African Health Sciences Bulletin

Article

Non-Communicable Diseases Management in Eswatini: A Scoping Review

Sibhekile Nosipho Dlamini[1], Zanele Precious Nhlabathi-Khumalo[2] and Vuyiswa Jane Mkhabela[1]*

[1]Department of Pharmacy, Faculty of Health Sciences, Eswatini Medical Christian University, Kingdom of Eswatini
[2]Department of Psychiatry & Mental Health, SCID Laboratory, University of Cape Town, South Africa

*Correspondence to VJ Mkhabela: vjmkhabela@gmail.com

Abstract: Non-communicable diseases (NCDs) are of long duration and generally progress slowly, resulting in premature morbidity, dysfunction and reduced quality of life. The objectives of this study were to identify services and programmes employed in the management of NCDs in Eswatini, and to evaluate the effectiveness of management interventions employed in the country. Electronic databases were searched for publications between the year 2006 and 2024. Data were extracted and charted using thematic content analysis to map key findings on hypertension, diabetes, cancer, and chronic obstructive pulmonary disease. The findings revealed that Eswatini has made significant strides in addressing the growing burden of NCDs through government-led initiatives and collaboration with international partners. Given that most of the major risk factors for NCDs are modifiable, and that hypertension and diabetes can be prevented altogether; the importance of primary prevention strategies in reducing the global burden of hypertension and cardiovascular diseases cannot be overstated. However, there are serious limitations that continue to impede progress.

Keywords: Eswatini, non-communicable diseases, hypertension, diabetes, prevalence, prevention, risk factors

1. Introduction

Since 2015, global data has shown a concerning rise in non-communicable diseases (NCDs) across both developed and developing nations, putting considerable pressure on healthcare systems. According to the World Health Organization (WHO), NCDs are responsible for 74% of global deaths, totaling 41 million people annually [1]. Of these, over 15 million deaths occur between the ages of 30 and 69, with 85% happening in low- and middle-income countries. Cardiovascular diseases are the leading cause, followed by cancers, respiratory diseases, and diabetes. Developed countries generally experience lower mortality rates due to better access to affordable, high-quality healthcare.

In contrast, many nations in the Southern African Development Community (SADC) region, including Eswatini, face growing challenges with NCDs like diabetes and hypertension, which are becoming major health threats [2]. Eswatini's healthcare system has historically relied on a centralized model, with most care provided in hospitals [3]. However, with hospitals stretched by both the HIV epidemic and the rise of NCDs, this system is unsustainable. As a result, 41.7% of citizens seek private healthcare, with many relying on a constant supply of medications to manage chronic conditions [4].

NCDs in the SADC region are rising rapidly and are expected to soon surpass communicable diseases as the leading cause of death [5]. Some experts predict that the impact of diabetes may eventually overshadow that of HIV and AIDS [6]. Eswatini, with a population of 1.1 million, experienced severe HIV/AIDS impacts but has seen significant reductions in HIV incidence and mortality due to successful programs. However, diabetes, hypertension, and lifestyle-related health issues are becoming more prevalent.

In response, the Eswatini Ministry of Health launched a National Non-Communicable Disease Programme in 2013 and developed a strategic plan to reduce NCD-related morbidity and mortality [7]. Despite these efforts, the absence of a formal NCD prevention policy until 2016 hindered progress. In 2020, during the COVID-19 pandemic, the Ministry implemented a community health commodities distribution (CHCD) system to continue providing medications, including for NCDs, while reducing the risk of virus transmission [8]. However, challenges like low medication supply, no transportation subsidies for patients, and dependency on external funding persist [9].

To prevent NCD-related deaths, early detection, treatment, and management are essential. Effective strategies require understanding the scope of NCD prevalence and identifying gaps in care. Investing in primary healthcare and high-impact interventions can improve early diagnosis and treatment, especially in resource-constrained settings, thus preventing many premature deaths due to [10].

This scoping review examines the current state of NCD management in Eswatini, focusing on literature published from 2006 to 2024. It aims to highlight key achievements, challenges and opportunities to inform future policies and interventions for sustainable and equitable healthcare delivery.

2. Materials and Methods

This scoping review was conducted following the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines to ensure transparency and rigor. A comprehensive and iterative search was performed across multiple electronic databases, including PubMed, Medline, Global Health, African Index Medicus, WHO Library and Scopus for articles published between 2006 and 2024. Articles dated that far back to expand data source as it aligned with key policy developments in Eswatini. Additionally, Web of Science, Google Scholar and Google search engines were used to test key words and to identify grey literature such as government and institutional reports, theses and dissertations, as well as to track citations. Therefore, relevant keywords such as "non-communicable diseases," "management," "Eswatini," "Swaziland," "healthcare," and "policy" were incorporated into the search.

Reference lists of relevant studies were also hand searched at the Mbabane National Library to identify further literature of interest. Articles were included if they addressed NCD management strategies, healthcare policies, or interventions in Eswatini. Studies focusing on other regions or not relevant to NCDs were excluded. Studies which were not in English were also excluded to limit findings to Eswatini, an English-speaking population.

Data were extracted and analyzed using narrative synthesis to identify themes and gaps in literature on NCDs and healthcare management. Critical appraisal was not performed, as the study aimed to explore evidence scope. Data came from journal articles, reports, and clinical guidelines. For multiple cohort study publications, the most recent was used. Emerging themes included disease definitions, interventions, diagnostics, primary care, and guideline characteristics. The Arksey and O'Malley framework guided consistent data organization and extraction.

3. Results

3.1. Study design

The database searches identified 49 records. Duplicates were eliminated from these. Through screening of titles and abstracts, 22 (44%) irrelevant records were excluded, which left 27 articles in total. A further 14 (51%) articles were excluded after assessing the full-text and applying the eligibility criteria leaving 13 articles in total. Figure 1 illustrates a flow diagram of included studies through the review process.

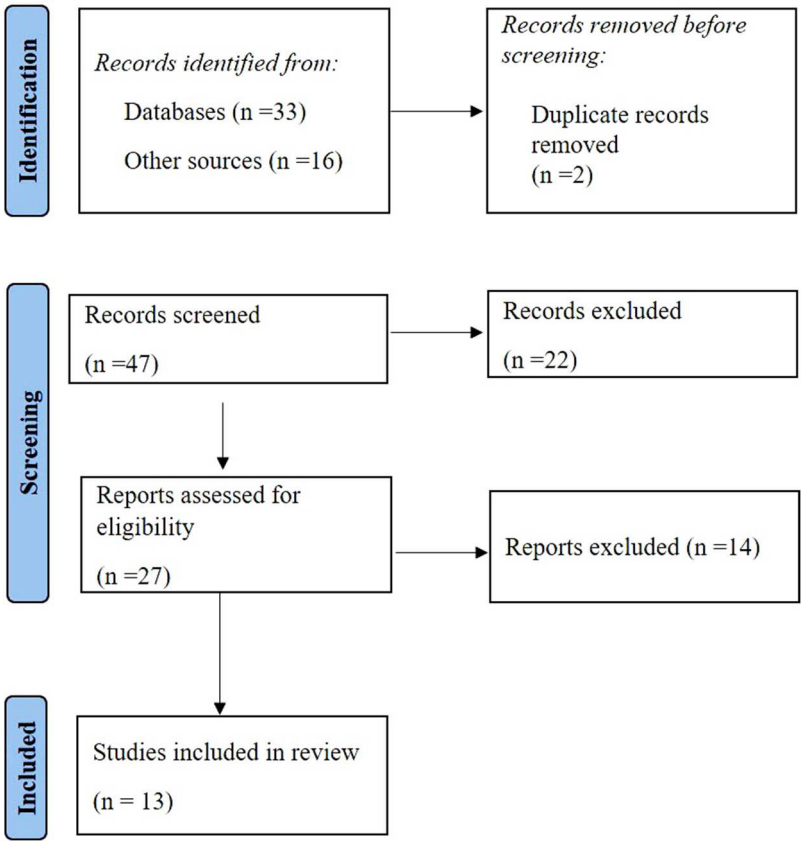

Fig. 1. Flow diagram of included studies through review process.

3.2. Disease focus

Most available studies focused on hypertension, diabetes, and obesity, while few addressed COPD or asthma due to a lack of comprehensive research. Many studies collected data on both hypertension and diabetes, along with related risk factors. Chronic kidney disease was also studied in relation to hypertension. Despite COPD being the third leading cause of NCD mortality, it remains poorly understood due to limited research. Asthma data appeared in some cross-sectional studies, but none met eligibility criteria. A few studies covered breast or cervical cancer, though risk factor data in these was limited [11].

Risk factors for chronic diseases (NCDs) are increasing in Eswatini, with unhealthy diets, physical inactivity, tobacco use, and harmful alcohol consumption being prevalent. The Stepwise approach to surveillance (STEPS) survey in 2014 and a subsequent survey 10 years later revealed concerns about the burden and risk of the population [12, 13]. Eswatini's healthcare system provides basic diagnostics and treatment, with hypertension diagnosis using blood pressure measurement and blood tests, and pharmacological treatment following WHO guidelines [14].

3.3. Policy Implementation and Community Interventions

The Eswatini Ministry of Health implemented the National Non-Communicable Disease Prevention and Control Policy in 2016, resulting in a 4% increase in healthcare service delivery [15]. Due to the high incidence of cervical cancer cases in the nation, the government implemented the HPV vaccine in schools for young girls aged 9 to 14 years which started in 2022 [16]. Research has demonstrated that countries that administer the HPV vaccine witness a substantial decrease in cancer fatalities. Experts recommend prioritizing preventive measures like prophylactic vaccination and cervical screening for cervical lesions [16].

Dlamini [3], emphasizes the importance of multiple stakeholders in preventing and controlling non-communicable diseases. As a result, in Eswatini, organizations like academic institutions, civil societies, and advocacy groups implement this approach, focusing on policy, programming, and service delivery. They advocate for physical fitness, support the hungry, and promote healthy eating habits, with over 1500 participants per event [17]. An intersectoral approach to ensure effective and sustainable prevention and control of NCDs is

being implemented in Eswatini. Table 1 shows actions that have been implemented by different sectors in order to address the social determinants of NCDs in Eswatini.

3.4. Healthcare Infrastructure and Health Professionals Training

The Mbabane Government Hospital, Dvokolwako Health Center, and Pigg's Peak Hospital have expanded to manage NCD, improving treatment outcomes by 3% since 2021 [18]. The government has also established specialized clinics and integrated NCD services into 15 health centers.

The Ministry of Health, in collaboration with the World Health Organization, has initiated training programs for healthcare workers on early detection, diagnosis, and management of noncommunicable diseases (NCDs) [19, 20]. In 2022, 200 healthcare workers, including doctors and nurses, were trained through WHO's PEN guidelines [21]. Other stakeholders, like The Global Fund and PEPFAR, are supporting NCD initiatives, improving infrastructure, and providing essential medicines [22, 23]. This support has been instrumental in improving infrastructure, training healthcare workers, and providing essential medicines for NCD management. Most healthcare workers in primary care settings have received limited training therefore well-designed strategies, supervision, funding, leadership, and sufficient resources will be critical facilitators of successful implementation for the control and prevention of NCDs [24].

Table 1. Inter-sectoral actions to address social determinants of NCDs in Eswatini [17].

INSTITUTION	**IMPLEMENTING DEPARTMENT**	**ACTIVITIES**
Ministry of Education	• National Curriculum Centre • Senior Inspectorate: Sports and Culture	• Develop curricula for schools making sure sports are included for physical activity.
Ministry of Health	• Eswatini Nutrition Council • Non-Communicable Diseases Programme	• Education and demonstration of appropriate food preparation procedures to women groups. • Promotion of physical activity on the local radio. • Educating hypertensive and diabetic patients at various clinics on nutritional methods of control patients • School and community walk-in screening for hypertension, diabetes and breast cancer. • Patient counselling
Ministry of Health	School Health Programme	• Educating scholars on the importance of proper and adequate diet, physical activity, how to handle and cope with physical, mental, emotional abuse.
Ministry of Tinkhundla Administration & Development	• Community development • Women in development	• Provide funding for community projects at the Inkhundla level.
Ministry of Health	Wellness Centre	• Education on exercise, alcohol problems, drug and tobacco abuse and good diet. • Educating and screening for cervical and breast cancer. • Offer monthly BP and diabetes check-ups and medication refills.
Ministry of Health & Social Welfare	Council on Smoking, Alcohol and Drugs (COSAD)	• Advocacy for policies against tobacco and alcohol.

		• Offer rehabilitative and social support, counselling and drug treatment for addicts.
Ministry of Information, Communications & Technology (ICT)	• Times of Eswatini • Eswatini Observer • Eswatini Broadcasting and Information Services (EBIS). • Eswatini Television and Broadcasting Corporation	• Cover and publish news of implementation of activities of programmes. • Publish a health page of global news in order to inform society of the best decisions when disease strikes.
Eswatini National Association of Teachers (ENAT)	• Eswatini School Sports Association • ENAT Cooperatives	• Organize sporting competitions among schools which contributes to promoting physical activity.
Ministry of Economic Planning and Development	• Poverty Reduction Section • Millennium Projects • Aid Coordination and Management • Micro Projects	• Carry out macroeconomic analysis and reports on NCDs. • Coordinates, manages and monitors externally funded projects and implementation of aid policy.

4. Discussion

This scoping review has examined the current management of NCDs in the country and overall, the findings suggest that there is a paucity of data pertaining to yielded results. For example, the study found that there are a number of intersectoral actions (as outlined in the results) that have been put to place and are contributing in the fight against the rising burden of NCDs in the country. However, a few of the studies comprehensively assessed the nature of these actions and their overall output and success.

Intersectoral actions should contribute to improving health promotion by bringing together different sectors like education, housing, transportation, and the economy to address the social determinants of health, allowing for a more comprehensive approach to tackling health issues through coordinated policies and initiatives, ultimately leading to better population health outcomes [21]. Most of the interventions by different sectors (Table 1) such as the Eswatini Nutritional Council have focused on education of the public on risk factors through media and social mobilization as well as on risk factors screening mainly in clinics. Some studies [3, 24] suggest that, an imperative way to control NCDs is to focus on reducing the risk factors associated with these diseases. However, a survey conducted indicates that tobacco use among 18–69-year-olds increased from 6.9% in 2014 to 11% in 2024 [13]. Rates of overweight and obesity are alarmingly high, particularly among women, at 24.7% from 22.9% in 2014. These interconnected risk factors are contributing to a growing environment where NCDs can thrive, placing additional pressure on the healthcare system and society as a whole. Therefore, to lessen the impact of NCDs on individuals and society, a comprehensive approach is needed requiring all governmental sectors from health to finance to education and others to collaborate in reducing the risks with NCDs and to promote interventions to prevent and control them.

Studies suggest that women carry higher risk of NCDs than men because of their lack of physical activity. However, it is of common knowledge that women generally tend to pay more attention to their diet than men [17]. Therefore, education campaigns and community initiatives might need to be tailored for men and women. Many NCDs and their complications are preventable, making their high rates unacceptable and can be prevented if high-risk individuals are detected early and treated. This is to say that people suffering from NCDs need access to treatment in both government and private health facilities, however, gaps such as poor access to basic services in primary health care, lack of affordability of laboratory tests and medicines, inappropriate patterns of clinical practice and poor adherence to treatment exist. At times due to drug stock outs in governmental facilities, patients prefer to seek treatment in private facilities and are met with affordability challenges [24].

This study found numerous efforts by the ministry of health to integrate NCD management into primary healthcare services [17, 25], but despite these efforts, the country's infrastructure is still under-developed, particularly in rural areas. In fact, only 30% of the facilities have functional equipment, efficient diagnostic tools, and adequate medications required for comprehensive NCD care [9, 15]. There is no ‘home’ for

prevention within healthcare in Eswatini. There are no community-based prevention centers that can be directly accessed by anyone seeking to maintain or improve their health. There are no programmes of population-wide scale that focus on behavioral change with regard to physical activity, exercise or other lifestyle options. This vacuum is being filled by weight loss centers, fitness and wellness studios; an industry founded on principles that differ from those that underpin the healthcare industry. This results in a low level of interaction and coordination since the healthcare system tends to view these industries as lacking the credibility and authenticity to partner on prevention.

To establish actual centers to design, implement, study and improve preventive programmes for chronic disease, the value provided by evidence-based medicine needs to be combined with the value provided by the fitness, wellness and weight-loss industries with their action-oriented approach and wide distribution network. Moreover, patients are often given solutions that only focus on the treatment of their diseases instead of solutions that also incorporate aspects of desirability. Prescribing a medication is one treatment option for many diseases, however, without a behavioral plan for habit formation, compliance may impede the success of this treatment option. Therefore, a methodology for innovation that requires engaging people in order to understand their preferences is required and this methodology is called the human-centered design [25,26]. This methodology can be combined with interdisciplinary medical caregiving approaches that improve the quality of life of patients and their families who are facing problems associated with life threatening illnesses, which the WHO describes as palliative care.

Furthermore, many primary healthcare facilities are not equipped to handle the increasing burden of NCDs, leading to overcrowding and strain on secondary and tertiary healthcare institutions. This is further exacerbated by the fact that a substantial portion of the healthcare budget and infrastructure is still dedicated to combating communicable diseases, particularly HIV/AIDS, which has been a major health concern in the country for decades [27, 28]. Consequently, the infrastructure for NCD management remains underfunded and underdeveloped. With ongoing projects aimed at upgrading healthcare facilities and improving access to essential medicines for NCDs.

As revealed by this study, the government has also prioritized early detection and screening for NCDs. Mobile health clinics and regular health screenings in communities are conducted to identify individuals at risk. For instance, regular blood pressure and glucose level checks are available in both urban and rural areas. This approach aims to catch diseases at an early stage, making them easier to manage and treat. However, this is being hindered by the limited training health workers receive. The unavailability of medication supplies is also a huge problem. A study conducted in 2013 shows that till to date there is frequent rationing of diabetes and hypertension medications [29]. Normally patients should receive a supply sufficient for one month but are only given enough medication for shorter periods because clinics regularly run out of certain medications such as hydrochlorothiazide [30]. Behavioral and cultural factors also pose significant challenges. Despite awareness campaigns, lifestyle changes are slow, and many people continue to engage in risky behaviors such as tobacco use and unhealthy eating. Additionally, there is often a lack of understanding of the importance of regular health check-ups, leading to late detection of NCDs.

5. Conclusion

Eswatini has made significant strides in addressing the growing burden of NCDs through government-led initiatives, integration of services into primary healthcare, and collaboration with international partners. However, there are serious limitations that continue to impede progress. This review provides updated and reliable information that could be useful in the design of policy measures that aim to improve NCD management in Eswatini and the Sub-Saharan region. The paramount importance of relevant data on NCDs cannot be stretched enough, there remains a pressing need to establish robust data collection systems for NCDs and their modifiable risk factors, covering factors like screening, treatment, patient referrals and healthcare workers training. Such data is crucial for informing policy, guiding interventions and evaluating improvements in health outcomes for NCDs.

REFERENCES

1. World Health Organization. Non-communicable diseases mortality [Internet]. 2023 [cited 2025 Oct 20]. Available from: https://www.who.int/data/gho/data/themes/topics/topic-details/GHO/ncd-mortality.
2. Sharp A, Riches N, Mims A, Ntshalintshali S, McConalogue D, Southworth P, et al. Decentralising NCD management in rural Southern Africa: evaluation of a pilot implementation study. BMC Public Health. 2020;20(44):2. Available from: https://doi.org/10.1186/s12889-019-7994-4.
3. Dlamini B. Bringing heart diseases service closer to home in Eswatini. Non-communicable Diseases Associate. Clinton Health Access. 2020;1(1):1. Available from: http://www.clintonhealthaccess.org.
4. Eswatini Health Insurance. Pacific Prime International [Internet]. 2016 [cited 2025 Oct 20]. Available from: https://www.pacificprime.com/country/africa/swaziland-health-insurance/.
5. Gbadamosi MA, Tlou B. Modifiable risk factors associated with noncommunicable diseases among adult outpatients in Manzini, Swaziland: a cross-sectional study. BMC Public Health. 2020;20(665):2. Available from: https://doi.org/10.1186/s12889-020-08816-0.
6. World Health Organization. Non-communicable diseases country profiles 2018 [Internet]. Geneva: WHO; 2018 [cited 2025 Oct 20]. Available from: https://www.who.int/publications/i/item/ncd-country-profiles-2018.
7. Eswatini Ministry of Health. Annual non-communicable diseases program report. Mbabane: Ministry of Health; 2016 [cited 2025 Oct 20]. Available from: https://www.gov.sz/index.php/health-documents.
8. Goldstein D, Ford N, Kisyeri N, Munsamy M, Nishimoto L, Osi K, et al. Person-centred, integrated non-communicable disease and HIV decentralized drug distribution in Eswatini and South Africa: outcomes and challenges. J Int AIDS Soc. 2023;26(S1):e26113. Available from: http://onlinelibrary.wiley.com/doi/10.1002/jia2.26113/full.
9. Rural Health Information. Healthcare access in rural communities [Internet]. 2024 [cited 2025 Oct 20]. Available from: https://www.ruralhealthinfo.org/topics/healthcare-access#:~:text=Distance%20and%20Transportation,related%20issues%20for%20rural%20communities.
10. Maseko T, Pfaff C, Mwisongo A. Understanding of healthcare workers on the content of palliative care policy in Shiselweni, Swaziland: a qualitative study. Ecancermedicalscience. 2018;12:857. Available from: https://doi.org/10.3332/ecancer.2018.857.
11. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2018;68(6):394–424. Available from: https://doi.org/10.3322/caac.21492.
12. World Health Organization, Eswatini Ministry of Health. The WHO STEPS survey: Eswatini 2014 [Internet]. 2014 [cited 2025 Oct 20]. Available from: https://cdn.who.int/media/docs/default-source/ncds/ncd-surveillance/data-reporting/eswatini/steps/swaziland-2014-steps-report.pdf.
13. World Health Organization. Eswatini Ministry of Health annual report 2024 [Internet]. 2024 [cited 2025 Oct 20]. p.27. Available from: https://www.afro.who.int/sites/default/files/2025-07/Eswatini%202024%20Annual%20Report%20.pdf.
14. World Health Organization. Guideline for the pharmacological treatment of hypertension in adults. Geneva: WHO; 2021. Available from: https://www.who.int/publications/i/item/9789240033986.
15. Eswatini Ministry of Health. Eswatini national strategic plan for the prevention and control of non-communicable diseases 2021 [Internet]. 2021 [cited 2025 Oct 20]. Available from: https://infocenter.nercha.org.sz/ncd_strategicplan_2021.
16. Kunene N. HPV vaccine rolls out in Eswatini [Internet]. 2021 [cited 2025 Oct 20]. Available from: https://www.gavi.org/vaccineswork/hpv-vaccine-rolls-out-eswatini.
17. World Health Organization. Addressing key determinants of non-communicable diseases using an intersectoral approach: the Swaziland experience. Geneva: WHO Regional Office; 2013. p.1,19–28. Available from: https://actionsdg.ctb.ku.edu/wp-content/uploads/Addressing-key-determinants-of-NCD-using-an-intersectoral-approach.pdf.
18. Goudge J, Gumede T, Gilson L, Russell S, Tollman SM, Mills A. Coping with the cost burdens of illness: combining qualitative and quantitative methods in longitudinal household research. Scand J Public Health Suppl. 2007;35(69):181–5. Available from: https://doi.org/10.1080/14034950701355551.
19. Mndebele SC, Moodley I, Mthethwa MD, et al. Evaluation of the knowledge and skills of primary healthcare nurses in Swaziland. Afr J Prim Health Care Fam Med. 2017;9(1). Available from: https://doi.org/10.4102/phcfm.v9i1.1464.

20. Sibandze BT, Gamedze V, Simelane S. Continuing professional development for healthcare workers in Eswatini: perceptions and challenges. Afr J Prim Health Care Fam Med. 2020;12(1). Available from: https://doi.org/10.4102/phcfm.v12i1.2266.
21. World Health Organization. Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings. Geneva: WHO; 2020. Available from: https://www.who.int/publications/i/item/who-package-of-essential-noncommunicable-(pen)-disease-interventions-for-primary-health-care.
22. World Health Organization. Eswatini national non-communicable diseases prevention and control policy. 2016. p.3–10. Available from: https://www.iccp-portal.org/system/files/plans/SWZ_B3_Swaziland%20National%20NCD%20Policy%202016.pdf.
23. Goldstein D, Salvatore M, Ferris R, Phelps BR, Minior T. Integrating global HIV services with primary healthcare: a key step in sustainable HIV epidemic control. Lancet Glob Health. 2023;11(7). Available from: https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(23)00156-0/fulltext.
24. McArthur C, Bai Y, Hewston P, Giangregorio L, Straus S, Papaioannou A. Barriers and facilitators to implementing evidence-based guidelines in long-term care: a qualitative evidence synthesis. Implement Sci. 2021;16(1):70. Available from: https://doi.org/10.1186/s13012-021-01140-0.
25. Budreviciute A, Damiati S, Sabir DK, Onder K, Schuller-Goetzburg P, Plakys G, et al. Management and prevention strategies for non-communicable diseases and their risk factors. Front Public Health. 2020;8:574111. Available from: https://doi.org/10.3389/fpubh.2020.574111.
26. Eswatini Ministry of Health. National health sector strategic plan 2019–2023. Mbabane: Ministry of Health; 2019. Available from: https://www.afro.who.int/sites/default/files/2025-02/NHSSP%20ESWATINI%20.pdf.
27. Baxter LM, Eldin MS, Al Mohammed A, Saim M, Checchi F. Access to care for non-communicable diseases in Mosul, Iraq between 2014 and 2017: a rapid qualitative study. Confl Health. 2018;12(48). Available from: https://doi.org/10.1186/s13031-018-0183-8.
28. Matheson G, Klügl M, Engebretsen L, Bendiksen F, Blair SN, Börjesson M, et al. Prevention and management of non-communicable disease: the IOC consensus statement, Lausanne. Clin J Sport Med. 2013;47:1–11. Available from: https://pubmed.ncbi.nlm.nih.gov/24129783/.
29. World Health Organization. A global brief on hypertension. Geneva: WHO; 2013. Available from: http://www.who.int/cardiovascular_diseases/publications/global_brief_hypertension/en/.
30. Kassa MD, Grace JM. Noncommunicable diseases prevention policies and their implementation in Africa: a systematic review. Public Health Rev. 2022;43:1604310. Available from: https://doi.org/10.3389/phrs.2021.1604310.