



Quarterly NCD Bulletin

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Saving ourselves: Prevention of injuries in the Current Country Context

A healthy population is a wealthy population. Any event adversely affecting health can directly impact on the economy of the country. Injuries are among the highest of the health burden in both global and national settings. Economic burden due to injuries ranges from high cost of health care (including cost for rehabilitation), negative impact on quality of life and value of loss of life to both family and country. Since injuries are the number one cause of morbidity and mortality among the economically productive age group of 15-44 years, the burden on the economy further worsens. Injuries are the leading cause of hospital admissions in Sri Lanka contributing to majority of disabilities. Yearly more than 1.2 million are admitted to government hospitals to seek inward care and an estimated number of 3 – 4 million seek medical care as a result of injuries. Injuries are among the top ten causes of death in Sri Lanka. Due to the current economic crisis in Sri Lanka, the impact of injuries might be more detrimental.

Sri Lanka is facing unprecedented times, with the financial crisis creating new challenges for all of us. Due to shortages of certain items (e.g. fuel, gas, electricity) for many of us, our way of life has changed. With these changes, a shift in our behaviours are also observed to adapt to the current circumstances. From using firewood for meal preparation, to storage of fuel, using bicycles for travelling, using generators and candles during power shortages are some of the many adaptations noticed. However with these adaptations, the likelihood of injuries may increase. Furthermore, in a resource limited setting and rising cost of healthcare for patients, the impact of accidents on the health system as well as the Sri Lankan economy is magnanimous.

During the last few months, an increase in number of injuries mainly burns and transport accidents is observed. In the current country context many have adopted alternate measures and behaviours to overcome the shortages in fuel and electricity.

Furthermore, home gardening is practiced exposing a minority of the population to injuries by poisonous plants and venomous snakes. This could be a result of failure to follow safety measures by the general public as well as the negligence of existing safety measures in daily practice.

The silver lining is that all most of the injuries could be prevented. But lack of knowledge of the harms, not adhering to safety measures, disobeying the relevant legal conditions,

remain as major barriers to prevention of injuries. In addition, though multisectoral cooperation is important for accident prevention, the lack of proper coordination as well as the failure to work together to achieve identified common goals can be challenging for prevention of injuries.

What are the possible adverse consequences of injuries during the prevailing situation in Sri Lanka?

- Syphoning of fuel (diesel/ petrol) can lead to aspiration and cause respiratory illness
- Exposure to fuel (diesel/ petrol) vapors in areas with limited or poor ventilation can lead to neurological problems
- Improper and unsafe storage of fuel (diesel / petrol / kerosene / etc.) increases the risk of fire and explosion if they are exposed to extreme heat
- Improper and unsafe storage of fuel can also cause spillage and can be hazardous
- Improper handling of kerosene / wood burners / cookers and kerosene lamps and candles can lead to serious injuries including burns
- Failure to follow the general guidelines and safety protocols recommended for use when generating electricity from generators and failing to obtain the necessary technical advice from the relevant technicians may increase the risk of explosions and burns.
- Failure to operate emergency alarm systems and road signal systems powered by electricity can lead to an increase in road accidents and rail track accidents.

What can we do?

- Encourage safety practices during day-to-day activities at every setting - home, schools and work settings and also while travelling.
- Always follow safety protocols and guidelines and seek technical advice from experts when necessary
- All types of fuel should be kept away from extreme heat or heat generating sources, in a place that is hard to reach for children and animals. Measures should be taken to avoid spillage.
- Take safety precautions when handling animals (dogs etc.)
- Be alert when engaging in gardening to avoid injuries from venomous plants and animals.
- Always be mindful; Do everything you can to avoid all possible injuries

A little vigilance will save you from many injuries; With a little effort, almost every injury can be prevented!

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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 117,429 participants were screened during the 2nd 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 second quarter of 2022.

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

Year	Eligible participants screened (%)	Percentage of eligible participants screened	Cumulative number of eligible participants screened from the target population ¹
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
2022 Q2	119,438	1.4	4,424,919

¹ This percentage is calculated from the cumulative number of all eligible participants screened from the year 2011 to 2019. Target population of 40 to 65 age group is calculated from the mid-year population as indicated by 2012 Census (5,089,860) up to 2018. From 2019, target population of 35 years and above group is calculated from the total estimated mid-year population for 2019 calculated based on the Census of Population and Housing 2012 (8,721,200). For 2022, target population of 35 years and above group is calculated from the total estimated mid-year population for 2022 calculated based on the Census of Population and Housing 2012 (8,767,600).

Out of the target population, only 1.4 % (119,438) was screened. Mannar, Badulla, Polonnaruwa and Monaragala were the districts with highest coverage.

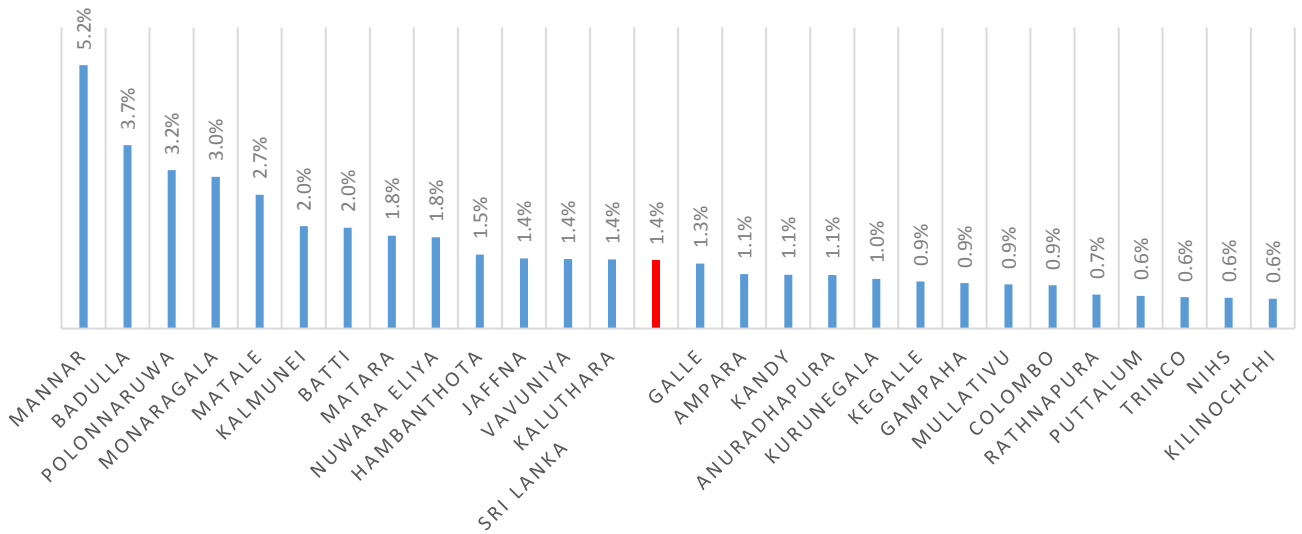


Figure 1: Distribution of percentage of eligible participants screened by district during 2nd quarter, 2022.

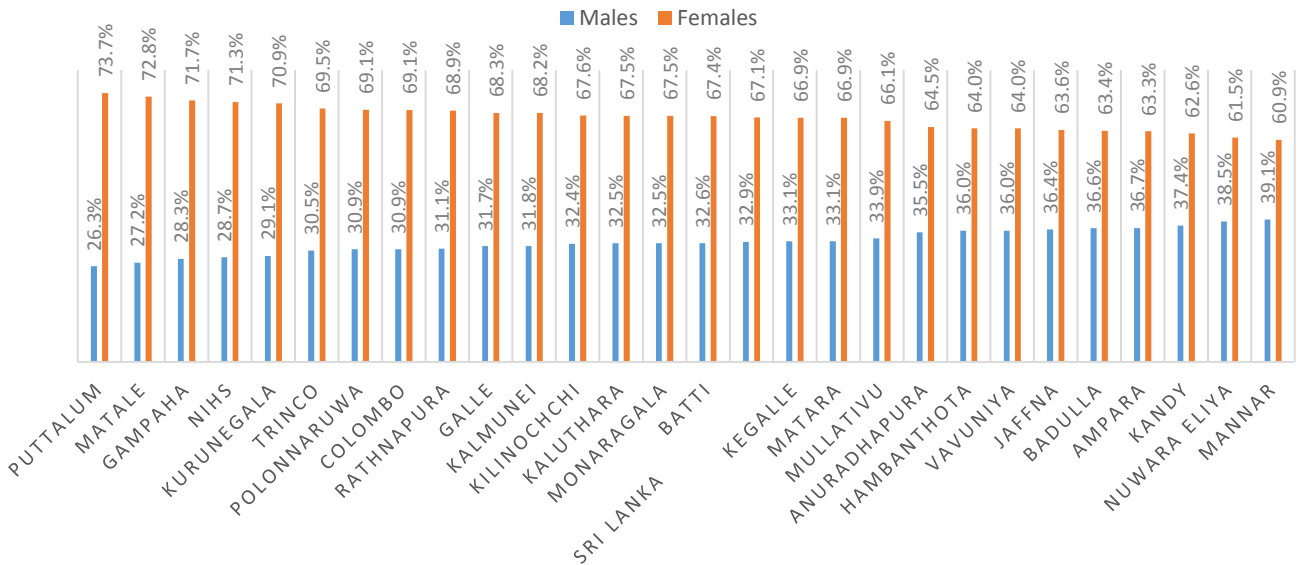


Figure 2: Distribution of percentage of eligible males and female participants screened by districts during 2nd quarter of 2022

Mannar had the highest screening coverage among eligible males while Puttalam had the highest among eligible females.

Screening for risk factors

Tobacco Smoking²

Out of the total eligible male population screened, 10,408 (24.4 %) were tobacco smokers. Among the eligible female population screened 324 (0.4%) were tobacco smokers.

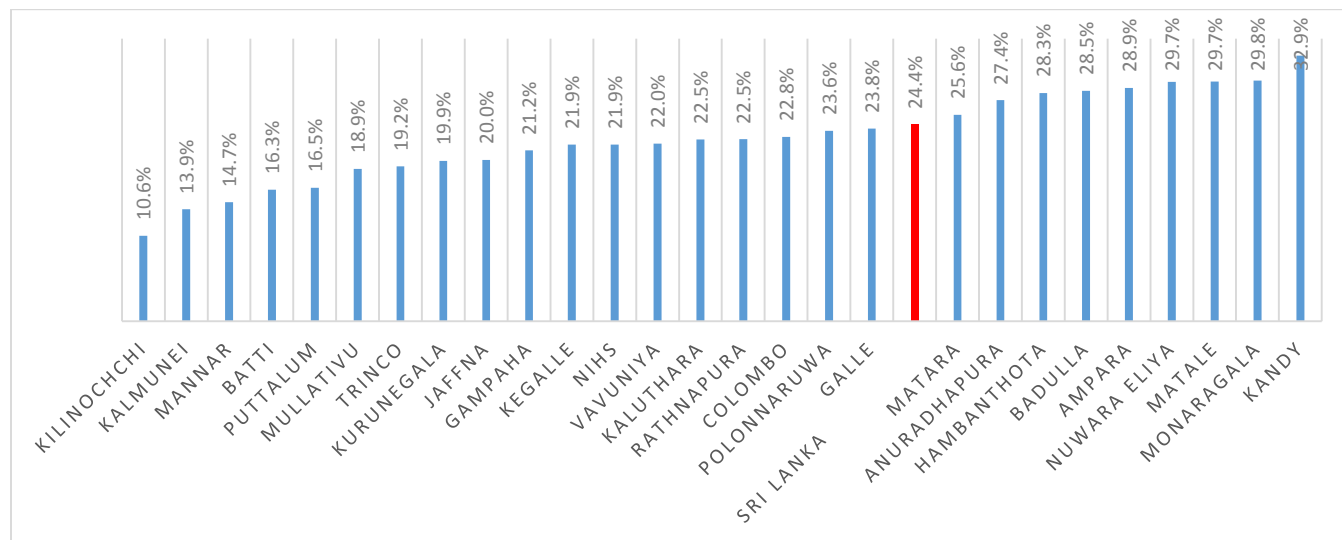


Figure 3: Distribution of percentage of male tobacco smokers among the total eligible male population screened by the district in 2nd quarter 2022

Chewing betel (with tobacco or arecanut)³

Among the eligible population screened, 23,547 (18.1%) chewed betel (with or without tobacco). Out of the total eligible male population screened, 14,202 (33.2%) and among the eligible female population screened, 9,345 (10.7%) chewed betel.

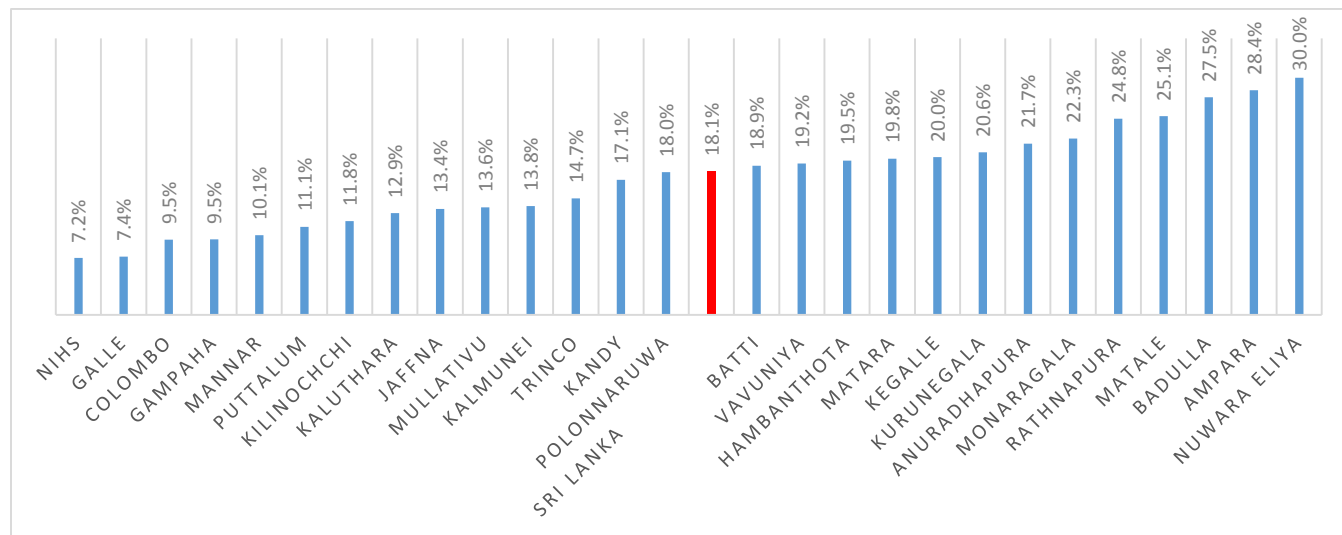


Figure 4: Distribution of percentage of participants chewing betel with tobacco or arecanut among the eligible population in screened-in 2nd quarter, 2022

²Current smokers or those who quit smoking less than a year before the assessment. 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

³Current betel chewers or those who quit betel chewing (with tobacco or arecanut) less than a year before the assessment

Alcohol use⁴

Out of the eligible male population screened, 17,398 (40.7%) were alcohol users. There were 156 (0.2%) female alcohol users among the respective female eligible populations screened.

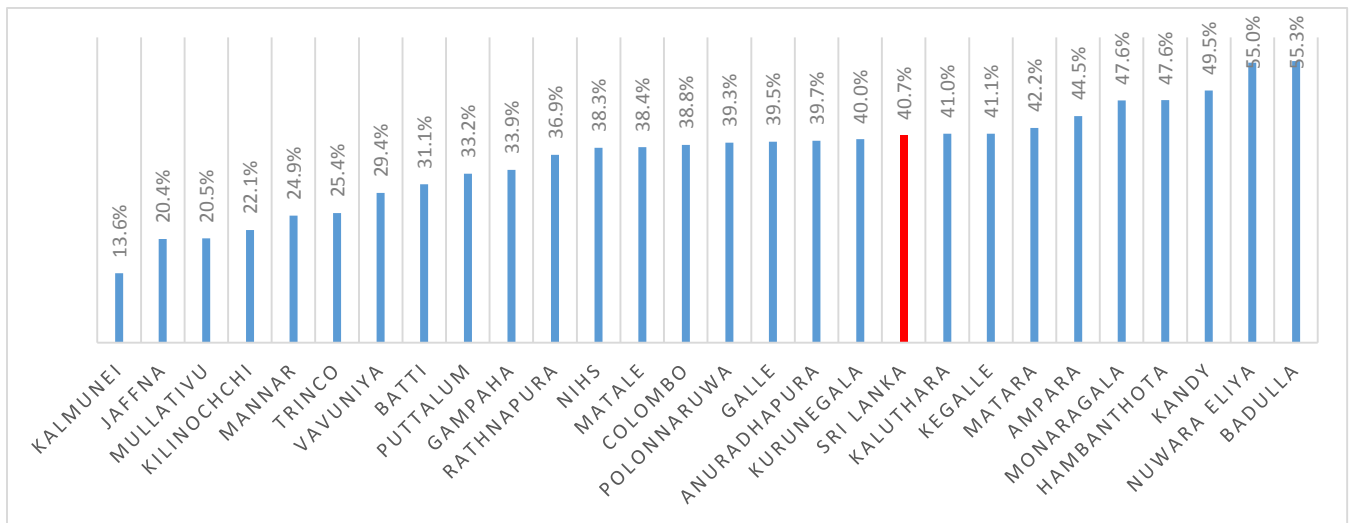


Figure 5: Distribution of percentage of male alcohol users among the eligible males screened by the districts in 2nd quarter, 2022

Overweight and obesity

Out of the eligible population screened, 36,416 (28.5%) and 12,708 (9.9%) were found to be overweight and obese respectively. Prevalence of overweight and obesity was 26,524 (31.1%) and 10,351 (12.1%) respectively among female population screened. Prevalence of overweight and obesity was 9,892 (23.3%) and 2,357 (5.6%) respectively among male population screened.

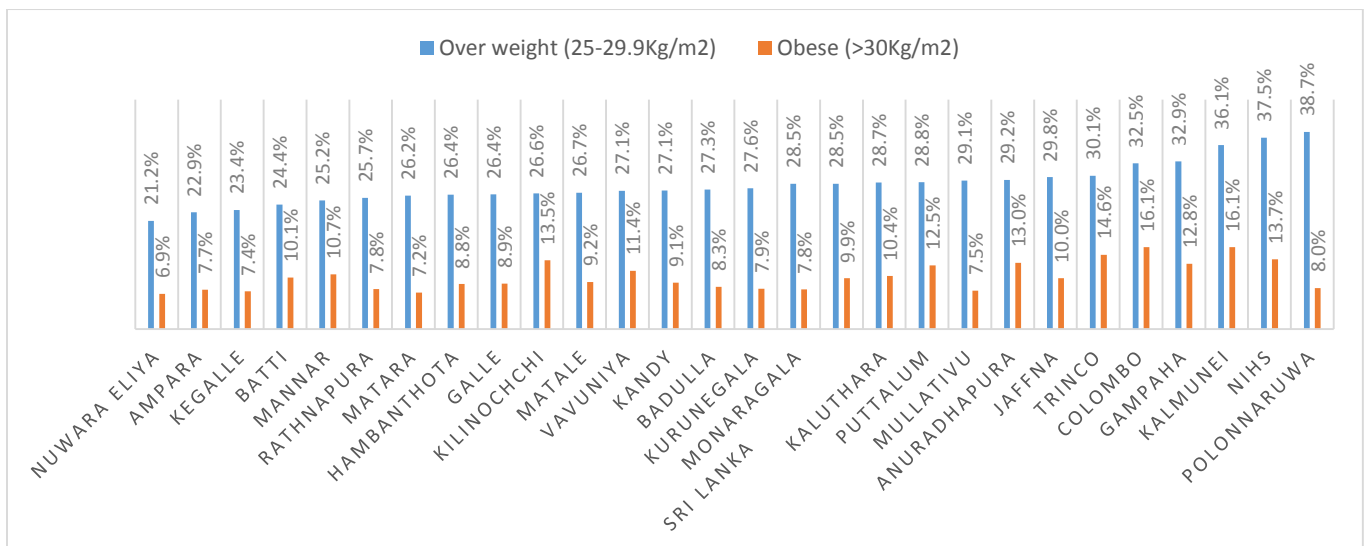


Figure 6: Distribution of percentage of participants with overweight and obesity among the eligible population screened by districts in 2nd quarter of 2022

⁴Current 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

High Blood pressure⁵

Of the eligible population screened, 28,498 (22.4%) had high blood pressure. Among the male participants screened, 10,100 (24.2%) and among the female participants screened, 18,398 (21.6%) had high blood pressure.

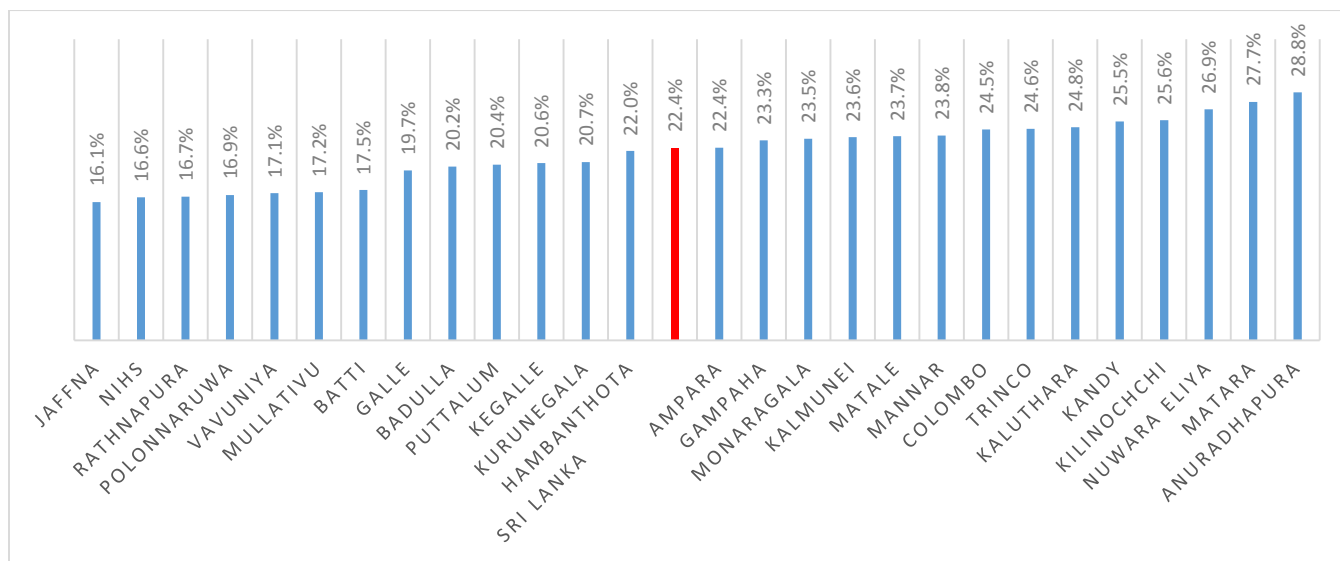


Figure 7: Distribution of percentage of participants with high blood pressure among the eligible population screened by districts in 2nd quarter, 2022

High blood sugar⁶

Of the eligible population screened, 12,915 (10.8%) had Fasting Blood Sugar (FBS) or Random Blood Sugar (RBS) values. Among the female participants screened, 8,370 (10.4%) and among the male participants screened, 4,545 (11.5%) had high blood sugar values.

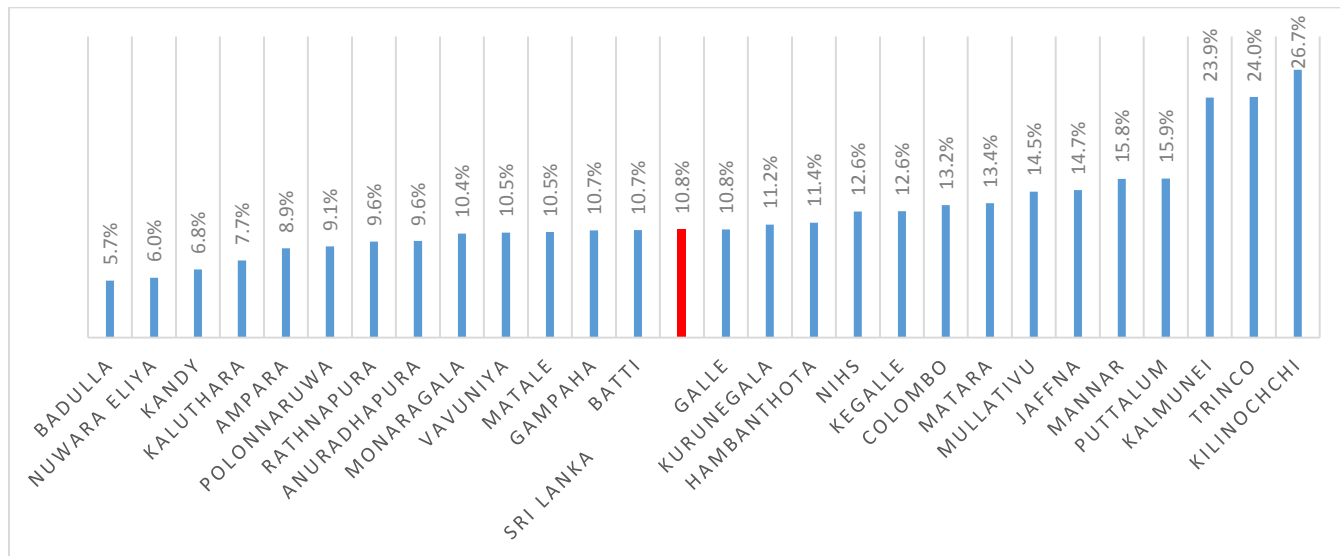


Figure 8: Distribution of percentage of participants with high blood sugar among the eligible population screened by districts in 2nd quarter, 2022

⁵Blood pressure of $\geq 140/90$ mmHg was considered as high blood pressure

⁶FBS values ≥ 126 mg/dl or RBS values ≥ 200 mg/dl were considered as high blood sugar values

High total cholesterol⁷

Of the eligible population screened, 15,580 (13.6%) had high total cholesterol values. Among the female participants screened, 11,128 (14.5%) and among the male participants screened 4,452 (11.7%) had high total cholesterol values.

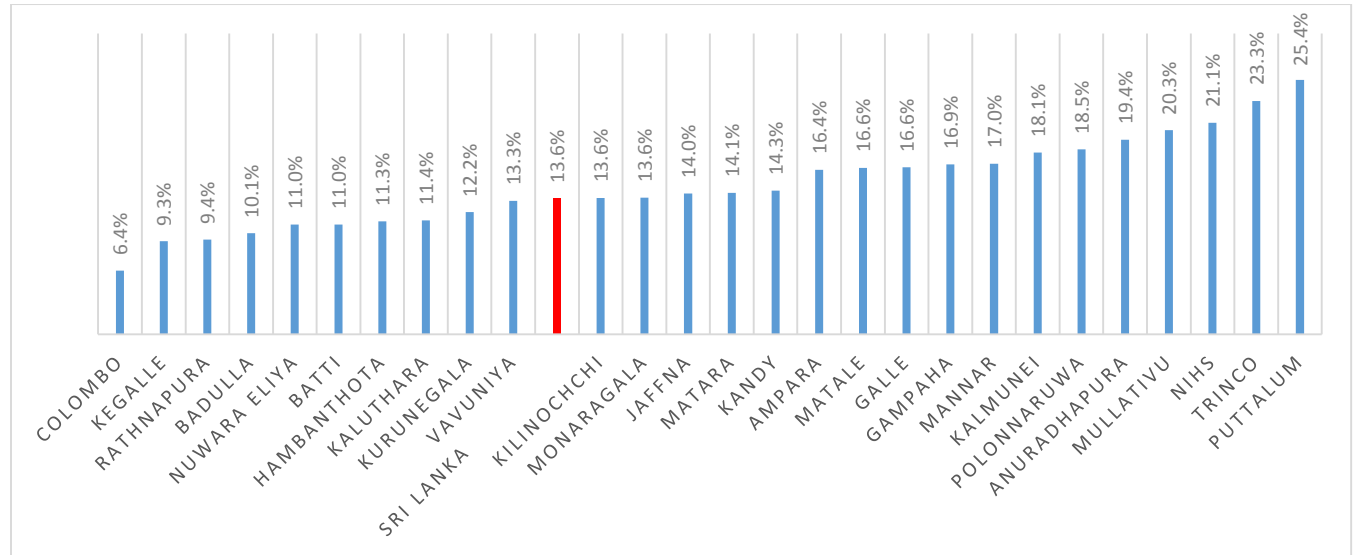


Figure 9: Distribution of percentage of participants with high total cholesterol among the eligible population screened by districts in 2nd quarter, 2022

Risk of cardiovascular disease ≥20%

The 10-year cardiovascular risk is estimated using WHO Cardiovascular Risk Chart. Cardiovascular Risk is categorized as <10%, 10% to <20%, and ≥20%. During Q2 in 2022, among the eligible participants screened, 2,090 (2.0%) were found with cardiovascular risk ≥20%. Among the male participants screened, 847 (2.4%) and among the female participants screened 1,243 (1.8%) had cardiovascular risk ≥20%.

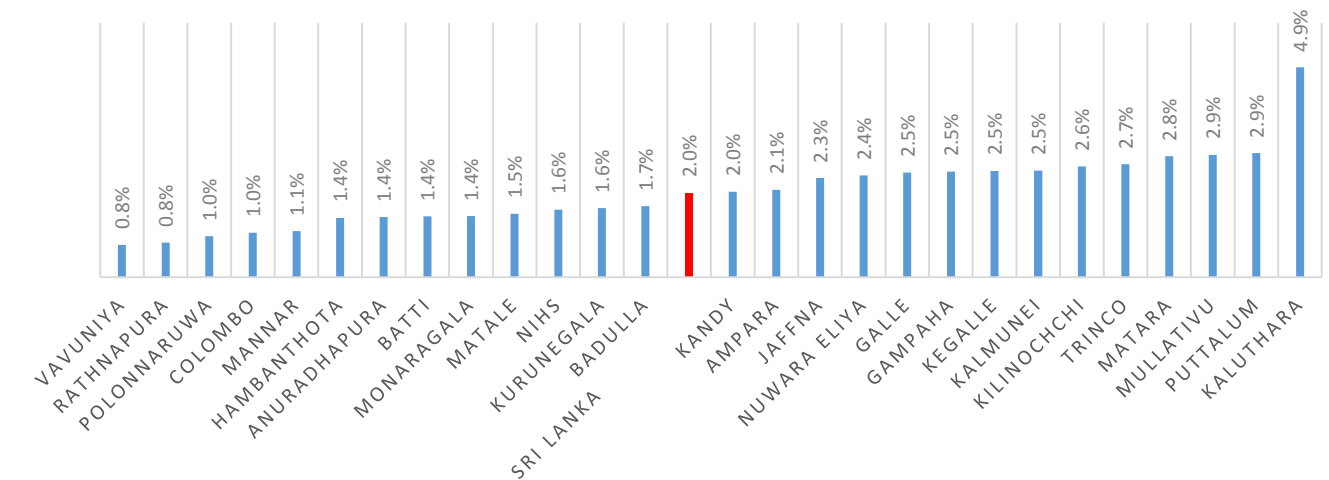


Figure 10: Distribution of percentage of participants with cardiovascular risk ≥20% among the population screened by districts in 2nd quarter, 2022

⁷Total cholesterol values ≥ 240/dl was considered as high total cholesterol value

Physical Inactivity⁸

Of the eligible population screened, 35,820 (28.1%) were physically inactive. Out of the male population screened, 24.7% (n=10,518) and out of the female population screened, 29.8% (n=25,302) were physically inactive.

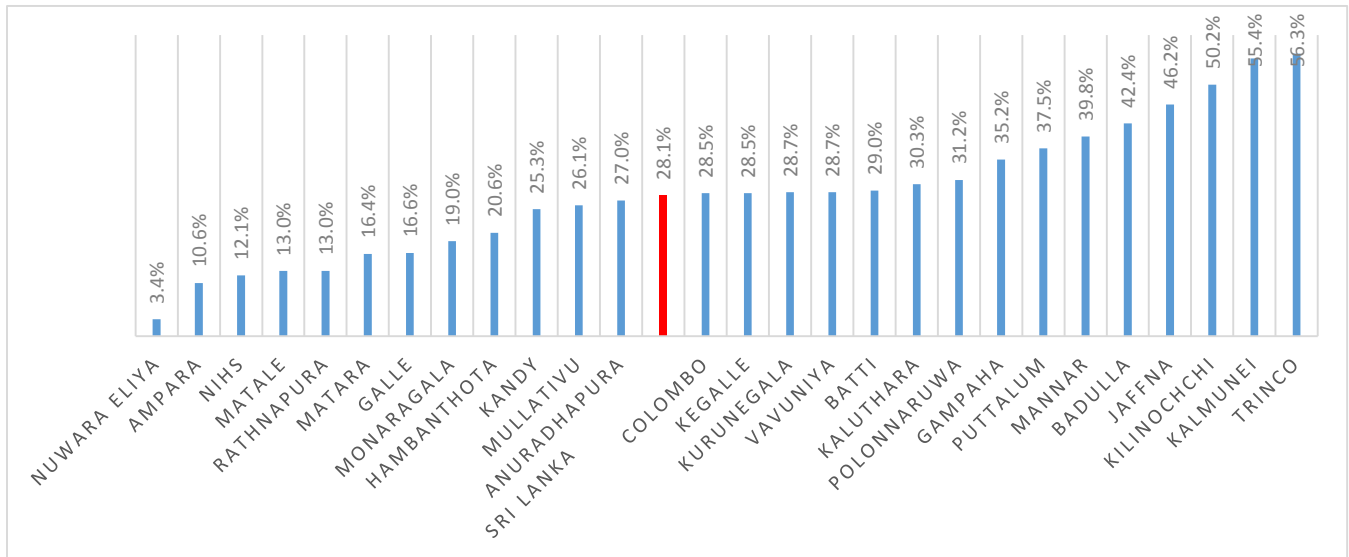


Figure 11: Distribution of percentage of participants with physical inactivity among the population screened by districts in 2nd quarter, 2022

⁸Not involved in moderate or vigorous intensity activity throughout the week

This supplementary document provides information for the second quarter of 2022, entered in the NISS

- Males continue to be mostly affected.
- The age group of 21-30 years were mostly affected and required treatment both as outpatients and inpatients; however, the majority of deaths were among the 41-50 year category.
- Unintentional injuries were the most common; Intentional injuries and deliberate self-harm accounted for 10.9% and 19.9% of deaths reported.
- Injuries commonly occurred during the 6am to 6 pm.
- Majority of those treated as outpatients were due to animal bites (67.1%); out of all inpatients, falls were the commonest mechanism of injury (26.4.5%).
- Deaths were mainly due to transport injuries (32.6%)
- Leading place of occurrence of injury was home
- Most of the victims had superficial injuries and limbs were the mostly affected body region

The summary of the total number reported in different components of the National Injury Surveillance System (NISS) during the second quarter, 2022 is presented in Table 2.

Table 2: Summary of the total number reported in different components of the National Injury Surveillance System (NISS) during the second quarter, 2022

Surveillance component	Total number reported
Outpatient (OP)	25967
Inpatient (IP)	41865
Death notification (DN)	929

Figure 12 shows the sex distribution of injury victims reported in different components of NISS. More males were affected than females. Males were highest among all deaths (3/4th of all reported deaths). Overall, more than 2/3rd of the victims were males.

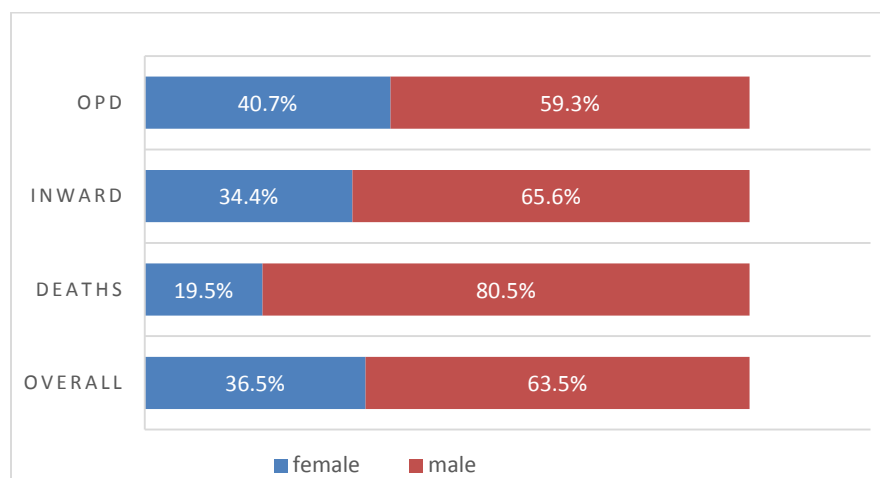


Figure 12: Sex distribution of injury victims.

Highest number of victims were reported among the age group of 21 – 30 years in both outpatient and inpatient surveillances (Figure 13). However, the highest number of deaths were reported among the 41 – 50 years age group. Death rates were relatively high among older age groups.

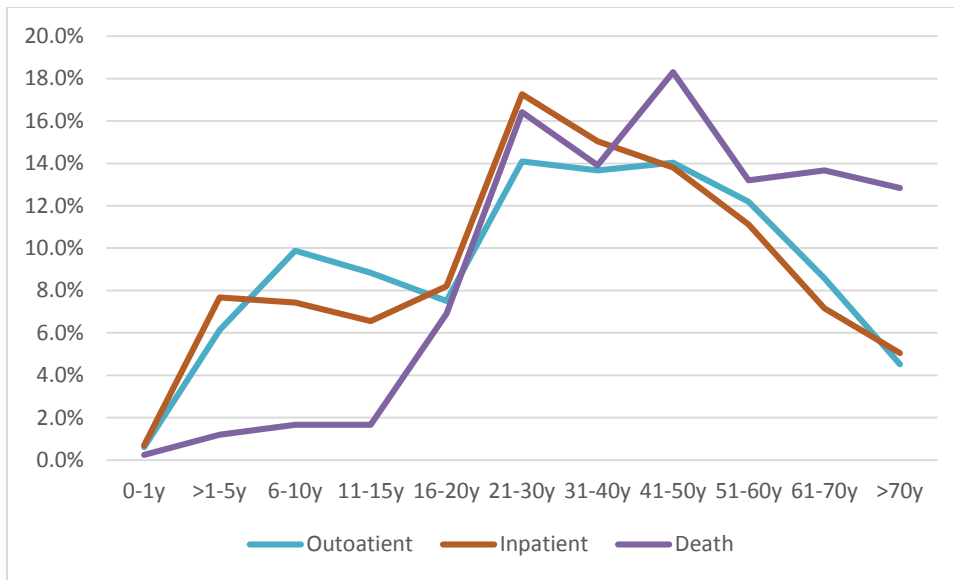


Figure 13: Age distribution of the injury victims

Although 98.6% and 84.5% of unintentional injuries were reported in outpatient and inpatient surveillances respectively, it was about 69.2% among notified deaths (Figure 14).

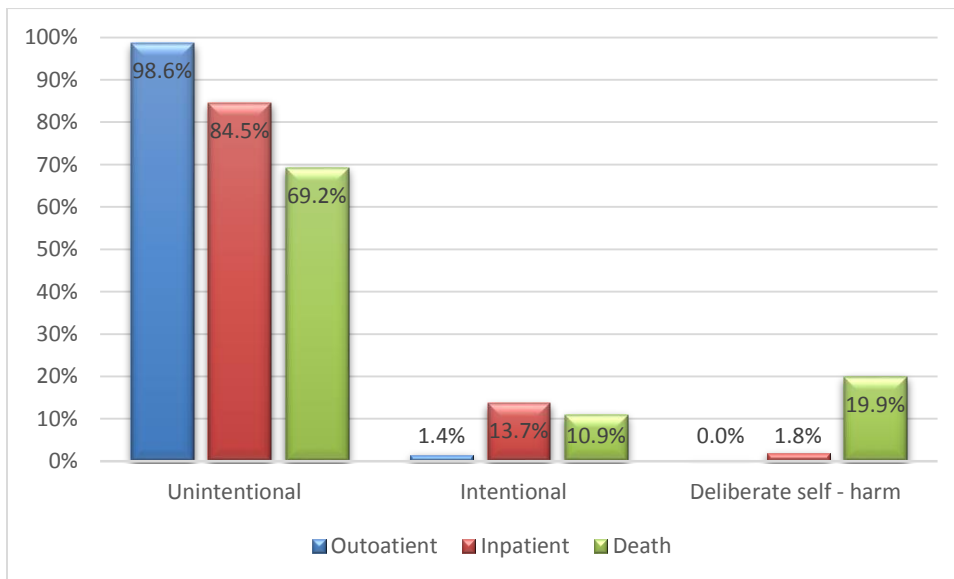


Figure 14: Intention of the injury

Outpatient surveillance

More than 80% of injuries occurred from 6.00 am to 6.00 pm

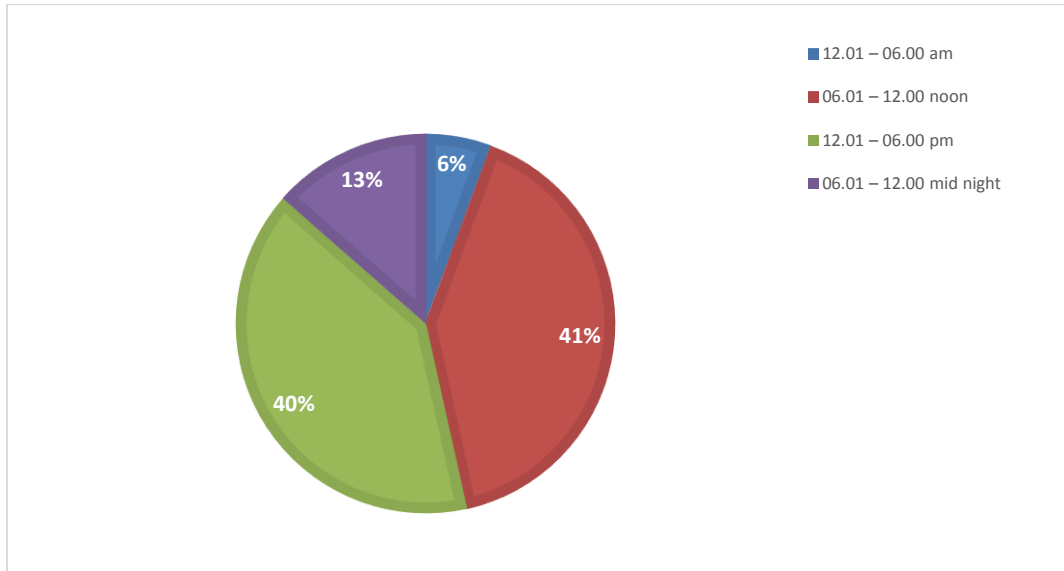


Figure 15: Time of injury

Most injuries were due to Animal bites (67.1% from total reported) (Figure 16).

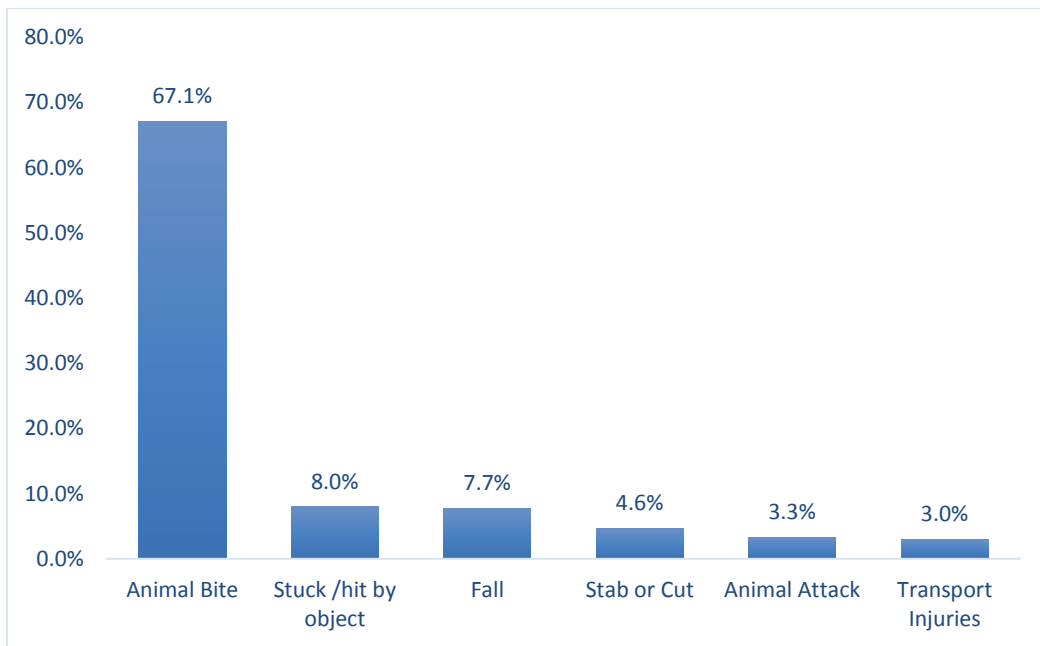


Figure 16: Leading mechanisms of injury

The leading place of occurrence of injuries was home (66.1%) followed by street/road/highway (15.6%) as in Figure 17.

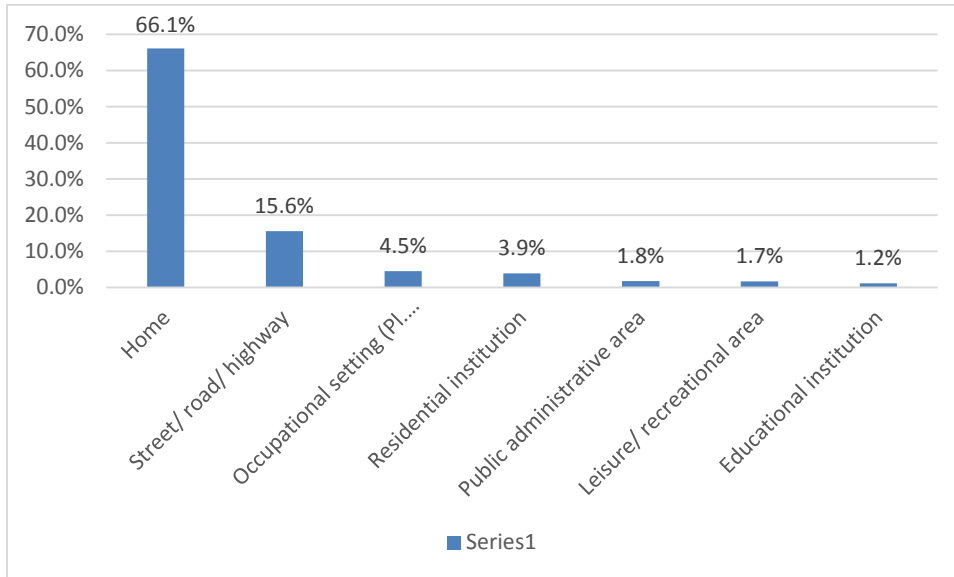


Figure 17: Leading places of occurrence of injuries

Majority of injuries occurred while engaging in leisure activity (34.8%) followed by travelling (16.4%). Only 9.4% were injured while working for income (Figure 18).

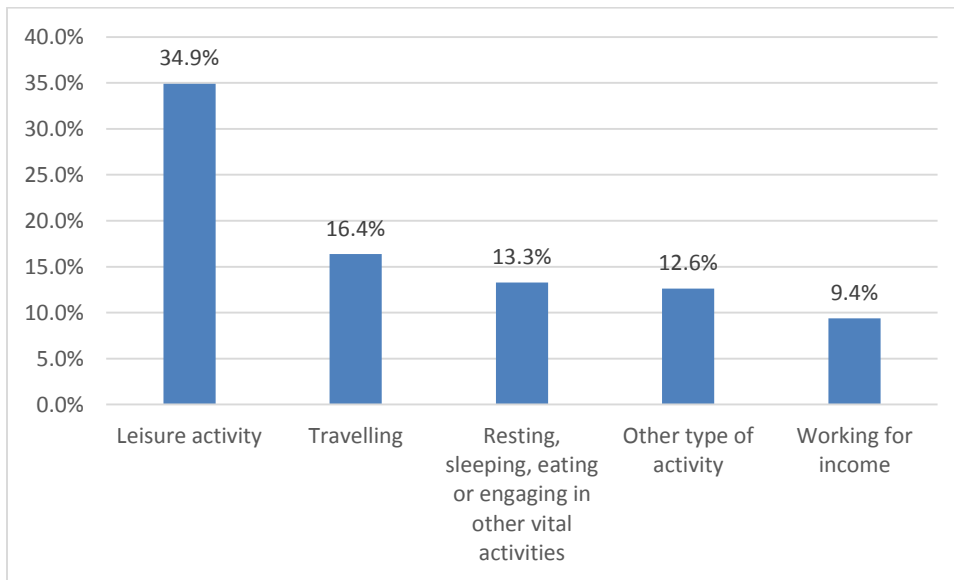


Figure 18: Leading activities done at the time of injury.

As depicted below (Figure 19) more than half of the injuries were reported in the lower limb region of the body (57.1%).

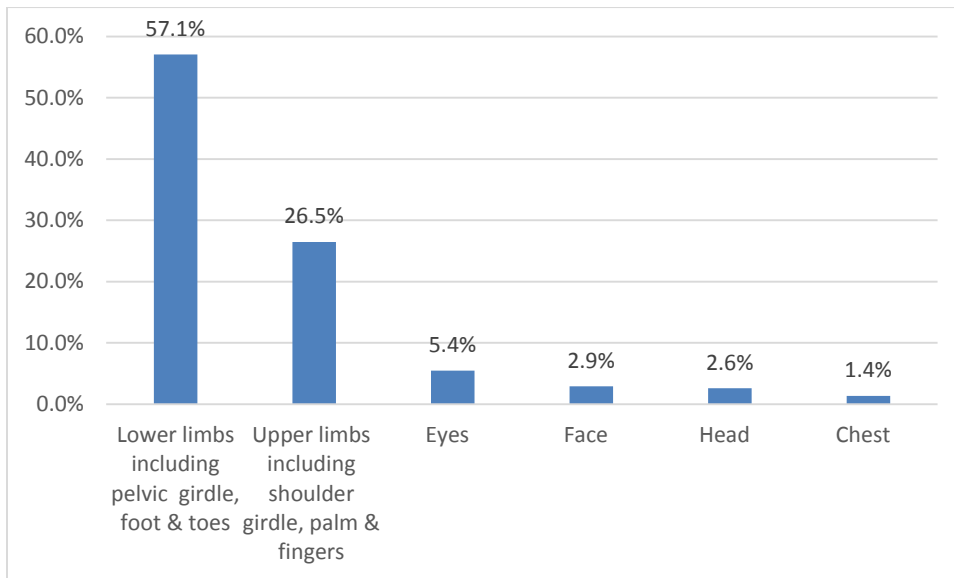


Figure 19: The affected region of the body due to injuries

Most of the victims had superficial injuries (85.2%), while fractures accounted for 0.6% of all injuries (Figure 20).

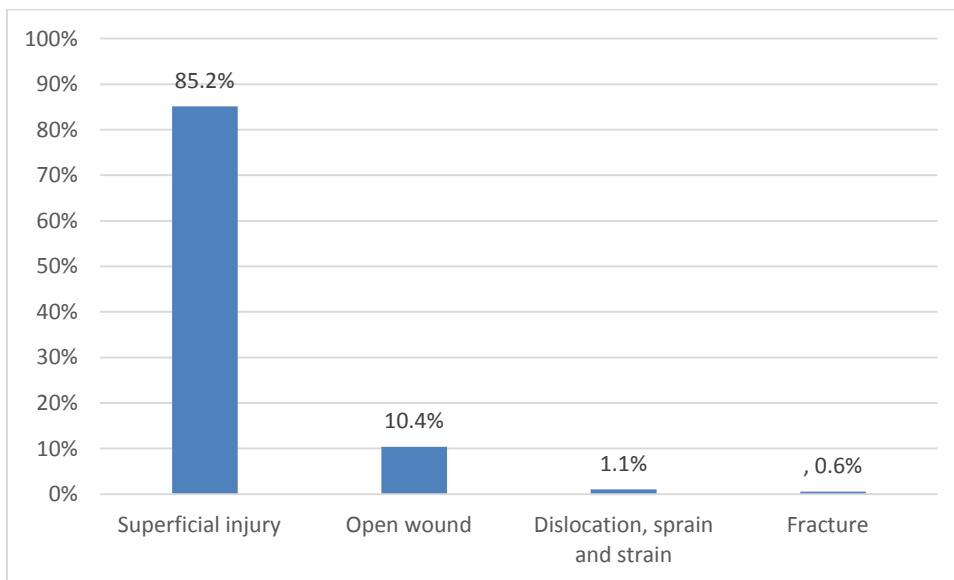


Figure 20: Nature of the injury

Evidence of neither alcohol (98.7%) nor substance use (98.7%) were noted among majority of reported injuries (Table 3).

Table 3: Evidence of Alcohol use and Substance use

Evidence of	Yes	No	Unknown
Alcohol use	0.5%	98.7%	0.8%
Substance use	0.3%	98.7%	1.0%

Nearly all the victims (99.5%) had no disability at the time of discharge (Figure 21).

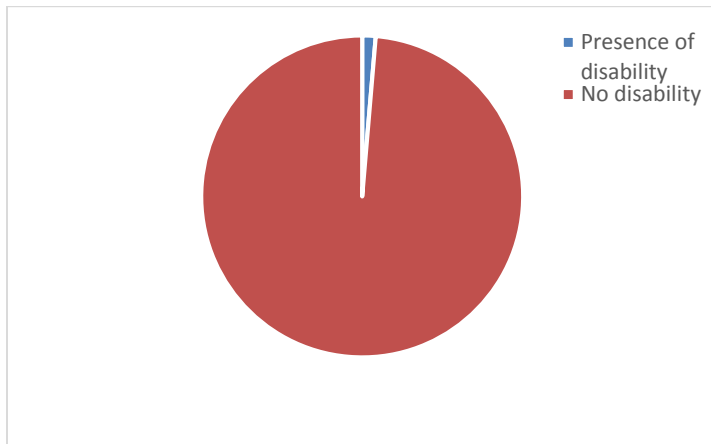


Figure 21: Evidence of disability at the time of discharge

Inpatient surveillance

Of all injuries admitted for inpatient care, 75% occurred from 6.00 am to 6.00 pm. Nearly 1/5th of injuries occurred from 6.00 pm to 12 midnight (21%) (Figure 22).

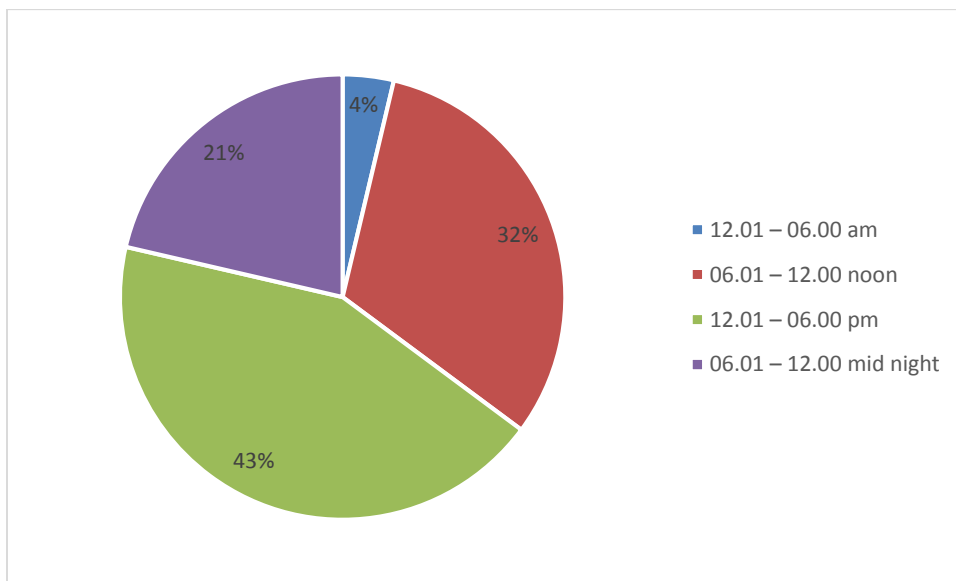


Figure 22: Time of injury

The leading mechanism of injury was falls (26.4%), followed by transport injuries (17.7%). Admissions following animal bites was only 1.8% (Figure 23)

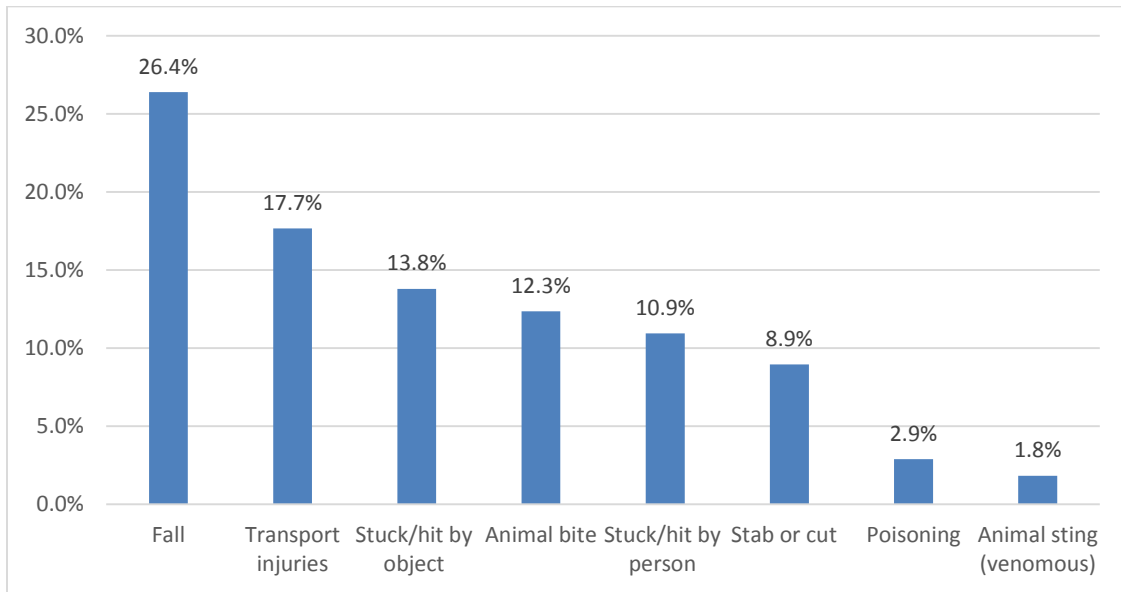


Figure 23: Leading mechanisms of injury

Leading place of occurrence of injuries was home (54.2%) followed by street/road/highway (24.0%).

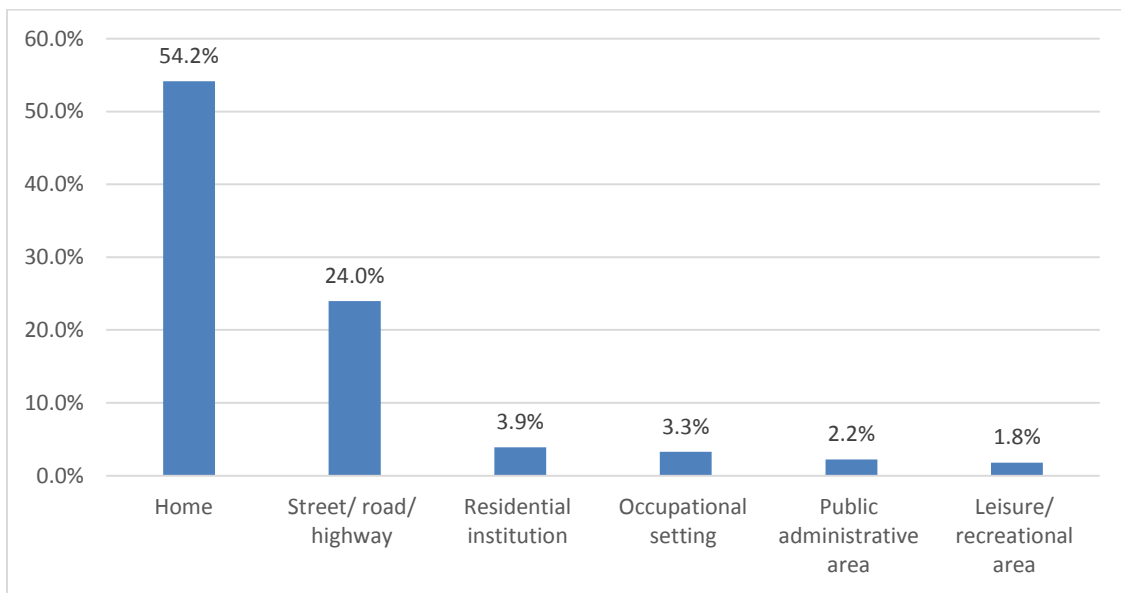


Figure 24: Leading places of occurrence of injury

More than 1/4th of injuries occurred while engaged in leisure activities (25.9%). Nearly 1/4th had taken place while travelling (24.1%). While working for income 9.8% have gotten injured (Figure 25).

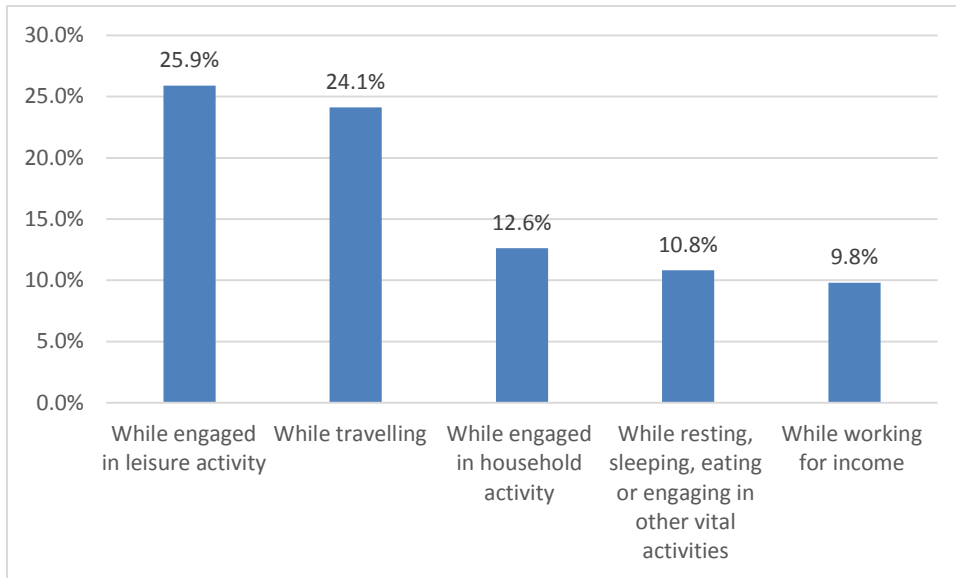


Figure 25: Leading activities done at the time of injury.

Of all victims, upper and lower limb injuries were observed in 53.7% of victims. Head injuries were noted among 17.8% (Figure 26).

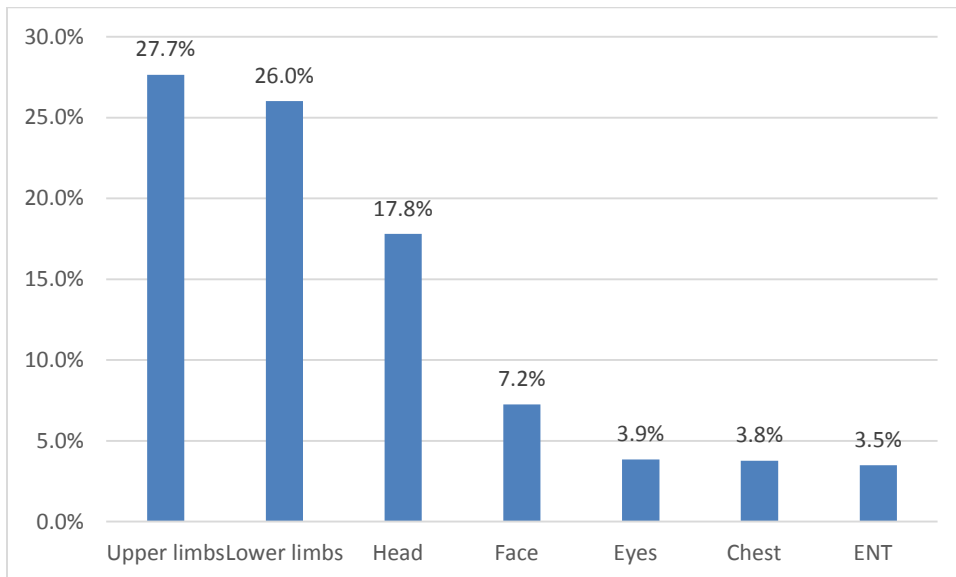


Figure 26: Body region affected

Most of the victims had superficial injuries (58.2%). Approximately 1/4th of the victims (21.2%) had had open wounds while 8.8% had fractures (Figure 27).

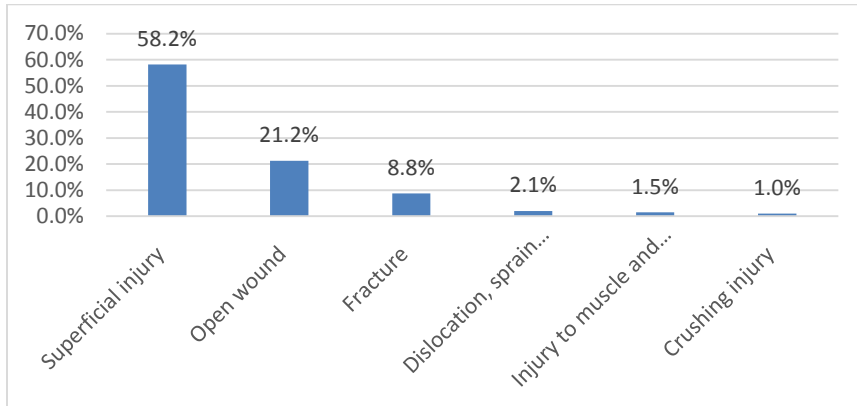


Figure 27: Nature of the injury

Most had no evidence of either alcohol use (88.9%) or substance use (90.4%). Nearly 95% had no disability at the time of discharge.

Table 4: Evidence of Alcohol use, Substance use and Disability at the time of discharge

Evidence of	Yes	No	Unknown
Alcohol use	4.0%	88.4%	7.6%
Substance use	1.3%	89.8%	8.9%
Disability at the time of discharge	5.1%	94.9%	

Death surveillance (Notification)

The leading mechanism of injury related death was due to transport injuries (32.6%) followed by threats to breathing (16.1%), drowning (10.5%) and falls (8.8%). Poison related deaths accounted for 6.9% of all deaths related to injuries.

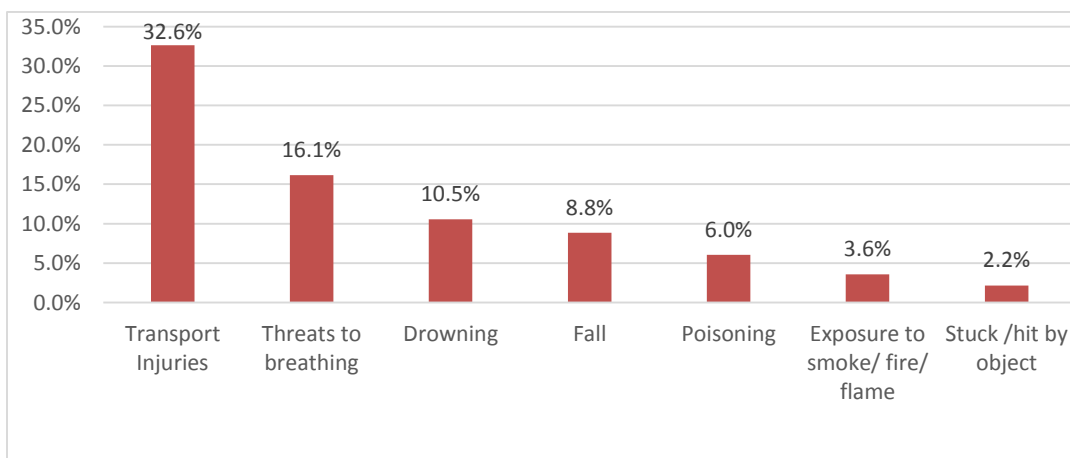


Figure 28: Leading mechanisms of injury related death