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Strategies for Building Resilient and Sustainable Health Systems in Africa: A Descriptive Review

Dr. Mende Mensa Sorato[1,2*]

[1]Komar University of Science and Technology, School of Medicine, Department of Pharmacy, Qularaisi, Sulaymaniyah, KRI, Iraq
[2]Arba Minch University, college of medicine and health sciences, department of pharmacy, Arba Minch, Ethiopia

[*]**Corresponding Author:** Dr. Mende Mensa Sorato, Komar University of Science and Technology, School of Medicine, Department of Pharmacy, Qularaisi, Sulaymaniyah, KRI, Iraq, Mobile: +964-750-138-6273 or +251-937170976, Email: mendemensa@gmail.com; mende.mensa@komar.edu.iq

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Abstract

Introduction: Resilience is recovering soon from a disaster or calamity. It is bouncing back quickly or refusing to remain falling. The health system in developing countries is still struggling with issues of universal coverage and sustainable and resilient health systems. There is a gap in evidence regarding strategies to build resilient health systems, particularly in developing countries.

Method: A descriptive review involving 57 papers published in the English language since 2000 was conducted to suggest strategies to build resilient, and sustainable health systems in Africa.

Results: Health systems with no domestic sustainable financing systems often face challenges in handling health system shocks. In 2025, five years to achieve SDG Agenda, the progress in SDG 3 and its 13 strategic targets is not promising. This review, described seven strategies to build a self-sufficient, aid-independent, and resilient health system. These strategies include (1) implementing health in all policies, (2) improving government commitment to build an aid-independent health system, (3) renovating developmental aid to a new normal, (4) improving domestic financing, (5) improving local production both primary and secondary production, (6) improving efficiency and equity in health system financing system, and (7) improving health information management and utilization.

Conclusion: Building a resilient, and sustainable health system is important for developing countries. It requires a commitment to system building, innovation, learning from experience, an independent financing system and information utilization. In addition, all forms of multilateral collaborations should adhere to the new normal, and countries should focus on designing context-specific financing systems for health.

Keywords: Aid Independent health system, Resilient Health System, Sustainable Health system, Developing countries, Africa

Introduction

Health systems in developing countries are struggling to attain three big global health agendas (universal health coverage, sustainable, and resilient health systems). Universal health coverage (UHC) ensures access to high-quality health services (prevention, treatment, rehabilitation, and palliation) and financial risk protection [1]. Resilience is recovering soon from disaster or calamity. It is bouncing back quickly or refusing to remain falling. A health system's resilience is the ability of a system to absorb and adapt to shocks, stresses, and disruptions, such as natural disasters, pandemics, or economic crises, without compromising its core functions and performance. Whereas, a sustainable health system (economic, social, and environmental) can meet the current and future healthcare needs of the population without compromising future generations [2, 3].

Since the introduction of UHC in the WHO member states agenda in 2005 to ensure equitable access to healthcare for all without causing financial catastrophe [1] the world entertained another new agenda (sustainable healthcare system in 2015) [4, 5] and resilient health system after COVID-19 pandemic [5, 6]. The implementation of UHC, and sustainable and resilient health system agendas contributed to improvement in population health globally. However, the health system of developing countries is still struggling to achieve planned targets [7, 8]. The problem is amplified by inadequate health financing, limited health workforce, poor governance, poor health service delivery, failure to address population health, environmental sustainability, and poor access to medicines and technologies. In addition, aid dependence on the health systems has been a challenge and is expected to remain a challenge with no anticipated exit strategy from the donor countries and no sustainability plan from recipient countries [9-13].

The ultimate goal of the health system is ensuring equitable access to quality, and affordable care in resilient health systems to improve the longevity and quality of populations. However, it is yet far to reach for developing countries that are dealing with natural and manmade crisis, limited domestic funding and short-term relief-focused developmental aids [14, 15]. Despite developmental assistance provided so far [16], the health system in most of the countries in Africa is still not resilient to shock as evidenced by inequitable access to COVID-19 vaccination (70% in developed and 30% in developing) [17]. In 2025, five years remain to achieve SDG Agenda 2030, however, the progress in SDG 3 and its 13 strategic targets is not promising. For example, SDG 3 (sub 3 and 8); reducing mortality from non-communicable diseases and promoting mental health, and achieving UHC including financial risk protection, access to quality essential health care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all seem not attainable in most the world countries. In addition, we are living in a world which is more uncertain than ever. This uncertainty is fueled by natural and man-made disasters. Therefore, building sustainable, resilient, and aid-independent health systems is important. This descriptive review [18], addressed strategies to design sustainable, resilient, and aid-independent health systems for developing countries.

Methods

Data sources and search strategy

Articles written in the English language from January 2000 to May 2024 from PubMed, Cochrane Library, Google Scholar, and Cross-reference with the following systematic search query were included. Building Resilient health systems AND Sustainable Health Systems AND developing countries OR Africa (Available at Supplementary material: Search strategy).

Study types

Observational studies, cross-sectional studies, Systematic reviews, Policy reviews, scoping reviews, and government documents and addressing health system sustainability, resilience, and independence

Inclusion and exclusion criteria

Observational studies, cross-sectional studies, Systematic reviews, Policy reviews, scoping reviews, and government documents and addressing health system sustainability, resilience, and independence in developing countries. Whereas, studies conducted before January 2000, short communications, studies not from developing countries, and conference proceedings were excluded.

Study selection and data abstraction

From 169 articles identified by the literature search, 95 potentially relevant articles were abstracted; after applying, the inclusion-exclusion criteria listed above 57 articles were found to be relevant (Figure 1). Each study's abstract is reviewed and abstracted against pre-specified inclusion and exclusion criteria. Data concerning, strategies to build a self-sufficient, aid-independent, and resilient health system were extracted and discrepancies from established criteria resolved by consensus.

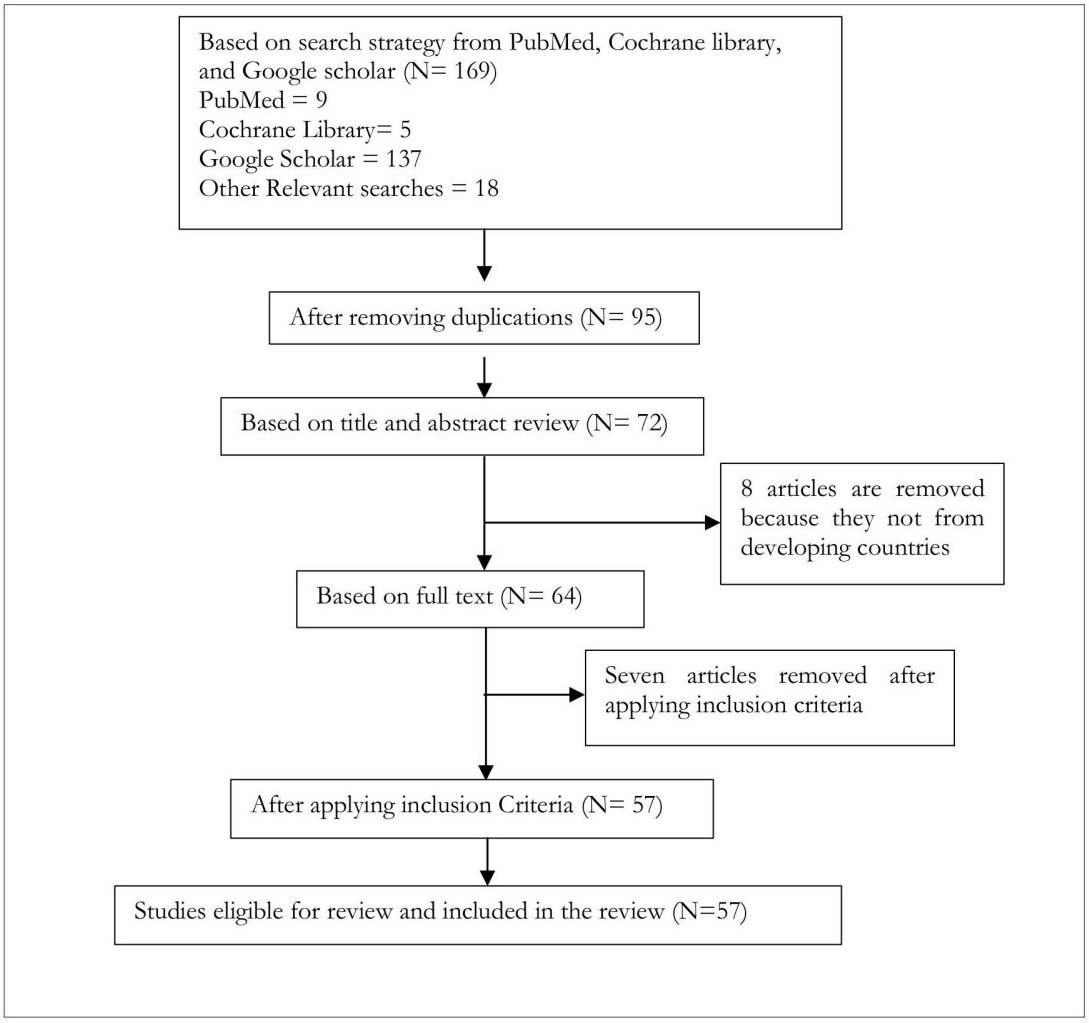

Figure 1: PRISMA Flowchart representing the result of search and the number of articles excluded and eligible for review

Data Synthesis and Analysis

The review qualitatively described and summarized the evidence on the strategies to build a self-sufficient, aid-independent, and resilient health system. These strategies include implementing health in all policies, improving government commitment to build an aid-independent health system, renovating developmental aid to a new normal, improving domestic financing, improving local production both primary and secondary production, Finally, improving efficiency and equity in health system fi-

nancing system, and improving health information management and utilization.

Results and discussion

Descriptive summary on building sustainable and resilient health systems

Resilience is bouncing back, independence, self-sufficiency and predicting and strategizing to make the future safe. Ensuring self-sufficiency, and building aid-independent and resilient health systems is the future direction of most developing countries including Africa. As aid-dependent health systems are fragile and unable to protect the well-being of society during system shocks. According to the 77th World Health Assembly recommendations, economies should be structured to support health and well-being for all. This should start with assessing the health system gaps based on their context, seeing health across (economic, social, and environmental) dimensions, designing policies and strategies, setting clear goals, working on system strengths and weaknesses, creating a sense of belongingness, global alliance for cross-cutting issues (not for aid but for shared goals), and monitoring and evaluation of performance, and continuous learning [19].

An aid-dependent economy that is backed up by debt is draining the resources from African countries. For example, sub-Saharan Africa is a net creditor to the rest of the world to the tune of more than $41 billion. Around $161 billion a year entered Africa in the form of loans, remittances, and aid. But there's also $203 billion leaving the continent mainly in the form of dodged taxes. Essentially multinational corporations take much of this legally by pretending they are generating their wealth in tax ports. These illicit financial flows account for around 6.1% of the continent's entire GDP or three times what Africa receives in the form of aid. About $36 billion is owed to Africa as a result of the damage that climate change will cause to their societies and economies [20]. Every aid comes with a double agenda (one visible and the other hidden). The visible agenda emanates from the humanitarian mission. However, the hidden agenda originates from the donor's interest. Engaging in aid without recognizing the two sides of it, leads to dilution of the national agenda, or diversion of the national agenda towards the donor's agenda [21]. Closing the health financing gap and fostering aid independence through adapting and developing new systems is important and possible [22]. Health systems with no domestic sustainable financing systems often face challenges in handling health system shocks due to natural and man-made disasters [23].

Strategies to build resilient and sustainable health system

This review described seven strategies to build a self-sufficient, aid-independent, and resilient health system. These strategies include implementing health in all policies, improving government commitment to build an aid-independent health system, renovating developmental aid to a new normal, improving domestic financing, improving local production in both primary and secondary production. Finally, improving efficiency and equity in the health system financing system, and improving health information management and utilization (Figure 2 and 3). These identified strategies can be incorporated into global health-related policies and initiatives like universal health coverage (UHC) and health-related sustainable development goals (SDG-3) [1, 4, 5]. And WHO health system building blocks (health service delivery, work force, health information system, access to key medicines, health financing, and leadership/governance) [24].

Dimension one: Implementing health in all policies

Collaboration and partnership are needed today more than ever due to the global nature of the problems (conflict, climate change, pandemic, displacement, etc.) and population mobility. Every sector has a significant contribution to improving health and wellbeing [25]. For example, investing in and improving the agricultural sector is important to ensure nutritional sufficiency. Thereby it can reduce the importation of unhealthy processed foods like diabetogenic foods. In the road and transportation sector, constructing public roads with due consideration of walkways is important to improve physical exercise and maintain a

healthy weight. Similarly, defense and security, education, manufacturing, mining, environment protection, and safety have great contributions to improving the health and well-being of people nationally and globally [26]. Today, almost 80% of chronic illnesses the world is facing are related to socioeconomic status, behavior, and environment. Indeed, socioeconomic status is intermingled with several social determinants like education, residence, occupation, and low income. Short and long-term plans and activities should be checked for their alignment towards ensuring sustainable, self-sufficient, and resilient health systems in light of health in all policies.

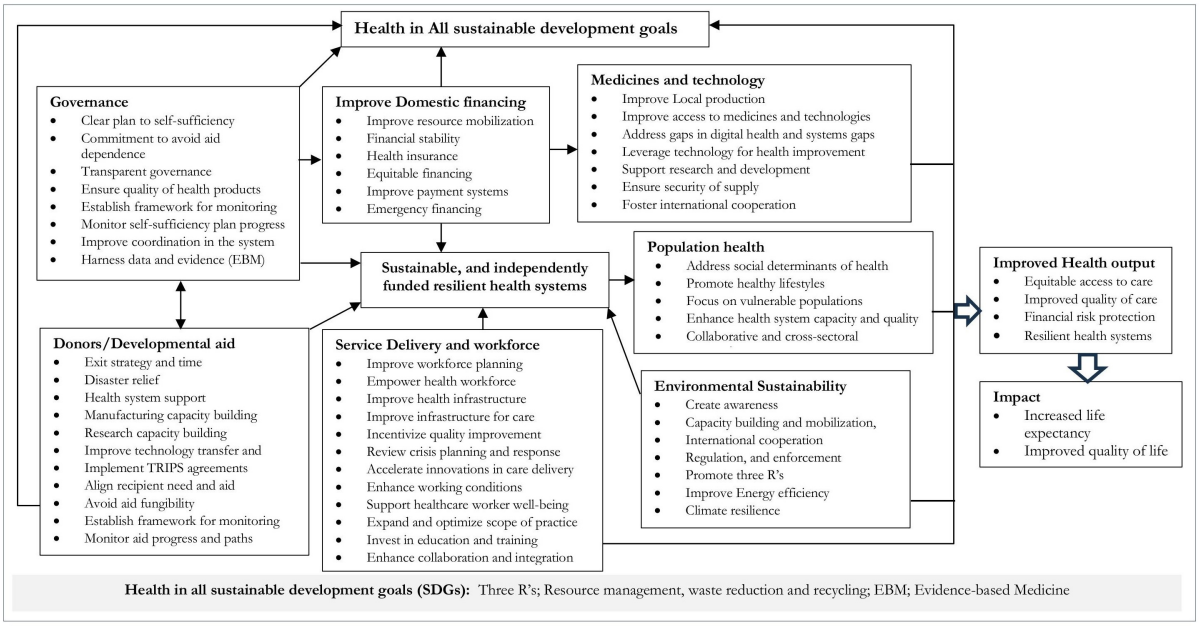

Figure 2: Framework for Sustainable, and independently funded resilient health systems for developing countries based on a new narrative

Source Author

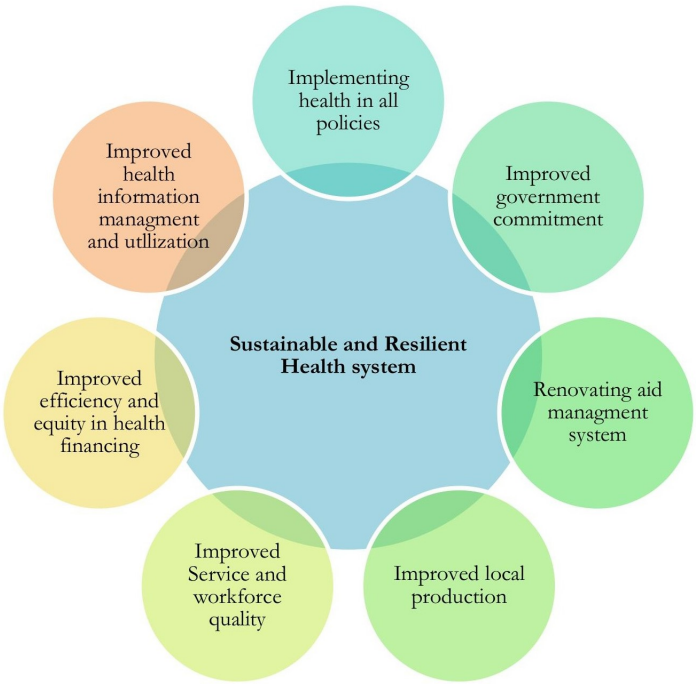

Figure 3: Seven Strategies for building sustainable and resilient health systems

Source Author

Domain two: Improving government commitment

The second domain is improving government commitment to building sustainable, independent, and resilient health systems. This also requires a holistic view, (updating health policy, addressing infrastructure needs, health task force, and increasing healthcare funds) [27]. There is still a shortage of health task forces to meet the burden of the disease in Africa [28]. The government's commitment to building a sustainable, independent, and resilient structure, healthcare workforce, medicines, medical devices and supplies, and health information system is critical. For example, to ensure a sustainable, independent, and resilient supply of quality medicines, the following are required. Establishing pharmaceutical plants for local production, and establishing efficient and quality drug regulatory laboratories for testing, registering, and controlling medicine movement in the country. In addition, establishing procurement systems to ensure affordability, and financial protection (through health insurance) is important [29-32]. Affordability can be approved by endorsing price controls, promoting competition, ensuring transparent drug pricing, limiting patent period and avoiding the "pay to delay", eliminating the import tax for high cost-drugs, limiting direct advertising of drugs for patients and providers at the facility, avoiding free drug sample provision during the advertising, and other inducements [33, 34].

Domain three: Renovating development aid to new-normal

Aid is generally divided into three. Humanitarian or emergency aid, charity-based aid, and systematic aid (bilateral aid or multilateral aid) [35]. In reality, foreign aid in its current form cannot secure health needs of developing countries [14]. For example, billions of dollars were invested in the African continent in the form of developmental aid in the past two decades (2000, to 2020) [16, 36]. This money can establish 63 (36 to 318) pharmaceutical companies in 2018 price of the pharmaceutical establishment ($314 million to 2.8 billion dollars). If the aid is efficiently managed, each country could have four pharmaceutical companies to ensure access to quality medicines for their nations [37, 38]. However, the health system in most of the countries in Africa cannot still handle health system shocks. In addition, the current architecture of aid does not fit for countries' health needs and change is demanded by many countries [17].

The basic limitations of an aid-based health system are externally determined demand and supply, problem-based, and aid fungibility. Trying to satisfy a need that is determined by using models that cannot capture the real context of the countries serves the donor interest rather than the priorities of the recipient countries. In addition, aid is mainly problem-oriented (supplying fish, not fishing nets) which further increases donor dependence by making health systems vulnerable to non-health-related interests of donors, and unreliable financing. Similarly, induced demand and wastage of resources; monopolistic influence (pushing and dumping services and programs without interest), and aid conspiracy (click-inter-click) developmental aid problems require reprioritizing to a new normal [39]. Here I quote a book entitled 'The Dead Aid' written by Dambisa Moyo. In her book, she stated that *"aid has become a cultural commodity. Millions march for it. Governments are judged by it. But has more than US$1 trillion in development assistance over the last decades made African people better off? No. In fact, across the globe the recipients of this aid are worse off; much worse off. Aid has helped make the poor poorer, and growth slower. Millions in Africa are poorer today because of aid; misery and poverty have not ended but have increased"* [35].

Another problem is aid fungibility (aid substitutes rather than supplements local spending). If a donor gives a country a certain amount of Development Assistance for Health (DAH) and that country responds by reducing its spending, then the DAH cannot increase healthcare spending. Estimates of the extent of fungibility in the health sector revealed for every dollar spent, recipient countries decrease their fund by $0.96 ($0.27-1.65) [40, 41]. Mutual accountability between donors, recipients, and all relevant stakeholders is important to run an effective DAH program. Unaccountable programs, devour the nation's motivation and energy to build strong health systems. In addition, the current nature of DAH is spoon-feeding (the budgets are not for building systems and structures rather they are for acute symptomatic management). As a result, programs are graduating without having clear sustainability plans. An aid with a donor-prescribed agenda can improve the health system if it assists in filling a

gap in capacity, resources, or expertise [42]. Donor priorities drive aid flows (linked to the political and economic interests of the donor); and donor duplicity [43]. Despite all these, most African countries are still afraid to try to walk by their own due to fear of the challenges of transitioning to an independent system. Despite the challenges, there are opportunities including a global reduction in aid, an unwelcoming future of aid, and possibilities for improving self-sufficiency by enhancing capacity to leverage domestic resources mobilization [44]. Therefore, donors and recipients of the aid should focus on establishing systems, pharmaceutical industries, and information technology to support the health systems.

Finally, the current DAH structure has design failure, no end date (an expectation of indefinite financing for potential limitless demand); and the legacy construct (externally prescribed best buys), and aid fungibility. These design failures are compounded by failures of execution, corruption, lack of transparency, and inefficient management making the current design unfit, and requiring urgent transformation [17]. The proposed changes that are necessary and possible based on the new normal include setting termination dates for GHIs, starting a binding and transparent transition process, wake waivers for countries affected by catastrophic natural disasters and war, investing in Africa's capacity to independently manufacture diagnostics, vaccines, and therapeutics. In addition, investing in African research institutions so that they can sustain true independence, investing and encouraging regional resource mobilizing efforts, and improved commitment from African leaders for independence from donor aid is important [45].

Domain four: Improving local production (both primary and secondary)

Concerning, the importance of local pharmaceutical production, more than two billion people worldwide cannot get the medicines they need. Local production of pharmaceuticals and supplies can help vulnerable populations, especially those in remote rural areas, to access quality medicines, thus contributing to "leaving no one behind, and reaching the furthest behind first", the overarching principle of the 2030 Agenda for Sustainable Development. Local production can reduce the dependency on international donations. Local production is easier to control and can help curb the vast influx of sub-standard medicines into developing countries. Despite this, most companies in Africa operate much below their capacity (in quantity and quality) [46-48]. In addition, improving local production will reduce the problems associated with donated drugs. For example, often these products arrive unsorted and labeled in a language that is not easily understood, and/or without a generic name on the label, do not comply with standards in the donor country, have near-expiry or expired drugs, or have free samples returned to pharmacies health professionals. The donor agency sometimes ignores local administrative procedures for receiving and distributing medical supplies [49-51]. Therefore, building the capacity of local production both secondary production (filling and packaging), primary production (raw materials), production of vaccines and biologicals, and drug development research is a critical success factor for building sustainable, independent, and resilient health systems [46-48].

Domain five: Improve service quality and health workforce

Improving government expenditure on public health is associated reduction in under-five mortality and morbidity [52]. Government spending on healthcare in Africa is still low (5.3% of GDP) [53]. Studies indicated the underperformance (52.9%) of healthcare managers in Sub-Saharan Africa as evidenced by the amount of decision space left to carry out actions needed across the health system. These left spaces include health workforce; health products; health infrastructure; governance processes; service delivery processes; health information systems, and health financing systems [6]. Filling this gap also requires a transformed healthcare leadership. This leadership system should be ready for constant shocks, focus on value-based care, manage structural changes effectively, and use stakeholders' relationships to their advantage. Universal health coverage needs a paradigm shift and requires strengthening primary healthcare; focusing on sustainable, domestically-financed health services; strengthening joint approaches for achieving equity in health outcomes; achieving strategic coherence; and improving regional manufacturing to address market and policy failures in global health [54]. Therefore, African countries should improve government health expenditure in health and efficiency of resource utilization.

Domain six: Equity and efficiency in health system financing

Effectiveness, efficiency, and equity are the three aspirational goals of the healthcare system. These three are interlinked and looking at them as a whole and in part is important. Resources saved by efficient systems can be used for improving infrastructure so that the health service quality can be improved. Similarly, improving efficiency and quality can create room for improving equity through building infrastructures in hard-to-reach areas. In some situations, it may also require reprioritizing national needs to improve resource use efficiency. Healthcare system efficiency can be improved by creating transparent and accountable leadership, pooling domestic financing (social health insurance), and improving the health literacy of the population to enhance response use of health services [55]. In addition to this, academic researchers, technical experts, and policymakers should pursue a robust research agenda on financing arrangements for health systems to support the achievement of resilient, aid-independent, and sustainable health systems in Africa [56].

Another loophole for building resilient, aid-independent, and sustainable health systems is contextualizing short and long-term goals. Taking, the global agendas to the homeland and trying to fit into the immature systems creates unnecessary strain and stress on the already burdened system. According to Atlas 2022 African health statistics, the region is dealing with several threats, jeopardizing its progress toward achieving the SDGs by 2030. Given the Region's particular context, a readjustment of the regional targets and/or deadlines would be advisable to ensure they are achievable [57]. Therefore, setting regional and national goals to milestones to measure the progress toward a resilient, aid-independent, and sustainable health system in Africa is critical. The Head States of the African Union endorsed a regional mission called 'Agenda 2063' to transform Africa into a future global economic, and political powerhouse [58]. Therefore, strengthening such regional agendas, and contextualizing them to local governments can improve the journey towards a resilient, aid-independent, and sustainable health system in Africa. Finally, creating a mindset that is free from aid dependence is important. This is because the stakeholders should be aware and ready to build their health and well-being through their efforts. Creating awareness about the impact of aid, debt, and multilateral financing challenges on domestic health services could also contribute the creating an independent mindset [59, 60].

Domain seven: Improving health information management and utilization

Health information is management is one of key components quality healthcare system. However, both adaptation and integration of health information system to the current level of information revolution is inadequate in developing countries like Africa [61, 62]. In addition, the use of technology for be it decision support systems or machine learning algorithms, big data analytics and geographic information systems need more attention to improve healthcare service efficiency and quality [63]. Improving information technology utilization can improve the health system efficiency and quality through providing comprehensive information for decision making or assisting in decision making process or networking the professionals across facilities or countries.

Conclusion

Building a resilient, aid-independent, and sustainable health system is important for the African health system and the time to do so is now. It requires integration and partnership for system building, innovation and learning from experience, and designing an independent financing system. This can be achieved by implementing health in all policies, improving the government's commitment to build an aid-independent health system, renovating developmental aid to the new normal, improving domestic financing, improving local production in both primary and secondary production, improving service delivery efficiency, and equity in health system financing system and health information utilization. In addition, all forms of multi-lateral collaborations should adhere to the new normal, and countries should focus on designing context-specific financing systems for health.

Declarations

Ethics Approval and Consent to Participate

Not applicable

Consent to Participate

Not applicable

Consent for Publication

I agree to publish this descriptive review.

Availability of Data and Materials

Not Applicable. This is a scoping review and we have used only published articles.

Competing Interests

The author declares that they have no competing interests.

Funding

There is no funding source for the study.

Contributor

The author approved the manuscript. *MMS* conceived the research, framed the formatted the design, and conducted the review. *MMS reviewed the* manuscript writing process, polished the manuscript, and developed the manuscript for publication. The guarantor of the study is *MMS*. The author accepts full responsibility for the finished work and/or the conduct of the study, has access to the data, and controls the decision to publish.

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