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A Critical Examination of Health, Well-being and Sustainability Policies: Implications for SDG 3 and SDG 6

Introduction

The United Nations Sustainable Development Goals establish a global framework for addressing pressing health and environmental challenges by 2030. This report examines SDG 3 (Good Health and Well-being) and SDG 6 (Clean Water and Sanitation), both central to improving population health and reducing inequalities. Health outcomes are undeniably influenced by social, economic, and environmental determinants at global, national, and local levels. This report argues that although SDG 3 and SDG 6 policies are robust, their effectiveness is constrained by structural inequalities and fragmented governance, particularly in Birmingham. It critically analyses key global, national and local policies, applying behavioural theories, including the Health Belief Model and Social Cognitive Theory, to evaluate effectiveness and inform evidence-based recommendations.

Section 1: SDG 3 - Good Health and Well-being

Overview of SDG 3

SDG 3 aims to ensure healthy lives and well-being for all, regardless of age (United Nations, 2025). Primary objectives include reducing maternal and child mortality rates, addressing diseases, improving substance abuse treatment, achieving universal health coverage, and advancing mental health (Mikuła, Raczowska & Utzig, 2024; Menne, 2020). While health is a fundamental human right, its achievement remains uneven due to persistent structural inequalities across and within countries. Healthier populations drive productivity, resilience, and equity, which are essential for societal progress (Aftab et al., 2020).

Global Policies and Initiatives

Global policy direction for SDG 3 is largely guided by the World Health Organisation (WHO), although coordination remains fragmented across programmes and systems. Alongside UN member states, through initiatives such as the Global Action Plan for Healthy Lives and Well-Being for All, which encourages coordinated efforts and shared responsibility. The International Health Regulations (2005) further support global health security by establishing frameworks for monitoring and responding to public health emergencies.

Despite these efforts, effectiveness is constrained by fragmentation between disease-specific programmes and wider health system strengthening (Guégan et al., 2018; Ramirez Rubio et al., 2019). The COVID-19 pandemic highlighted significant weaknesses in global governance, particularly inequalities in vaccine distribution, with high-income countries gaining earlier access (Lu, Zhao & Chen, 2021). Although initiatives such as COVAX sought to address these gaps, persistent disparities demonstrate the limitations of voluntary international cooperation.

National Policies - United Kingdom

In the UK, the objectives of SDG 3 are reflected in the NHS Long Term Plan (NHS England, 2019) and the UK Government's Voluntary National Review (2022). The NHS plan prioritises prevention, personalised care, mental health services, and reducing health inequalities, while the Health and Care Act 2022 strengthens coordination through integrated care systems. However, significant challenges remain, including workforce shortages, funding constraints, and widening inequalities, particularly following the COVID-19 pandemic. These issues reflect broader structural pressures within the UK health system, where increasing demand and limited resources hinder policy effectiveness. Additionally, austerity-era reforms have contributed to declining public health outcomes in disadvantaged communities, highlighting the influence of wider socio-economic conditions on policy success.

Local Policies - Birmingham

At the local level, Birmingham City Council's Health and Well-being Strategy 2023–2028 focuses on reducing infant mortality, improving mental well-being, and addressing lifestyle-related conditions such as obesity and diabetes (Birmingham City Council, 2023). The strategy emphasises community engagement and cross-sector partnerships, reflecting systems approaches to interconnected determinants. As of 2024, Birmingham's infant mortality rate is 7.0 deaths per 1,000 live births, compared to the England average of 3.9 (City Observatory Birmingham, 2024). Life expectancy is 76.3 years for males and 81.1 years for females (ONS, 2022). These figures indicate persistent inequalities and limitations in effective policy implementation.

Application of Behavioural Theories

The Health Belief Model (HBM) and Social Cognitive Theory (SCT) are crucial for understanding behaviour change in health policies (Menne, 2020; Aftab et al., 2020). HBM concepts such as perceived susceptibility and self-efficacy are featured in public vaccination

campaigns to boost perceived benefits and reduce barriers (Mikuła, Raczowska & Utzig, 2024).

However, these models are often criticised for their individualistic focus, which can obscure structural determinants such as poverty, housing and policy environments, especially in communities facing socioeconomic challenges (Ramirez Rubio et al., 2019). SCT highlights the interaction between individual behaviour, social context, and environment (Guégan et al., 2018). Policies supporting community health champions in Birmingham reflect SCT principles, but mentorship resources vary significantly (Bond, 2022).

Critical Evaluation

SDG 3 policy frameworks demonstrate a comprehensive scope and commitment to equity, promoting multilateral alignment and tailored interventions. These initiatives have improved healthcare access, disease prevention, and service coordination. However, impacts vary across populations, revealing limitations in addressing socio-economic determinants of health inequality.

Despite these strengths, several interconnected challenges persist. Implementation gaps remain evident, with variability in how policies are operationalised across regions and urban centres (World Health Organisation, 2024). Inequalities in health outcomes continue to reflect socioeconomic gradients that policies have not fully mitigated (Appleby, Thompson & Marshall, 2023). In addition, resource constraints, including funding shortfalls and workforce pressures, undermine service delivery (Bond, 2022), while fragmented data systems limit real-time monitoring and evaluation (City Observatory Birmingham, 2024).

Collectively, these challenges indicate that despite their comprehensive design, SDG 3 policy frameworks remain structurally constrained by systemic inequalities and uneven local capacity, limiting their ability to achieve equitable and sustainable health outcomes.

The role of AI in SDG 3

A critical constraint in implementing SDG 3 policies is the growing dependence on digital health technologies and AI, which bring both significant opportunities and formidable challenges. While tools like telemedicine can greatly enhance healthcare access and efficiency, their success hinges on ensuring equitable access and proper implementation.

The digital divide may exclude marginalised groups, potentially widening existing health inequalities. Ethical concerns, including data privacy and algorithmic bias, further complicate

equitable healthcare delivery. Additionally, AI systems raise sustainability concerns due to high energy consumption and infrastructure demands. Therefore, while AI offers significant potential, its benefits risk reinforcing existing inequalities without robust governance frameworks to ensure equitable access and ethical implementation.

Recommendations

To strengthen SDG 3 outcomes, greater integration across the social determinants of health is required by embedding health considerations into housing, education, and employment policies (Ramirez Rubio et al., 2019). In addition, equity-focused resource allocation should prioritise communities with the highest disease burden (Birmingham City Council, 2023). Improving data infrastructure and interoperability is also essential to support real-time monitoring and decision-making (City Observatory Birmingham, 2024). Expanding digital health services can enhance access and efficiency (NHS England, 2019; Wosik et al., 2020), while addressing the digital divide through subsidised access and literacy programmes is critical (Van Dijk, 2020; World Health Organisation, 2021). Finally, stronger governance of AI is needed to ensure ethical and equitable implementation (World Health Organisation, 2021; Rane, 2023).

Section 2: SDG 6 - Clean Water and Sanitation

Overview of SDG 6

SDG 6 - Clean Water and Sanitation aims to guarantee the availability and sustainable management of water resources for everyone (United Nations, 2025). This includes access to safe water, sanitation, and effective management (World Health Organisation & UNICEF, 2026). Access to water and sanitation is essential for public health; insufficient services lead to diarrheal diseases, parasitic infections, and other avoidable health issues (Echchabi et al., 2024).

Global Policies and Initiatives

At the international level, the UN Water Decade Programme and World Health Organisation/UNICEF Joint Monitoring Programme (JMP) provide governance and monitoring for SDG 6 targets (World Health Organisation & UNICEF, 2026). The JMP tracks progress toward safely managed water and sanitation, generating data essential for policy evaluation (Our World in Data team, 2023). While these frameworks emphasise links between water, climate change and urbanisation, they remain structurally constrained, as reliance on national

capacity and voluntary compliance limits equitable implementation, particularly in low-income contexts (World Health Organisation, 2023). Consequently, despite strong strategic direction, global SDG frameworks lack enforcement mechanisms and sustained financial investment, undermining consistent progress across regions.

National Policies - United Kingdom

In the UK, water regulation is overseen by Ofwat and environmental bodies like the Environment Agency. The UK Water Industry National Environment Programme aims to reduce pollution, improve water quality, and enhance climate resilience. However, these policies reveal structural limitations, as ongoing issues with storm overflows, water quality, and ageing infrastructure continue to affect community health, particularly in deprived regions (UK Government, 2023). Debates over affordability and environmental degradation highlight sustainability challenges (Sheel, Dajani & He, 2024).

Local Policies - Birmingham and West Midlands

Severn Trent Water operates in Birmingham, prioritising environmental sustainability and public health (University of East London, 2025). Local policies focus on reducing leakage, improving customer service, and strengthening regulatory oversight (UK Government, 2023). Birmingham's Public Health and Environment Strategy highlights the importance of water quality, particularly for vulnerable populations (Birmingham City Council, 2022). Despite progress, significant inequalities persist, as environmental quality and access to safe water infrastructure vary across communities. Although 98% of the UK population has access to safely managed sanitation, only 33% of water bodies meet good ecological standards (SDG6Data.org, 2025). Globally, access to safe drinking water has improved, yet billions still lack adequate services, emphasising persistent inequalities (United Nations, 2025; Echchabi et al., 2024).

Theoretical Application

However, infrastructure failures often override individual behaviour change efforts, highlighting a key limitation of these models. While HBM emphasises individual perceptions such as perceived risk and self-efficacy, and SCT focuses on social and environmental influences, both frameworks are limited in their ability to address structural determinants such as infrastructure and resource distribution. This demonstrates that behaviour-focused interventions alone are insufficient without supportive environmental and policy conditions.

This limits the effectiveness of policies that rely on behaviour change alone, reinforcing the need for structural and system-level interventions.

Critical Evaluation

While SDG 6 policy frameworks demonstrate strengths in monitoring and regulatory structures, their effectiveness remains uneven across regions and populations (World Health Organisation & UNICEF, 2026). These initiatives have enhanced access to clean water and sanitation while decreasing waterborne diseases, leading to improved public health results. Nonetheless, effectiveness remains uneven, as outcomes vary across regions and demographic groups, reflecting persistent structural inequalities in access, investment, and infrastructure.

Key challenges include persistent inequalities in access and quality, particularly affecting marginalised populations (UNICEF UK, 2025). Environmental pressures like climate change and pollution hinder sustainable water management (Gleick, 2024), while weak regulatory enforcement limits accountability (Sheel, Dajani & He, 2024).

Evidence shows that water quality failures increase the risk of gastrointestinal illness, highlighting public health risks (World Health Organisation, 2023). Overall, ageing infrastructure and environmental pressures continue to limit sustainable and equitable outcomes. This demonstrates that SDG 6 is a fundamental determinant of SDG 3 outcomes, reinforcing the need for integrated, cross-sector policy approaches.

Case Study: Urban Water Quality in Birmingham

Recent reports from academic and regulatory sources indicate that stormwater overflows into urban waterways are occurring with increasing frequency, affecting recreational water sites and raising public health concerns (UK Government, 2023; Gleick, 2024). Community advocacy groups have called for more rigorous enforcement and investment (University of East London, 2025). This case highlights the limitations of local environmental governance, as insufficient enforcement and investment reduce the effectiveness of national policies in protecting public health.

The role of AI in SDG 6

AI is increasingly relevant to SDG 6 through applications such as smart water monitoring, leak detection, and predictive infrastructure maintenance. These technologies can improve efficiency, reduce waste, and enhance water management systems. However, as with SDG

3, the benefits of AI are unevenly distributed and can reinforce existing inequalities if access, affordability, and digital capacity are not addressed. High costs, data limitations, and technical requirements may exclude lower-income communities. Additionally, digital infrastructure increases energy use, potentially conflicting with sustainability goals. Therefore, AI should be used as a supportive tool within broader policy frameworks, rather than as a standalone solution.

Recommendations

To improve SDG 6 outcomes, stronger regulatory enforcement is required through stricter monitoring and penalties for pollution incidents to ensure accountability (UK Government, 2023). In addition, investment in climate-resilient infrastructure is essential to address risks from flooding, drought, and environmental change (SDG6Data.org, 2025). Equity-focused interventions, including targeted subsidies and prioritisation of deprived communities, are also necessary to reduce inequalities in water access and quality (UNICEF UK, 2025). Furthermore, enhancing transparency through regular public reporting can improve accountability and policy effectiveness.

Conclusion

This report critically evaluates policies related to Sustainable Development Goals 3 (Good Health and Well-being) and 6 (Clean Water and Sanitation). Access to clean water remains a fundamental determinant of population health and is shaped by persistent global inequalities and environmental pressures. While global frameworks, including the World Health Organisation's Global Action Plan and UK health system reforms, provide strategic direction, local initiatives in Birmingham illustrate how these policies are translated into practice. Nevertheless, their impact remains uneven, particularly in addressing health disparities, unequal resource distribution, and the effects of climate change and the COVID-19 pandemic. Although the Health Belief Model highlights the role of behaviour change, this analysis demonstrates that sustainable progress depends on addressing wider structural and systemic constraints across policy and implementation contexts. The interdependence of SDG 3 and SDG 6 demonstrates that health outcomes cannot be improved without addressing environmental and structural determinants, such as access to and quality of water. This highlights the need for stronger policy integration, accountability, and equity-focused governance across all levels.

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