



Availability and Functional Status of Essential Equipment, Tools, and Documentation for Non-Communicable Disease Screening at Healthy Lifestyle Centres in Badulla District, Sri Lanka

Thennakoon TMCLB¹, Sinhaprathapa SWMKK²

¹District General Hospital, Ampara, ²Provincial Directorate of Health Services, Central Province

Correspondence to:
TMCLB Thennakoon

E-Mail
lakmal1985.01.28@gmail.com

Key Words:

Non-communicable diseases,
Healthy Lifestyle Centres,
Sri Lanka,
service readiness,
primary healthcare

Abstract

Introduction: Non-communicable diseases (NCDs) account for more than 75% of annual fatalities in Sri Lanka. The Healthy Lifestyle Centre (HLC) network is crucial in early detection and prevention, significantly lowering morbidity. Evaluating the accessibility, state of essential screening equipment, and documentation is key for assuring service preparedness.

Objective: To assess the availability and functional status of essential equipment, tools, and documentation for NCD screening at Healthy Lifestyle Centres (HLCs) in the Badulla District.

Methods: A descriptive cross-sectional survey was conducted at all functioning healthy lifestyle Centres (N= 53) in Badulla District in year 2022. Direct observational checklist based on the JICA - NCD Readiness Tool and WHO - SARA (2017) was used to collect data by principal investigator.

Results: Around 98 % of HLCs had BP meters, with 62.3% using manual and digital versions. All HLCs had functioning weighing scales, measuring tapes, and height measurement devices (stadiometers). Visual acuity checking tool called "Snellen charts" were available in 69.8% of facilities. However, only 11.3% and 28.3% of facilities had Peak Expiratory Flow Rate (PEFR) meters and tuning forks respectively. Glucometers and cholesterol meters were available in all HLCs, only 5.7% had urine reagent strips. Among those HLCs 94.3% had participant registers, whereas 49.1% updated follow-up registers.

Conclusions and Recommendations: Despite the availability of essential tools for NCD screening, several diagnostic and documentation gaps have been found. Enhancing inventory management, ongoing monitoring, and assuring a seamless supply chain are essential for improving preparedness and service delivery quality at HLCs in primary healthcare.

Introduction

About 71% of deaths worldwide are attributable to non-communicable diseases (NCDs), which include Cancer, Diabetes Mellitus, Cardiovascular disease, and Chronic Respiratory Conditions (1). They are responsible for over four out of every five mortalities in Sri Lanka each year (2).

These illnesses have placed a tremendous strain on the country's healthcare system, highlighting the importance of early detection and prevention through efficient primary care systems. As part of the National NCD Prevention Programme, the Ministry of Health introduced the Healthy Lifestyle Centre (HLC) project in 2011 to address this (3). Through population-based screening for those over 35 years, HLCs aims to identify modifiable risk factors, with a particular emphasis on behavioral risk assessments, blood pressure, blood sugar, cholesterol, and body mass index (BMI) (4). Service preparedness is contingent upon the

availability of operational equipment, supplies, and documentation systems (5). The WHO Service Availability and Readiness Assessment (SARA) framework offers a methodical approach to assessing these capabilities (6). Likewise, the Japan International Cooperation Agency (JICA) NCD preparedness tool, tailored to the context of Sri Lanka, delineates basic parameters for service provision (7). Nonetheless, evidence about the operational readiness of HLCs is few, especially in estate and rural contexts like the Badulla District. This study seeks to address the deficiency by evaluating the accessibility and state of essential supplies, tools, and records utilized for NCD screening.

Methods

Design

A descriptive cross-sectional study was conducted to assess the availability and functionality of necessary screening equipment, tools, and

documentation at all 53 Healthy Lifestyle Centres in the Badulla District, Sri Lanka.

Study Setting and Duration

From March until June of 2022, the research was carried out across all 53 HLCs that were operational and were under authority of the Regional Directorate of Health Services in Badulla.

Data Collection Tool

The JICA NCD Readiness Assessment Tool and the WHO SARA 2017 Manual served as the foundation for the development of this observational checklist. The availability of equipment for screening and its degree of functionalities were listed on the checklist and tools for diagnosis and laboratory work that are readily available. It is necessary to keep essential registers and paperwork updated.

Data Collection and Analysis

Trained observers conducted visits to each HLC and documented their findings. Data were input into Microsoft Excel and analyzed through descriptive statistics, including frequencies and percentages. The findings were displayed in tabular format for enhanced clarity.

Results

Thirty-three centres(62.3%), were equipped with both manual and digital blood pressure apparatus, whereas twenty centres(37.7%), depended primarily on digital apparatus. One hundred percent of the centres were equipped with weighing scales, measuring tapes, and height measuring machines. It was possible to obtain “Snellen charts” in 69.8 percent of the centres.

It was satisfactory that glucometers and cholesterol meters were among the available options. Despite this, only 11.3% of HLCs had PEFR devices, and only 5.7% had urine reagent strips, which severely restricted their ability to perform comprehensive NCD screening.

In virtually all of the centres, participant records were kept up to date; however, follow-up paperwork was updated in less than half of the centres (49.1%), which hinders the organisation of long-term patient tracking. The overall service utilization at HLCs were 34% and Male participation was 12% while female participation is 88% during the year 2022.

Table 1. Availability of Basic Screening Equipment

Type of Equipment	Frequency	Percentage (%)
BP apparatus available inside unit	41	77.4
BP apparatus shared from another unit	11	20.8
Not available	1	1.8
Total	53	100

Table 2. Availability of Diagnostic and Laboratory Tools

Equipment/Tool	Frequency	Percentage (%)
PEFR Device (Lung Function Test)	6	11.3
Tuning Fork	15	28.3
Ophthalmoscope	28	52.8
Glucometer (Functioning)	53	100
Glucometer Strips Adequate	48	90.6
Cholesterol Meter	53	100
Cholesterol Strips Adequate	50	94.3
Urine Strips (Protein/Ketone)	3	5.7

Table 3. Availability and Maintenance of Registers

Type of Register	Availability	Percentage (%)
Participant Register (Updated)	50	94.3
Follow-up Register (Updated)	26	49.1
Monthly Report (Updated)	40	75.5
Visitors' Book (Updated)	21	39.6

Discussion

As a result of this study, it was discovered that the majority of Healthy Lifestyle Centres in the Badulla District are equipped with the fundamental instruments required for preliminary NCD screening. Nevertheless, there are still limitations in diagnostic and documentation techniques, which are comparable to the findings of WHO SARA-based studies conducted in other low- and middle-income countries (8–10).

The availability of blood pressure apparatus and anthropometric instruments was very prevalent, which is evidence that HLC criteria were adhered to (11). There are deficiencies in the screening for chronic respiratory and kidney diseases components of the NCD package (12,13), as indicated by the absence of PEFR devices and urine strips.

Inadequacies in documentation, particularly in follow-up registers, weaken the continuity of care and make it more difficult to evaluate the results of therapy. A study conducted in the Western Province of Sri Lanka revealed similar findings, namely that there were gaps in follow-up and poor data entry at the primary care level (14). It is possible that delays in the procurement process and financial constraints are to blame for the frequent shortages of consumables like urine reagent strips and the restricted access to more sophisticated diagnostic instruments (15,16). In addition, assessments that were sponsored by JICA brought to light the necessity of enhancing the management of the supply chain for consumables (17).

The fact that glucometers and cholesterol meters are available in every single establishment demonstrates that donor-supported investments have been beneficial. The continued functionality, on the other hand, is contingent upon the timely replacement of strips and batteries, which necessitates improved forecasting at both the district and national levels (18). In accordance with global research based on SARA, these findings highlight the discrepancies that exist between basic and advanced service preparation in NCD programs (19–22). Integrating digital health reporting and enhancing accountability mechanisms through periodic audits might enhance the reliability of HLC service delivery (23–25).

Healthy Lifestyle Centres (HLCs) are scheduled preventive care services within primary healthcare institutions, according to Ministry of Health circulars and guidelines published since 2011. They require specific space, essential screening equipment, and basic infrastructure for NCD risk assessment and lifestyle counselling, but they do not require continuous or 100% service availability [26,27]. While maintaining the demand of regular,

functional clinic sessions supported by sufficient equipment and infrastructure rather than continuous operation, subsequent revisions culminating in the 2019 guideline reinforced standardised screening protocols, referral mechanisms, and data recording [28, 29].

In contrast to the national requirements for Healthy Lifestyle Centres in 2022, the majority of centres had access to basic NCD screening equipment and consumables. Nonetheless, reliance on shared equipment and limited access to other resources suggest a partial lack of adherence to thorough screening requirements. Poor updating of follow-up registrations and visitor books reveals gaps in continuity of care and efficiency monitoring, despite the fact that participant registers and monthly reports were generally kept up to date. In general, centres fulfilled national standards for complete evaluation and follow-up, although they were not adequately equipped for basic screening. It is very important to assess the service utilization at HLCs, but due to the prevailing COVID-19 pandemic situation service it was not possible due to tight movement restrictions imposed for people.

Conclusion

A satisfactory degree of readiness for noncommunicable disease screening is demonstrated by Healthy Lifestyle Centres in the Badulla District, notably with regard to the measurement of blood pressure, glucose, and cholesterol. In spite of this, the comprehensiveness of the service delivery is jeopardised by limitations in pulmonary function equipment, urine testing materials, and record maintenance. Strengthening the administration of logistics, improving supervision, and integrating digital reporting systems are all essential components in order to enhance the performance of HLC. Overall, limitations in comprehensive assessment tools and follow-up documentation limited full compliance with guideline expectations, even though Healthy Lifestyle Centres generally met national standards for baseline NCD screening in 2022. Although there are currently limited publicly available sources of national-district comparative consumption data, their availability would improve evaluations of Badulla District performance.

Recommendations

An inventory monitoring system that is centralized could be established at the district level. Maintain regular oversight and conduct readiness audits on a quarterly basis. A refresher training session on documentation requirements should be conducted for the HLC staff. Ensure that sufficient financing is available and that the supply chain is coordinated for consumables. For the purpose of HLC reporting and patient follow-up, electronic record systems should be implemented.

References

1. WHO. Global Status Report on Noncommunicable Diseases 2023. Geneva: World Health Organization; 2023.
2. Ministry of Health Sri Lanka. National NCD Strategic Plan 2022–2027. Colombo: MoH; 2022.
3. Jayasuriya R, Senaratne R. Implementation of Healthy Lifestyle Centres in Sri Lanka. *Asia Pac J Public Health*. 2018;30(3):210–8.
4. Herath T, et al. Utilization and barriers of Healthy Lifestyle Centres in Sri Lanka: a qualitative study. *BMJ Open*. 2023;13(7):e067464.
5. WHO. Package of Essential Noncommunicable Disease Interventions (PEN) for Primary Health Care. Geneva: WHO; 2020.
6. WHO. Service Availability and Readiness Assessment (SARA): Reference Manual. Geneva: WHO; 2017.
7. Japan International Cooperation Agency. NCD Readiness Assessment Tool. Tokyo: JICA; 2018.
8. Ghimire U, et al. Health system readiness to provide NCD services in Nepal. *BMC Public Health*. 2020;20(1):917.
9. Armstrong-Hough M, Kishore SP, Byakika S, et al. Disparities in availability of essential medicines for NCDs: a Poisson analysis using SARA data in Uganda. *PLoS One*. 2018;13(2):e0192332.
10. Paromita P, et al. Assessing readiness to manage NCDs using WHO SARA tool. *Int J Health Policy Manag*. 2021;10(3):142–51.
11. Perera S, et al. Readiness of primary care for NCD management in Sri Lanka. *BMC Health Serv Res*. 2019;19(1):104.
12. Thapa R, et al. Readiness of the health system to provide NCD services in Nepal. *Front Public Health*. 2024;12:11476966.
13. WHO. WHO Noncommunicable Disease Progress Monitor 2022. Geneva: WHO; 2022.
14. De Silva V, et al. Prescription and documentation errors in outpatient care in Sri Lanka. *Ceylon Med J*. 2018;63(4):171–8.
15. Wijesekara M, et al. Resource constraints in primary care facilities in Sri Lanka. *Health Serv Res Manag Epidemiol*. 2020;7:2333392820950205.
16. JICA Sri Lanka. Review of NCD programme readiness. Colombo: JICA; 2021.
17. Rathish D, et al. Health system capacity for chronic disease care. *Int J Non-Commun Dis*. 2019;4(2):40–7.
18. WHO SEARO. Health system strengthening for NCDs in South-East Asia. New Delhi: WHO SEARO; 2020.
19. Sharma A, et al. Readiness assessment for NCD care in India. *BMC Health Serv Res*. 2021;21(1):515.
20. Balasubramanian K, et al. Primary healthcare preparedness for NCDs in LMICs. *Lancet Glob Health*. 2020;8(6):e750–8.
21. Smith J, et al. Barriers to NCD care in rural primary care settings. *Health Policy Plan*. 2022;37(5):622–31.
22. WHO. Monitoring Framework for Universal Health Coverage. Geneva: WHO; 2019.
23. Gunawardhana A, et al. Strengthening district-level monitoring for NCD care. *SL J Med Admin*. 2022;9(1):22–9.
24. Wickramasinghe K, et al. Implementation gaps in NCD policy in South Asia. *Global Health Action*. 2019;12(1):1619672.
25. Bandara P, et al. Role of digital health in improving NCD monitoring in Sri Lanka. *Health Informatics J*. 2024;30(2):12–22.
26. Ministry of Health Sri Lanka. Guideline for the establishment of Healthy Lifestyle Centres (HLCs) in healthcare institutions. Colombo: Non Communicable Disease Unit; 2011.
27. Ministry of Health Sri Lanka. Operational guidelines for Healthy Lifestyle Centres. Colombo: Non Communicable Disease Unit; 2013.
28. Ministry of Health Sri Lanka. Guideline for Healthy Lifestyle Centres – revised edition. Colombo: Non Communicable Disease Unit; 2019.
29. Ministry of Health Sri Lanka. National policy and strategic framework for prevention and control of non-communicable diseases. Colombo: Ministry of Health; 2016.