Quarterly NCD Report

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Towards a Healthy Lifestyle
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CVD risk assessment

Usage of tobacco, having an unhealthy diet, being physical inactive, being obese, having elevated blood pressure, having abnormal blood lipids (being a dyslipidaemic) and having an elevated blood glucose (being a diabetic) are considered as risk factors that influence the development of cardio-vascular diseases (CVD). If an individual continuously exposed to these risk factors, it may lead to further progression of atherosclerosis, resulting in clinical manifestations of CVD that includes angina pectoris, myocardial infarction, heart failure and stroke. Therefore, it is evident that total CVD risk depends on the individual's overall risk-factor profile.

In the year 2007, WHO published guidelines for the assessment and management of CVD risk that provide guidance for reducing disability and premature deaths from CVD in people at high risk who have not yet experienced a cardiovascular event. The WHO and International Society of Hypertension (WHO/ISH) CVD risk prediction charts for the regions were published. In the year 2019, WHO updated the CVD risk chart.

In view of maximizing between-region variability and minimizing heterogeneity in mortality and major drivers of health outcomes within each region, the 2019 CVD risk prediction charts were designed and tested for 21 global regions. They are produced as laboratory-based and non-laboratory-based charts. The laboratory-based algorithms use information on age, sex, smoking status, systolic blood pressure, history or evidence of diabetes mellitus, and the total cholesterol value as input variables. The non-laboratory-based algorithms require age, sex, smoking status, systolic blood pressure and body mass index (BMI) as inputs variables, information on diabetes mellitus and cholesterol are not required for these charts. This approach is not recommended to use in those with persistently raised blood pressure 160/100 mmHg or more, diabetes with renal disease, established ischemic heart disease and blood cholesterol 309 mg/dl or more.

Laboratory-based CVD risk charts are recommended in a setting where laboratory facilities, and human and financial resources are accessible. These charts would facilitate health providers to initiate an intervention and treatment regimen, and to implement an appropriate follow-up plan based on the patient's total risk status.

Non-laboratory-based WHO CVD risk charts could be used to predict total CVD risk without information on total cholesterol and diabetes in low-resource settings where limited testing facilities or limited financial and physical capacity for biochemical measurements are available. These charts can be used for decisions regarding referral i.e. identifying a subset of the population who might benefit from laboratory-based risk assessment charts and could allow for a two-stage process that reduces the number of people at lower levels of risk who are subjected to unwarranted testing in resource poor settings. In such circumstances individuals with a total CVD risk level of 10% and above should receive an assessment using laboratory-based charts after measurement for diabetes and cholesterol. It has been revealed, an existence of a moderate agreement between WHO CVD risk predictions using laboratory and non-laboratory algorithms in population samples. Furthermore, non-laboratory-based CVD risk chart does not allow for the extra CVD risk associated with diabetes mellitus and substantially underestimates CVD risk in individuals with diabetes mellitus.

References

1.World Health Organization, 2020. Hearts: technical package for cardiovascular disease management in primary health care

2.World Health Organization, 2020. WHO package of essential noncommunicable (PEN) disease interventions for primary health care

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Screening of eligible participants for chronic NCDs

Screening for chronic NCDs is conducted in healthy lifestyle centers. There are 1015 Healthy Life Centers in Sri Lanka with the majority of them functioning in primary care institutions. The 35 years and above age group are considered as the target population eligible for screening, which is estimated as 40% of the mid-year population. A total of 132,057 participants were screened during the 1st quarter of 2022 and the estimated mid-year population for the year 2021 was used for the calculations.

Table 1 shows the cumulative number of eligible participants screened from the year 2011 to the first quarter of 2022.

Table 1: Eligible participants screened from the year 2011 to first quarter of 2022

Year	Eligible participants screened (%)	Percentaage of eligible participants screened	Cumulative number of eligible participants screened
2011	131,144	2.6	131,144
2012	203,939	4.0	335,083
2013	336,446	6.6	671,529
2014	383,161	7.5	1,054,690
2015	391,260	7.7	1,445,950
2016	540,535	10.6	1,986,485
2017	493,965	9.7	2,480,450
2018	511,438	10.0	2,991,888
2019	605,148	6.9	3,597,036
2020	321,055	3.7	3,918,091
2021	255,333	2.9	4,173,424
2022 Q1	132,057	1.5	4,305,481

Of the target population, only 1.51 % (132,057) was screened which included 87,257 (66.08%) females and 44,800 (33.92%) of males. Mannar, Monaragala, Polonnaruwa and Badulla were the districts with the best coverage.

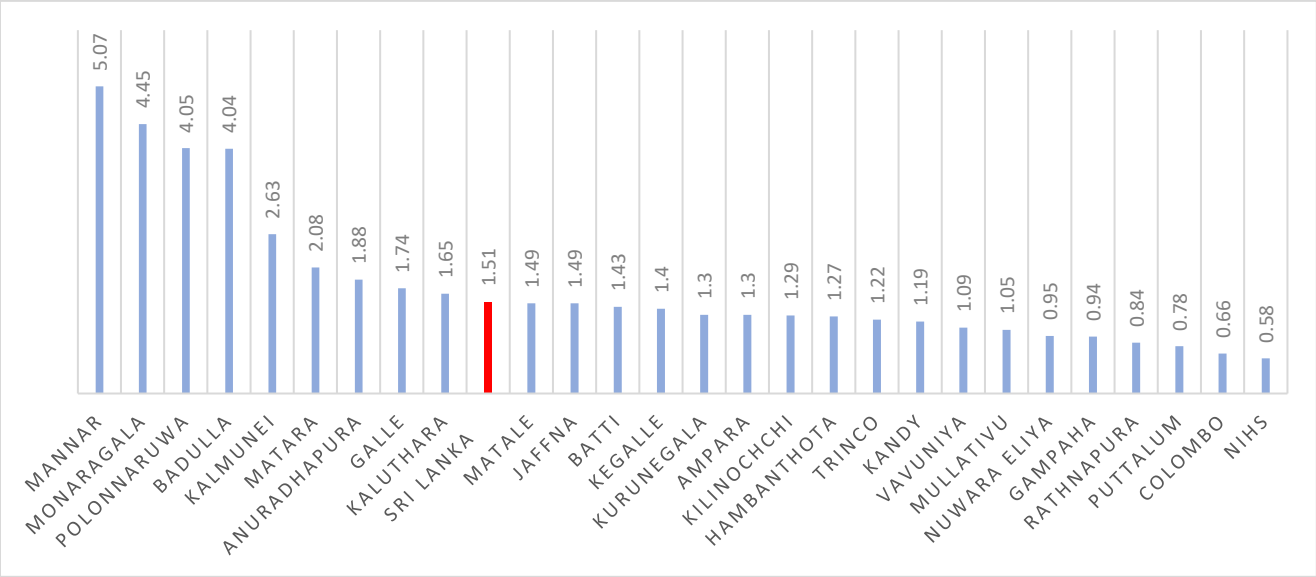

Figure 1: Distribution of percentage of eligible participants screened by the district in 1st quarter, 2022.

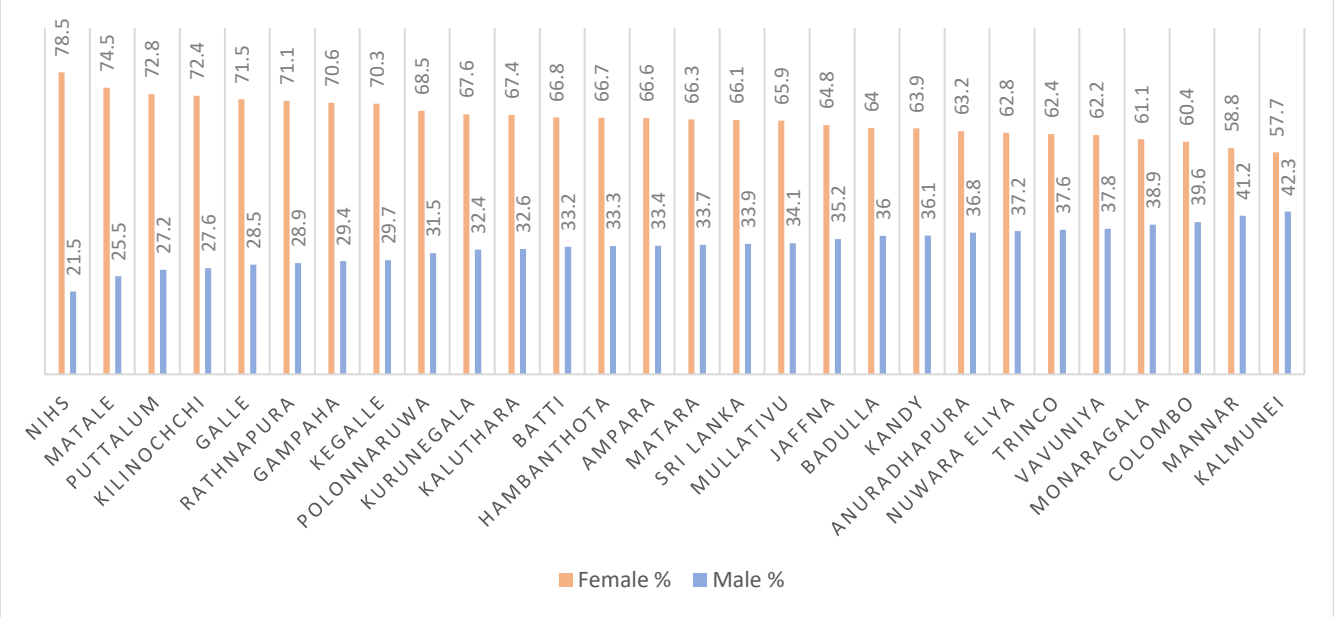

Figure 2: Distribution of percentage of eligible males and female participants screened by the district in 1st Quarter of 2022

Screening for risk factors

Tobacco Smoking[1]

Out of the total eligible population screened, 7.83 % (n=10,315) were tobacco smokers. From the eligible male population screened, 9,990 (22.4%) were tobacco smokers and among the eligible female population screened only 325 (0.37%) were tobacco smokers.

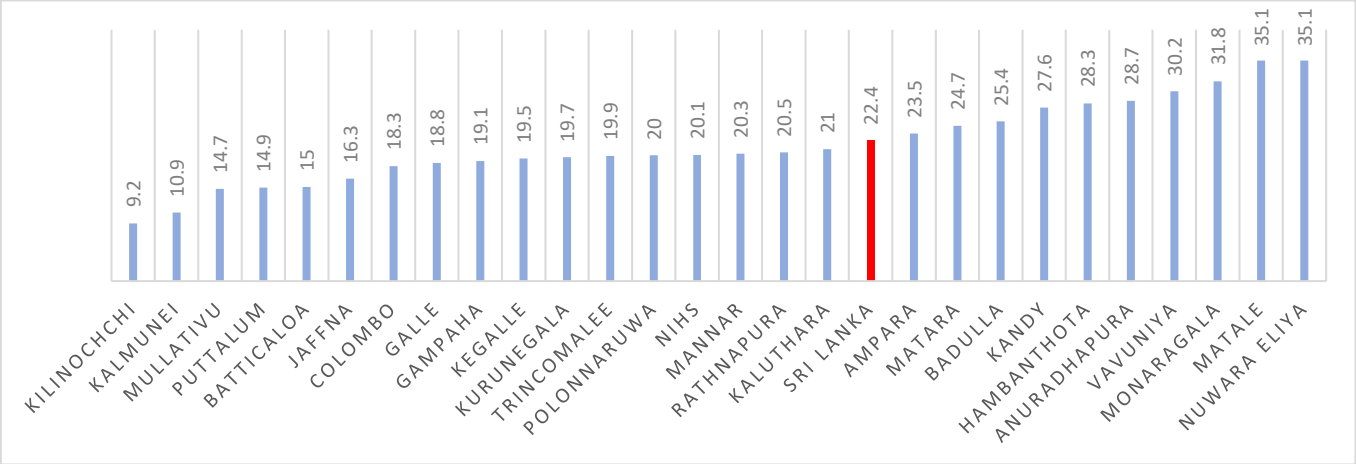

Figure 3: Distribution of percentage of male tobacco smokers among the total eligible male population screened by the district in 1st quarter 2022

Chewing betel (with tobacco or arecanut)[2]

Among the eligible population screened 22,217 (18.2%) chew betel (with or without tobacco) while 31.6% (n=14,089) males and 9.7% (n=8,128) females chew betel among the respective eligible populations screened.

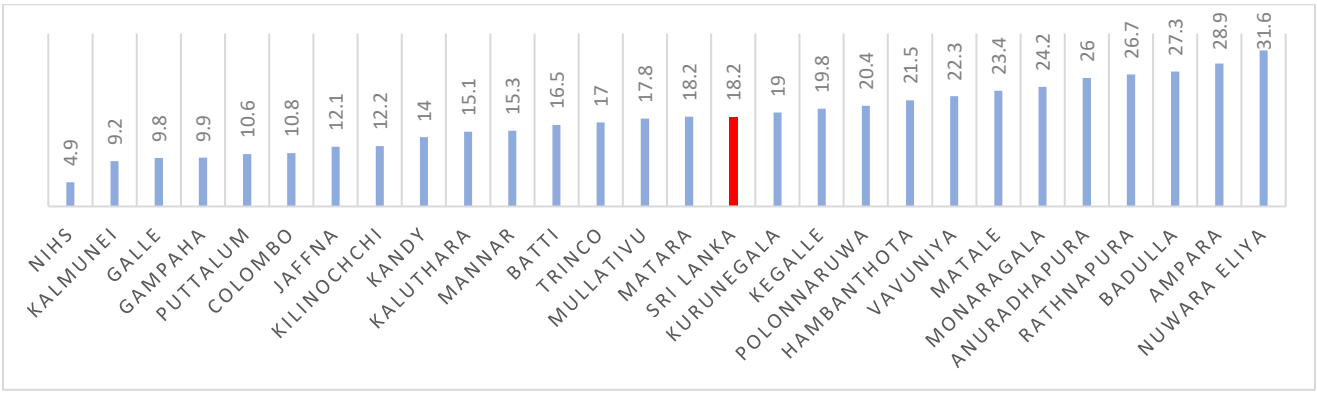

Figure 4: Distribution of percentage of participants chewing betel with tobacco or arecanut among the eligible population in screened-in 1st quarter, 2022

[1] All current tobacco smokers and those who have quitted tobacco smoking less than a year before the assessment were considered as tobacco smokers. Since tobacco smoking among females was very low, the percentage of male smokers out of the eligible males screened is described to prevent the underestimation of the prevalence of smoking where the majority of screened were females

[2] Current betel chewers (with tobacco or arecanut) and those who have quitted betel chewing within a year of the assessment were considered as betel chewers

Alcohol use[3]

Of the eligible population screened, 12.3% (n=16,250) were alcohol users. There were 0.21% (n=183) female and 36.0% (n=16,063) male alcohol users among the respective eligible populations screened.

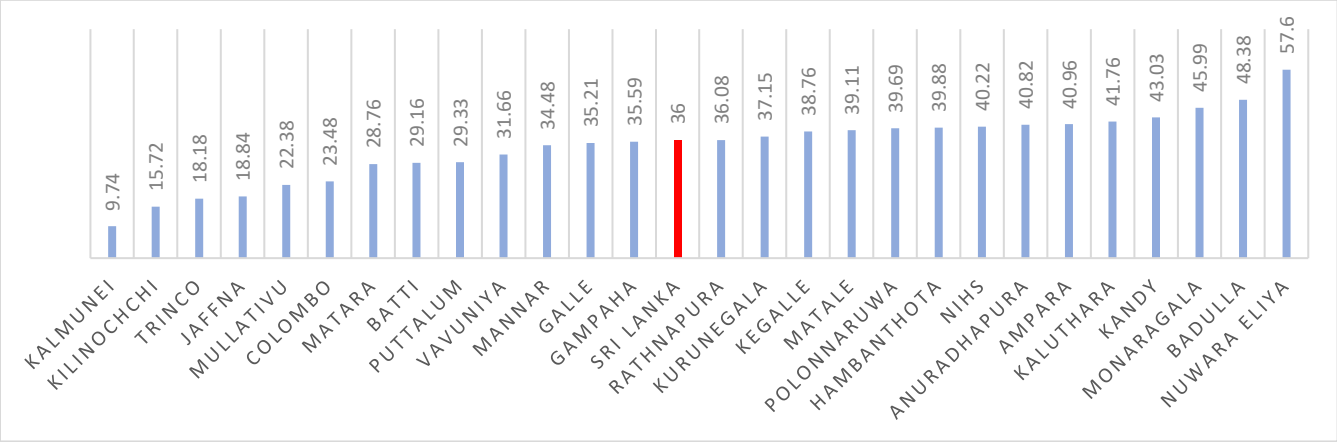

Figure 5: Distribution of percentage of male alcohol users among the eligible males screened by the districts in 1st quarter, 2022

Overweight[4] and obesity[5]

Of the eligible population screened, 29.52% (n=38,904) and 11.82% (n=15,580) were found to be overweight and obese respectively. Prevalence of over weight was 32.3% (n=28,143) and 24.1% (n=10,761) among females and males screened. The proportion of obesity was 14.4% (n=12,536) and 6.8% (n=3,044) among females and males respectively.

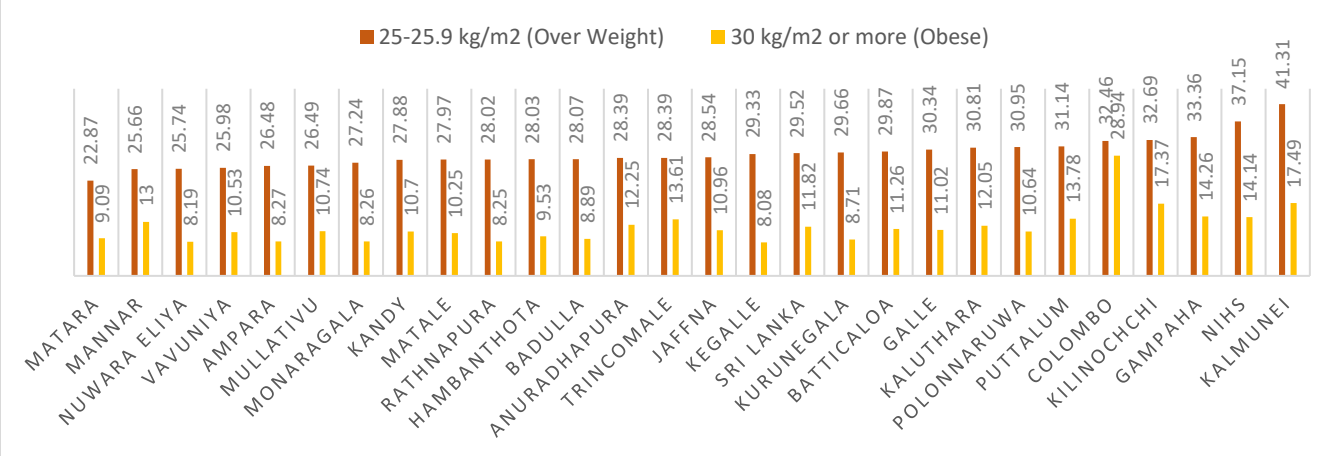

Figure 6: Distribution of percentage of participants with overweight and obesity among the eligible population screened by districts in 1st Quarter of 2022

[3] Current alcohol users and those who had quitted alcohol use within a year of the assessment were considered as alcohol users. Since alcohol usage among females was very low, the percentage of male alcohol users out of the eligible males screened is described to prevent the underestimation of the prevalence of alcohol use where the majority of screened were females

[4] BMI between 25 to 29.9 kg/m2 was considered as overweight

[5] BMI of 30 kg/m2 or above was considered as obese

High Blood pressure[6]

Of the eligible population screened, 32,631 (24.8%) had hypertension. Among the participants screened 26.8% (n=11,940) males and 23.74% (n=20,691) females had high blood pressure among the respective eligible populations screened.

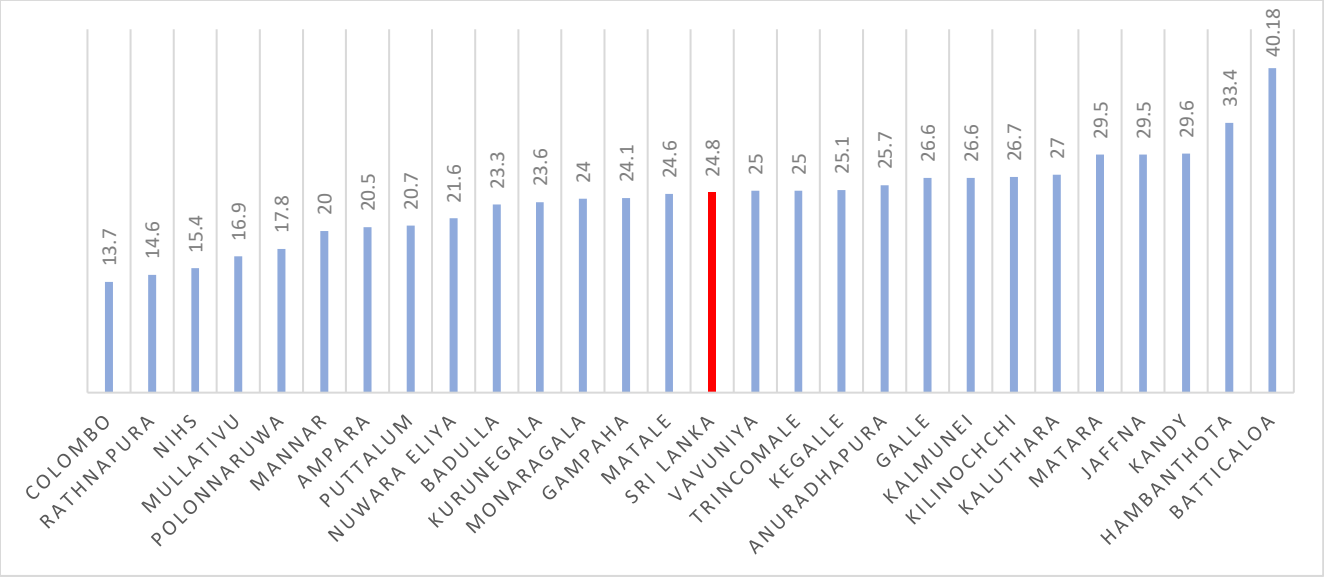

Figure 7: Distribution of percentage of participants with high blood pressure among the eligible population screened by districts in 1st quarter, 2022

High blood sugar[7]

Of the eligible population screened, 12.4% (n=16398) had FBS (Fasting Blood Sugar) or RBS (Random Blood Sugar) values. Among the participants screened, 12.5% (n=10,886) females and 12.35 % (n=5,512) males had high blood sugar values.

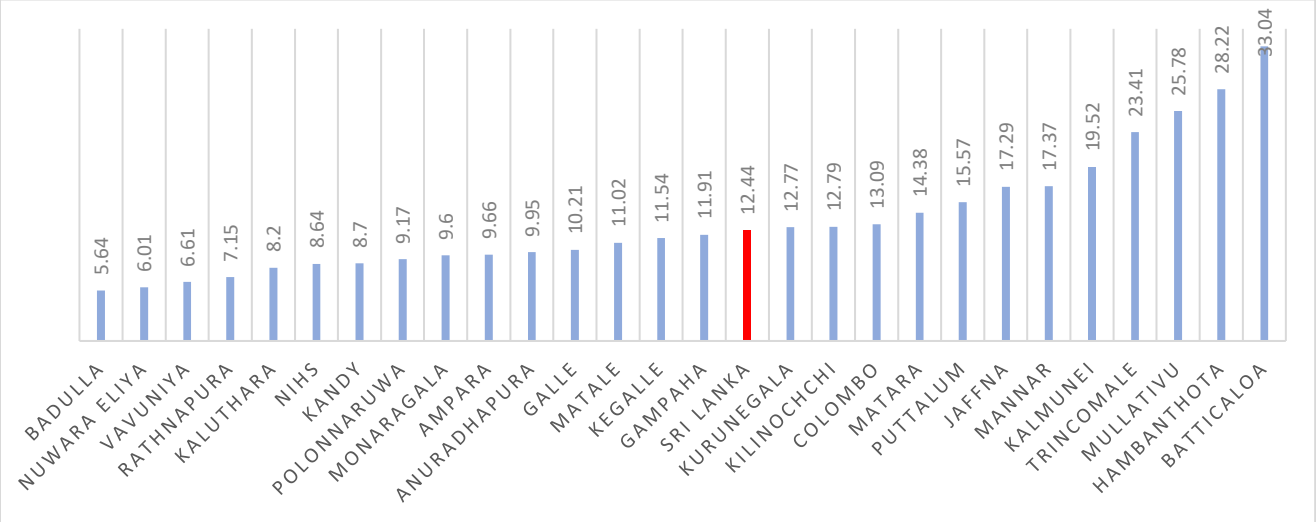

Figure 8: Distribution of percentage of participants with high blood sugar among the eligible population screened by districts in 1st quarter, 2022

[6] Blood pressure of ≥140/90mmHg was considered as high blood pressure

[7] FBS values ≥126 mg/dl or RBS values ≥200 mg/dl were considered as high blood sugar values