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REVIEW

Preparing for Universal Coverage: Challenges for South Africa's Public Health System

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ABSTRACT

South Africa's healthcare system has undergone extensive reforms since the end of apartheid, yet significant disparities rooted in racial and socioeconomic inequities persist. Historically, apartheid policies directed resources toward a private healthcare system exclusive to the white minority, marginalizing the public sector serving Black South Africans. Today, these inequities endure, with public healthcare remaining under-resourced and strained, affecting maternal, child, and adolescent health outcomes and exacerbating the prevalence of noncommunicable (NCDs) and communicable diseases (CDs) among lower-income populations. This study explores South Africa's ongoing health challenges, examining the social and environmental determinants of health and the complex interplay between poverty, housing, water access, and disease burden. Recent government efforts, such as the National Health Insurance (NHI) scheme, aim to unify public and private sectors and improve access to healthcare services for all citizens, but challenges in implementation, funding, and public trust remain significant. Findings suggest that achieving health equity requires strengthened policies, targeted local interventions, and a comprehensive approach to environmental health. Through a critical analysis of governance, disease burden, and healthcare reforms, this study underscores the need for sustained commitment to address structural healthcare disparities in South Africa.

KEYWORDS: Public Health, South Africa, Universal Coverage, Healthcare Systems, Healthcare Reform.

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INTRODUCTION

South Africa's healthcare system has a complex history shaped by apartheid's racial and socioeconomic divisions, which established a dual healthcare system still affecting the nation today [1,2,3].

Under apartheid, resources were channeled toward private healthcare for the white population, leaving the public sector underfunded and creating severe disparities [1]. For instance, by 1981, there was one physician for every 330 white individuals compared to one for every 91,000 Black citizens [1]. These inequities created extreme disparities in healthcare access, which persist today as the public sector struggles to meet the needs of a predominantly Black population [4].

By the end of apartheid in 1994, South Africa was left with two parallel, yet highly unequal healthcare systems [1]. The neglected public health sector proved ill-equipped to satisfy the needs of the millions who relied on it, meanwhile the private sector continued to thrive, accessible only to those who could afford it [5]. Efforts since then have focused on decentralizing healthcare, adopting a district-based health system, and addressing racial inequalities to build a more inclusive system guided by health as a human right [6,7]. However, disparities persist, and South Africa still struggles to overcome the systematic disparities entrenched in its health care.

To address these issues, South Africa has embarked on establishing a National Health Insurance (NHI) scheme to create a more unified and accessible system [*8*]. The NHI is designed to pool resources across public and private sectors, providing universal health care regardless of socioeconomic status [5,*8*,*9*]. However, despite its potential to ensure universal healthcare, the NHI faces challenges in funding, staffing, infrastructure, and public trust [10].

This study examines the current state of South Africa's healthcare and public health systems, identifying urgent areas for improvement, particularly those the NHI must address to fulfill its promise of universal, equitable healthcare in a country still burdened by the legacies of apartheid.

MATERIALS AND METHODS

This study utilized a comprehensive search and analysis of peer-reviewed articles, government reports, and policy documents focused on the South African healthcare system and its related challenges. The search was conducted using keywords including, but not limited to: "South African healthcare system," "healthcare disparities," "apartheid," and "National Health Insurance." Additional keywords related to major themes of this study were also utilized to find relevant literature. Sources were gathered from reputable databases such as PubMed, Google Scholar, and institutional websites. To ensure a robust representation of current and relevant information, only documents available in English and published within the last two decades were prioritized, with exceptions for works providing historical context on apartheid's influence on healthcare.

There were a total of 78 references reviewed with 51 being peer-reviewed articles. A detailed summary of the references reviewed is shown in Table 1.

To analyze the information, a systematic approach was applied to categorize findings under major themes: governance and policy reform, disease prevalence and healthcare burden, healthcare access and equity, and environmental and socioeconomic determinants. Four key public health indicators were selected to assess South Africa's disease and healthcare burden: maternal, adolescent, child, and neonatal health, noncommunicable diseases (NCDs), communicable diseases (CDs), and environmental health.

Each source was critically appraised for its relevance, rigor, and alignment with the study's objectives of understanding South Africa's healthcare disparities and reforms. Emphasis was placed on sources addressing the intersection of public health issues with socioeconomic and environmental determinants, as well as those exploring the effectiveness of healthcare reforms, including the National Health Insurance (NHI) scheme.

RESULTS AND DISCUSSION

Maternal, Adolescent, Child, and Neonatal Health

Maternal, child, and neonatal health are key indicators of a country's overall health and often reflect underlying inequities [11]. In South Africa, economic disparities contribute to significant variations in mortality rates across provinces. Historical influences, such as apartheid and labor migration, led to overcrowded housing and limited health resources, resulting in elevated maternal mortality rates [5]. Since democratization in 1994, South Africa has implemented several initiatives to address maternal and child health [5]. The Mandela administration introduced free health services for pregnant women and children under six, aiming to expand access to care [5]. The 1996 Choice on Termination of Pregnancy Act provided legal avenues for abortion, reducing maternal mortality associated with unsafe procedures and increasing life expectancy [5]. However, despite these advancements, disparities in maternal health persist, particularly affecting Black African women and those in rural areas [5].

Resource shortages, including insufficient birthing beds and sterilization tools, exacerbate risks like infections and hemorrhages, especially during cesarean sections [12]. Black African women face poorer health outcomes across categories such as antenatal clinic attendance and skilled birth attendance, compounded by HIV prevalence [13]. Additionally, poor provider-patient communication, mistreatment, and long travel times to clinics undermine trust and deter care-seeking [14,15].

Adolescent health challenges include high rates of pregnancy and sexually transmitted infections like HIV, driven by limited contraceptive access, poor sexual health education, and cultural stigmas [16]. The Adolescent and Youth Friendly Services (AYFS) initiative aimed to improve adolescent health, especially in Primary Health Care facilities, but faced gaps in coverage and quality [17-20].

Neonatal health is heavily impacted by HIV, with children born to HIV-positive mothers at higher risk of mortality and vaccination delays [21]. In 2003, only 62% of children aged 12–23 months were vaccinated against measles, falling short of the 90% target set by the National Department of Health [21]. A 2017 study identified vaccine shortages, lack of awareness, and irregular clinic attendance as reasons for missed vaccinations [22]. Maternal age and education, distance to clinics, and household wealth further influence vaccination rates, while anti-vaccination sentiment highlights the need for educational outreach [21,23].

South Africa's Prevention of Mother-to-Child Transmission (PMTCT) program, launched in 2002, has reduced pediatric HIV infections but faces barriers like resource shortages and limited access in rural areas [24-27]. Similarly, the Expanded Programme on Immunization has made progress in reducing vaccine-preventable diseases but struggles with sustainability, new vaccine introductions, and integration with child survival strategies [28,29].

Noncommunicable Diseases

NCDs like cardiovascular disease, cancer, chronic respiratory conditions, and diabetes are increasingly prevalent in South Africa, driven by lifestyle changes, economic pressures, and an aging population, disproportionately affecting urban and low-income populations [30,31]. Between 1997 and 2018, NCD-related deaths rose by 58.7%, highlighting the need for policies targeting lifestyle risks, healthcare access, and public health education [32].

Key modifiable risk factors include poor diet, smoking, physical inactivity, and harmful alcohol use, particularly in urbanized regions like KwaZulu-Natal, Gauteng, and the Western Cape, where economic inequality fosters unhealthy habits [31,33]. The shift from traditional diets to fast food high in fats, sugars, and salts has exacerbated risks for heart disease and diabetes [31]. Regions like the Free State have the highest age-standardized NCD mortality rates, highlighting disparities in healthcare access and resources [33].

Lower-income communities face barriers to nutritious foods, healthcare, and physical activity, while poverty reinforces harmful behaviors such as smoking, alcohol use, and indoor air pollution, perpetuating poor health outcomes and socioeconomic immobility [32,34].

Historically, health funding has prioritized infectious diseases like HIV/AIDS and tuberculosis, leaving NCDs underfunded. Initiatives such as the National Strategic Plan for NCDs (2013–2017) and the Obesity Prevention Strategy (2015–2020) aimed to address the rising epidemic but were limited by poor baseline data, inconsistent policy implementation, and insufficient collaboration [35]. The updated National Strategic Plan for NCDs (2022–2027) now focuses on reducing premature NCD mortality and promoting mental health by 2030 [36,37].

Communicable Diseases

Communicable diseases, particularly HIV/AIDS, tuberculosis (TB), and malaria, remain major public health challenges in South Africa, disproportionately affecting impoverished communities. Historical stigmas, systemic

inequalities, and apartheid-era government inaction have fueled the ongoing HIV/AIDS epidemic, straining healthcare resources [38].

South Africa accounts for 20% of global HIV cases and new infections, with the epidemic rooted in apartheid policies that segregated and impoverished Black populations, limiting access to education, healthcare, and economic opportunities [39-41]. Even post-apartheid, systemic inequalities persist, compounded by poverty, educational disparities, addiction, and poor mental health, further restricting healthcare access for Black South Africans [42].

TB remains a leading cause of death, disproportionately impacting low-income populations in densely populated areas with limited clean water and sanitation. These socioeconomic factors hinder early screening and treatment, exacerbating TB's burden [43].

Table 1. Summary of Literature Review

Authors	Keyword	Source of References
Kon ZR, Lackan N.; Mhlanga D, Garidzirai R.; Sanders D, Chopra M.; Matsoso M, Chikte U et al; Bell GJ, Ncayiyana J et al;	South African healthcare system	PubMed; Google Scholar
Kon ZR, Lackan N.; Christmals CD, Aidam K.; Mahada T, Tshitangano TG et al; Wabiri N, Chersich M et al; Geary RS, Gómez-Olivé FX et al; Skinner D, Mfecane S et al; Manderson L, Jewett S; Matsoso M, Chikte U et al; Krieger J, Higgins DL; Marutlulle, N. K.; Oskam MJ, Pavlova M; Schenck CJ, Blaauw PF	Healthcare disparities	PubMed; Google Scholar
Kon ZR, Lackan N.; Mhlanga D, Garidzirai Re.; Whyle E. B., Olivier J.; Andersson N, Marks S.; Feinberg HM; Bell GJ, Ncayiyana J et al;	Apartheid	PubMed; Research Square; Google Scholar
Eleanor Beth Whyle, Olivier J; Fusheini A, Eyles J; Christmals CD, Aidam K.; Michel J, Tediosi F et al; Michel J, Obrist B et al; Weimann E, Stuttaford MC	National Health Insurance	Research Square; PubMed; Institutional Website; Google Scholar
Fusheini A, Eyles J.; Hill L, Artiga S et al; Mahada T, Tshitangano TG et al; Honikman S, Fawcus S et al; Geary RS, Gómez-Olivé FX et al; Fasakin KA, Omisakin CT et al; Mnyani C, Tait CL et al; Doherty T, Chopra M et al; Ngcobo N; Dlamini NR, Maja P; Rasesemola RM, Mmusi-Phetoe R et al; Matsoso M, Chikte U et al; Mosam A, Basu D et al; Wolfe CM, Hamblion EL et al; Fall IS, Rajatonirina S et al; Mremi IR, George J et al; Tshehla C, Wright CY.; Krieger J, Higgins DL; Manomano T, Tanga PT; Vala B, Ntokozo Malazaa; Zhakata E, Gundani SR; Hopkins KL, Doherty T et al; Michel J, Tediosi F et al; Michel J, Obrist B et al; Weimann E, Stuttaford MC	Governance and policy reform	PubMed; Kaiser Family Foundation; Institutional Website; Google Scholar
Johnson L, Schopp L et al; Hodes R.; Norman R, Bradshaw D	Burden of disease	PubMed; Google Scholar
Fusheini A, Eyles J.; Wabiri N, Chersich M et al; Jooste T.; Krieger J, Higgins DL; Manomano T, Tanga PT; Marutlulle, N. K.; Zhakata E, Gundani SR; Hopkins KL, Doherty T et al; Michel J, Tediosi F et al	Health equity	PubMed; Inequality Solutions portal; Google Scholar
Geary RS, Gómez-Olivé FX et al; Ndwandwe D, Nnaji CA et al; Rasesemola RM, Mmusi-Phetoe R et al; Manderson L, Jewett S; Levitt NS, Steyn K et al; Marutlulle, N. K.; Prosper Bazaanah, Mothapo RA; John J, Wright CY; Oskam MJ, Pavlova M; Dias SM	Socioeconomic Determinants	PubMed; Google Scholar
Christmals CD, Aidam K.; Burnett RJ, Larson HJ et al; Skinner D, Mfecane S et al; Matsoso M, Chikte U et al; Tshehla C, Wright CY; Krieger J, Higgins DL; Marutlulle, N. K.; Prosper Bazaanah, Mothapo RA; John J, Wright CY; Oskam MJ, Pavlova M; Momba M, Osode A; Schenck CJ, Blaauw PF; Zhakata E, Gundani SR	Public health challenges	PubMed; Google Scholar
Hill L, Artiga S et al; Mahada T, Tshitangano TG et al; Wabiri N, Chersich M et al; Honikman S, Fawcus S et al; Roberts KJ, Smith C et al; Geary RS, Gómez-Olivé FX et al; James S, Pisa PT et al; Geary RS, Webb EL et al; Ndirangu J, Bärnighausen T et al; Ndwandwe D, Nnaji CA et al;	Maternal, adolescent, child, and neonatal health	PubMed; Kaiser Family Foundation; Google Scholar
Roberts KJ, Smith C et al; Johnson L, Schopp L et al; Rasesemola RM, Mmusi-Phetoe R et al; Manderson L, Jewett S; Mosam A, Basu D et al; Levitt NS, Steyn K et al; Modjadji P.	Noncommunicable diseases	PubMed; Google Scholar
Roberts KJ, Smith C et al; Ndirangu J, Bärnighausen T et al; Mnyani C, Tait CL et al; Fassin D, Schneider H; Hodes R; Bell GJ, Ncayiyana J et al; Levitt NS, Steyn K et al; Mremi IR, George J et al; Hopkins KL, Doherty T et al; Modjadji P.	Communicable diseases	PubMed; Google Scholar
Jooste T.; Tshehla C, Wright CY; Mathee A, Moyes J et al; Krieger J, Higgins DL; Manomano T, Tanga PT; Marutlulle, N. K.; Vala B, Ntokozo Malazaa; Prosper Bazaanah, Mothapo RA; John J, Wright CY; Oskam MJ, Pavlova M; Godfrey L, Oelofse S; Hemson, D; Momba M, Osode A; Dias SM; Schenck CJ, Blaauw PF; Wright CY, Godfrey L; Zhakata E, Gundani SR; Norman R, Bradshaw D	Environmental health	PubMed; Inequality Solutions portal; Google Scholar

Malaria also poses risks near endemic borders, with high mortality rates linked to inadequate healthcare access and delayed diagnosis, particularly in economically disadvantaged regions. While preventative measures, such as mosquito nets, have reduced cases, treatment gaps highlight the need for expanded healthcare services and better disease management strategies in affected areas [44,45].

Public health disparities worsen CDs' impact. Wealthier individuals are more informed about prevention and treatment, while poorer communities face higher transmission rates, delayed diagnoses, and co-infection risks, such as HIV and TB or cardiometabolic disorders [35,46,47]. Government efforts, like the Integrated Disease Surveillance and Response system, aim to improve reporting and public health response but face challenges in resources and implementation [48-50].

Fortunately, South Africa has seen a series of reforms targeting communicable diseases with one being the National Strategic Plan for HIV, TB and STIs, which has had multiple iterations, the latest from 2023-2028 [51]. These plans focus on prevention, treatment, care, and support, with significant expansions in antiretroviral therapy access, which has helped reduce transmission rates and AIDS-related deaths.

Environmental Health

Environmental health issues in South Africa intersect with socioeconomic disparities, impacting quality of life and health outcomes. Rapid development has led to air and water pollution, inadequate waste management, and poor housing quality, disproportionately affecting lower-income populations. In 2000, environmental factors such as air pollution, unsafe water, poor sanitation, and lead exposure contributed to approximately 24,000 deaths [52]. The National Environmental Management Air Quality Act (2004) reduced industrial emissions but failed to address air pollution from vehicles, waste burning, mining, and domestic energy use. Due to inadequate transportation infrastructure, South Africa relies heavily on traditional fossil-fueled vehicles, contributing significantly to air pollution [53].

Housing quality is a major public health concern in South Africa [54]. In 2022, over 12% of South African households lived in informal housing [33]. Poor housing conditions are linked to respiratory and cardiovascular diseases, TB, gastrointestinal issues, mental health problems, and increased domestic violence rates [55]. Many underprivileged residents in Cape Town live in repurposed shipping containers, which lack insulation and contribute to mold and respiratory issues [55]. Despite the Housing Act (1997), government-provided housing often has structural issues, and many resort to unsafe power connections, increasing risks of fires and electrical shocks [56-58]. Overcrowded living conditions also increase the risk of contagious diseases like measles and meningitis, exacerbate chronic respiratory conditions due to secondhand smoke exposure in densely populated areas, and can cause sleep disturbances and mental health issues, such as depression and anxiety, due to noise and lack of privacy [35,58].

Water quality disparities persist despite improvements under the Water Services Act (1997). In 2022, only 59.7% of households had piped water, with rural households often relying on boreholes or communal sources [33,62]. Poor sanitation infrastructure, mining drainage, unsafe water handling and storage, and industrial effluents contribute to water pollution, exposing communities to heavy metals and harmful microorganisms. Contaminated water leads to diseases like diarrhea and cholera, particularly in rural areas where 21% of residents experience diarrheal diseases [61,63,66]. The South African government developed the National Sanitation Policy (NSP) in 2016 to address inequalities in sanitation access, focusing on enforcing equitable water and sanitation services in informal settlements and providing women-centered sanitation services that address women's health [67].

South Africa's waste management infrastructure shows stark urban-rural inequalities. For instance, 97% of households in Agincourt lack waste removal services, compared to 2% in Jouberton [54]. Rural residents often burn or dump waste, exacerbating pollution [54]. Informal waste recyclers face significant health hazards, including exposure to toxic fumes, pathogens, and unsafe materials, which increase risks of respiratory illnesses and infectious diseases [53,68,69]. Moreover, the lack of municipal waste collection services exposes the general population to similar health risks. South Africa passed the National Environmental Management Waste Act (2008) aimed to improve waste management, but enforcement challenges have limited its impact [70,71].

DISCUSSION

The effects of apartheid continue to impact South Africa's healthcare system, manifesting in significant disparities in healthcare access and outcomes. Despite government reforms, the dual public-private healthcare system still mirrors the historical inequities, with public health services struggling under the weight of an overwhelming demand from the majority of the population. This study has shown that these disparities are not merely historical; they are actively amplified by current socio-economic conditions, demonstrating that health equity is deeply linked to broader social justice issues.

The National Health Insurance (NHI) scheme offers a transformative approach to tackle these disparities by integrating the fragmented public and private healthcare systems. It aims to ensure equitable access to quality care and enhance health outcomes across all societal sectors [8]. By pooling resources from both sectors into a single fund, the NHI could potentially improve resource allocation and mitigate access disparities. The NHI seeks to establish and standardize comprehensive health service packages available to every citizen, striving for uniform service quality across different sectors [72]. Furthermore, the scheme anticipates engaging private healthcare providers to cater to NHI beneficiaries, thereby potentially enhancing both the capacity and quality of public health services [72].

The services offered under the NHI will include, but are not limited to, preventive care, reproductive and maternal health, community outreach, pediatric care, management of communicable and non-communicable diseases, and health counseling [6]. These services address key health indicators and aim to provide access to care previously unavailable to many families under the old system. Although the full realization and effectiveness of the NHI will unfold over many years, its implementation has begun with Phase 1 from 2023 to 2026, followed by Phase 2 from 2026 to 2028 [8].

Recommendations

While the South African government has made strides toward improving health outcomes and is actively implementing the National Health Insurance (NHI), challenges persist, including funding shortages, infrastructure deficits, human resource constraints, and gaps in disease prevention and treatment oversight [73,74]. To align with the NHI's mission and vision, addressing these challenges necessitates increased accountability,

robust leadership, and enhanced monitoring and evaluation systems from the government. Building public trust, broadening stakeholder involvement, and ensuring transparency are also essential to dismantle systemic barriers, enabling the NHI to fulfill its commitment to providing equitable, high-quality healthcare for all [75,76].

To improve maternal health and advance health equity, targeted actions at local and regional levels are imperative. This includes expanding obstetric services in rural communities, refining provider-patient interactions, hiring more healthcare professionals, guaranteeing continuous access to emergency obstetric care, and equipping staff with adequate resources. Preventive efforts like early hemorrhage intervention and regular antenatal screenings should be prioritized to lower maternal mortality rates, with these services covered under the NHI.

The management of NCDs has encountered hurdles, largely due to inadequate funding and the absence of comprehensive surveillance systems. Therefore, to effectively tackle the NCD burden, there must be enhancements in policy alignment, increased financial support for NCD initiatives, and the development of detailed surveillance systems [5].

For communicable diseases (CDs), a comprehensive strategy is vital, focusing on improving healthcare accessibility, public education, and early intervention. This involves expanding healthcare infrastructure like clinics and enhancing screening and diagnostic capabilities, especially in underserved rural areas, to facilitate early detection and treatment, thereby reducing the spread and severity of diseases such as HIV, TB, and malaria. The NHI's inclusion of screening and treatment for curable CDs like TB must be both accessible and prioritized. Moreover, public health education campaigns that reduce stigma and increase awareness can motivate communities to adopt preventive behaviors and seek timely medical attention, thereby improving treatment adherence and early detection.

Additionally, a healthcare model that simultaneously addresses CDs and chronic conditions can strengthen overall disease prevention. Training healthcare workers to handle dual disease burdens and allocating more funds to primary healthcare are key to better outcomes for those with multiple health conditions [47,77].

Finally, tackling environmental health challenges in South Africa is crucial for disease prevention. Although there are existing policies and initiatives, these need to be critically reviewed and fortified to ensure they are both comprehensive and effectively enforced.

CONCLUSION

South Africa has made clear progress in beginning to reform a fragmented and inequitable healthcare system. The legacy of apartheid continues to perpetuate disparities in healthcare along racial and socioeconomic lines. Despite significant efforts to reform the healthcare system since the end of apartheid, the deep-seated inequalities established during that era persist. Today, access to quality healthcare is still largely determined by race and economic status, with the majority of the Black population reliant on the under-resourced public sector, while a small, predominantly white minority benefits from the advanced care provided by the private sector.

In response, initiatives like the NHI scheme offer a promising yet challenging path forward. It will be essential to ensure adequate funding, expand healthcare accessibility, and restore public trust in government-led healthcare. Continued commitment to addressing structural disparities and ensuring equitable access to healthcare services is crucial for South Africa to advance toward a more inclusive, unified healthcare system.

AUTHORS' CONTRIBUTIONS

The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals of the International Committee of Medical Journal Editors. Indeed, all the authors have actively participated in the redaction and revision of the manuscript and provided approval for this final revised version.

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