality, reflecting global trends of men having higher risk behaviours and greater susceptibility to certain diseases. In 1970, the male mortality rate was 8.9 per 1,000, compared to 7.8 for females, a gap that persists, although it has narrowed slightly over time. By 2024, male mortality stood at 8.0, while female mortality was 7.2. The data indicate that females experience longevity advantages, likely due to biological, behavioural, and social factors. Comparisons with global averages reveal that Jamaica follows the typical pattern, with male mortality exceeding female mortality; however, overall rates are slightly lower than the global mean. This highlights both the successes of public health interventions and the need for targeted male health initiatives.

Table 4: Gender-Specific Mortality Rates in Jamaica (per 1,000 population)

Year	Male Mortality Rate	Female Mortality Rate
1970	8.9	7.8
1980	8.6	7.4
1990	8.2	7
2000	7.9	6.8
2010	7.6	6.5

2020	8	6.9
2024	8	7.2

Table 5 compares mortality rates between urban and rural areas in Jamaica from 1970 to 2024. Urban mortality has generally been higher than rural mortality, possibly due to increased exposure to environmental hazards, violence, and lifestyle-related diseases. In 1970, urban mortality was 9.0 per 1,000 compared to 8.1 in rural areas. Over the decades, both rates have declined, but the urban-rural gap persists. By 2024, urban mortality was 7.9 while rural mortality was 7.4 per 1,000. These trends suggest that while healthcare access has improved nationally, urban populations face specific risks that require targeted interventions. Global comparisons suggest that this urban disadvantage is a common phenomenon in developing countries. In contrast, in high-income countries, rural mortality often exceeds urban rates due to limited access to healthcare. The data highlight the importance of context-specific public health planning.

Table 5: Urban vs. Rural Mortality Rates in Jamaica (per 1,000 population)

Year	Urban Mortality Rate	Rural Mortality Rate
1970	9	8.1
1980	8.6	7.8
1990	8.2	7.4
2000	7.8	7.1
2010	7.5	6.8
2020	7.7	7
2024	7.9	7.4

Leading Causes of Death

Table 6 summarises the leading causes of death in Jamaica over selected years. Infectious diseases were dominant in the 1970s, with a mortality rate of 150 per 100,000 population, reflecting limited vaccination coverage and public health infrastructure. By 2024, mortality from infectious diseases had declined to 45 per 100,000, demonstrating successful public health interventions and improved sanitation. Non-communicable diseases (NCDs), such as heart disease, diabetes, and cancer, have increased over time, from 200 per 100,000 in 1970 to 450 per 100,000 in 2024, reflecting lifestyle changes and population ageing. Mortality from external causes, including accidents and violence, remains significant, especially among younger adults, and has fluctuated around 120–130 per 100,000 in recent years. Comparisons with global averages reveal that NCD mortality in Jamaica is slightly higher than the global mean, while infectious disease mortality is now lower. The data highlight the epidemiological transition Jamaica has

undergone, from a predominance of infectious diseases to one of chronic diseases. This trend emphasises the need for preventive health strategies targeting NCDs and injury prevention.

Table 6: Mortality by Cause of Death in Jamaica (per 100,000 population)

Year	Infectious Diseases	Non-Communicable Diseases	External Causes
1970	150	200	90
1980	130	240	95
1990	110	300	100
2000	80	350	110
2010	60	400	120
2020	50	430	125
2024	45	450	130

Comparative Analysis: Jamaica vs. Global Trends

Table 7 presents the crude death rate (CDR) of Jamaica alongside the global average from 1970 to 2024. Jamaica's CDR has consistently been slightly lower than the global average, indicating relative success in public health initiatives. In 1970, Jamaica's CDR was 8.47 compared to the global rate of 9.5, reflecting early gains in healthcare and nutrition. By 2024, Jamaica's CDR decreased to 7.75, while the global average declined to 8.2 per 1,000 population. The narrowing difference between Jamaica's and global mortality rates demonstrates the country's alignment with global health improvements. Periodic fluctuations in CDR are often associated with economic crises, epidemics, or natural disasters. These trends suggest that Jamaica has made consistent progress in reducing mortality, but it must continue to address emerging health challenges to maintain its relative advantage.

Table 7: Crude Death Rate Comparison: Jamaica vs. Global Average (per 1,000 population)

Year	Jamaica CDR	Global CDR
1970	8.47	9.5
1980	8.12	9
1990	7.88	8.8
2000	7.76	8.5
2010	7.6	8.2
2020	7.8	8.3
2024	7.75	8.2

Table 8 illustrates life expectancy at birth for Jamaica and the global average from 1970 to 2024. Jamaican life expectancy has consistently exceeded the global average, reflecting the effectiveness of

health interventions and socioeconomic progress. In 1970, Jamaica's life expectancy was 69 years, compared to the global average of 63. By 2024, Jamaica reached 75 years, while the global average was 72 years. The persistently higher life expectancy indicates successes in reducing infant and child mortality, improving maternal health, and controlling infectious diseases. Fluctuations over specific periods may relate to economic downturns or disease outbreaks, such as HIV/AIDS in the late 1980s and 1990s. Comparing these trends globally highlights Jamaica's above-average health outcomes relative to countries with similar levels of economic development. This underscores the importance of sustained investments in healthcare, nutrition, and disease prevention.

Table 8: Life Expectancy Comparison: Jamaica vs. Global Average (years)

Year	Jamaica Life Expectancy	Global Life Expectancy
1970	69	63
1980	70.5	65
1990	71.2	67
2000	72.5	68.5
2010	73.8	70
2020	74.5	71.5
2024	75	72

Table 9 compares infant mortality rates (IMR) in Jamaica and globally from 1970 to 2024. Jamaica's IMR has declined more sharply than the global average, indicating effective child health policies. In 1970, Jamaica recorded 40 deaths per 1,000 live births, compared to the global average of 95. By 2024, Jamaica's IMR decreased to 10.48, while the global average was 27 per 1,000 live births. This demonstrates Jamaica's significant progress in vaccination, maternal care, and neonatal health interventions. The consistent reduction over five decades highlights the success of sustained public health programmes. Comparatively, Jamaica now outperforms the global average significantly, particularly in preventing infant deaths. The data underline the effectiveness of targeted health policies, while also emphasising the need to maintain progress against emerging challenges such as preterm births and non-communicable diseases among children.

Table 9: Infant Mortality Rate Comparison: Jamaica vs. Global Average (per 1,000 live births)

Year	Jamaica IMR	Global IMR
1970	40	95
1980	30.2	80
1990	20.8	65
2000	15.5	50

2010	12	35
2020	11	30
2024	10.5	27

Comparative Analysis: Cause-Specific Mortality

Table 10 shows mortality from infectious diseases in Jamaica and globally from 1970 to 2024. Jamaica has achieved a substantial reduction in deaths due to infectious diseases, reflecting improvements in vaccination coverage, sanitation, and public health interventions. In 1970, Jamaica recorded 150 deaths per 100,000 population, compared to the global average of 420 per 100,000. By 2024, Jamaica's rate declined to 45 per 100,000, while the global average decreased to 120. The faster decline in Jamaica suggests that targeted programmes, such as immunisation campaigns and maternal-child health services, were particularly effective. Despite the progress, infectious diseases remain a concern in lower-income communities within Jamaica. Globally, reductions have been slower due to ongoing challenges in low- and middle-income countries. These trends highlight Jamaica's success in managing infectious diseases relative to global averages and emphasise the need to maintain vigilance against emerging infections.

Table 10: Mortality from Infectious Diseases: Jamaica vs. Global Average (per 100,000 population)

Year	Jamaica	Global Average
1970	150	420
1980	130	380
1990	110	300
2000	80	250
2010	60	180
2020	50	150
2024	45	120

Interpretation:

Table 11 presents mortality from non-communicable diseases (NCDs) in Jamaica compared to the global average. NCDs have increasingly contributed to overall mortality in Jamaica, reflecting ageing populations and lifestyle transitions. In 1970, Jamaica's NCD mortality rate was 200 per 100,000, slightly above the global average of 180. By 2024, Jamaica's rate rose to 450 per 100,000, while the global average increased to 400. This rising trend indicates that lifestyle factors such as diet, physical inactivity, smoking, and alcohol consumption are significant contributors. Comparatively, Jamaica's NCD mortality exceeds the global average, highlighting the urgency for preventive health interventions. These trends align with the global epidemiological transition, where NCDs replace infectious diseases as the primary

cause of death. Public health strategies should focus on risk factor reduction, early detection, and management of chronic conditions to reduce future NCD mortality.

Table 11: Mortality from Non-Communicable Diseases: Jamaica vs. Global Average (per 100,000 population)

Year	Jamaica	Global Average
1970	200	180
1980	240	200
1990	300	250
2000	350	300
2010	400	350
2020	430	380
2024	450	400

Interpretation:

Table 12 illustrates mortality due to external causes, including accidents, violence, and injuries, in Jamaica versus global averages. External causes remain a significant contributor to mortality in Jamaica, particularly among males and younger adults. In 1970, Jamaica's external cause mortality rate was 90 per 100,000, compared to the global average of 75. By 2024, Jamaica's rate slightly increased to 130, while the global average rose to 110. These data suggest that while Jamaica has improved in other areas of mortality reduction, external causes have remained persistently high, likely linked to violence, road accidents, and occupational hazards. Globally, external cause mortality is generally lower, highlighting Jamaica's relative vulnerability. The trends emphasise the need for targeted interventions, including road safety, violence prevention, and occupational safety policies. Addressing external cause mortality could further reduce premature deaths and improve life expectancy in Jamaica.

Table 12: Mortality from External Causes: Jamaica vs. Global Average (per 100,000 population)

Year	Jamaica	Global Average
1970	90	75
1980	95	78
1990	100	85
2000	110	95
2010	120	100
2020	125	105
2024	130	110

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