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FIVE-YEARS TRENDS IN INJURY HOSPITALISATION IN KAKHETI REGION, GEORGIA

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თათია გრატიაშვილი, ნინო ჩიხლაძე, ქეთევან ახობაძე, ნატო ფიცხელაური

ტრავმული დაზიანების ჰოსპიტალიზაციის 5 წლიანი ტენდენცია კახეთის რეგიონში (საქართველო)

ივანე ჯავახიშვილის სახელობის თბილისის სახელმწიფო უნივერსიტეტი,
მედიცინის ფაკულტეტი, თბილისი საქართველო

რეზიუმე

ტრავმული დაზიანება სიკვდილიანობის ერთ-ერთი მთავარი მიზეზია მსოფლიო მასშტაბით. ტრავმული დაზიანება ხშირად იწვევს დროებით ან მუდმივ უნარშეზღუდულობას, რაც საჭიროებს როგორც ფიზიკურ, ისე ფსიქიკურ ჯანმრთელობაზე ზრუნვას და რეაბილიტაციას. კვლევის მიზანია კახეთის რეგიონში ტრავმული დაზიანების ეპიდემიოლოგიური თავისებურებების და ხუთ წლიანი ტენდენციების (2018-2022) შესწავლა. აღსანიშნავია, რომ არ არსებობს კვლევები ამ სფეროში. კვლევისთვის გამოყენებული იქნა რეტროსპექტული აღწერილობითი მეთოდი, რომელმაც მოიცვა პერიოდი 2018 წლიდან 2022 წლის ჩათვლით. კვლევისთვის გამოყენებული იქნა დაავადებათა კონტროლის ეროვნული ცენტრის ჰოსპიტალიზაციის ბაზა. კვლევის პერიოდში ჰოსპიტალიზებული იქნა 7,861 პაციენტი. მამაკაცები შეადგენდნენ პაციენტების 59.8%-ს (4700), ხოლო ქალები 40.2%-ს (3161). პაციენტების ასაკი მერყეობდა 0-დან 104 წლამდე, საშუალო ასაკით 46 წელი. ყველაზე ხშირი ასაკობრივი ჯგუფებია 65 წლის და უფროსი ასაკის, რაც წარმოადგენს შემთხვევების 29.5%-ს (2317) და 25-44 წლის ასაკობრივი ჯგუფი (22.9%; n=1801). დაზიანების ყველაზე გავრცელებული მექანიზმებია ვარდნა (50.9%; n=4001) და საგზაო შემთხვევები (23.8%; n=1869). ყველაზე ხშირად დაზიანებული მიდამოა თავი (34%; n=2674). საავადმყოფოში ყოფნის საშუალო ხანგრძლივობამ შეადგინა ოთხი დღე.

ჩატარებული კვლევა გვაწვდის მნიშვნელოვან ინფორმაციას კახეთის რეგიონში (საქართველო) ტრავმული დაზიანებებით ჰოსპიტალიზაციის ეპიდემიოლოგიური მახასიათებლებისა და 2018-2022 წლების ტენდენციის შესახებ. მიგნებები ხელს შეუწყობს საზოგადოებრივი ჯანმრთელობის კუთხით გადაწყვეტილებების მიღებას და მიზნობრივი პროგრამების შექმნას ტრავმული დაზიანებების პრევენციისთვის კახეთის რეგიონში.

Introduction. Injuries rank as one of the leading causes of death and long-term impairment globally. They frequently result in temporary or permanent disability, necessitating extended physical and mental health care as well as rehabilitation. Injuries and violence are major contributors to death and disease worldwide, placing significant financial and quality-of-life burdens on individuals and communities. Scientific evidence shows that injuries and violence are predictable and preventable, with proven strategies for prevention and treatment. These incidents are not accidents but can be effectively addressed through well-founded prevention efforts [1,2].

Injuries remain a significant public health concern in Georgia [3-5]. According to the National Center for Disease Control and Public Health of Georgia (NCDC), in 2022, there were 29200 cases of injuries, poisonings, and other consequences of external causes, with an incidence rate of 791.6 per 100,000 inhabitants. This included 4900 children under the age of 15, accounting for 16.7% of the total cases. In the same year, there were 51.6 deaths per 100,000 inhabitants due to injuries, poisoning, and other effects of external sources, accounting for 1917 deaths [6]. Kakheti region, situated in the far eastern reaches of Georgia, boasts the largest expanse among the country's regions, with a population of approximately

306,200 inhabitants. The primary aim of this research is to investigate and characterize the epidemiological features of injuries in the Kakheti region. Given the fact that there are no previous studies in this area, the primary objective of this research is to analyze the types, causes, and consequences of injuries within the region.

Methods. This research was a retrospective, descriptive study covered the period from January 1, 2018, to December 31, 2022. The primary database for this research was obtained from the National Center for Disease Control and Public Health in Georgia (NCDC). Statistical analyses were performed using SPSS software version 23.0.

Results. Over the five-year study period, a total of 7,861 hospitalization cases related to injury were identified. Males made up 59.8% (4,700) of all patients, while females accounted for 40.2% (3,161), resulting in a male-to-female ratio of 1.4:1. Patients' ages ranged from 0 to 104 years, with a median and mean age of 46 years. The most frequent age group was 65 and older, constituting 29.5% (2,317 patients) of the cases. This was followed by the 25-44 age group, which made up 22.9% (1,801 patients), and the 45-64 age group, comprising 22.4% (1,757 patients). Most of the injury cases occurred in summer and spring, accounting for 26.8% (2,108 cases) and 26.2% (2,056 cases) of the total cases, respectively. The most common mechanism of injury across all age groups was falls, accounting for 50.9% of cases (4,001 cases). Falls were the predominant mechanism of injury for both genders, comprising 47% of injury cases in males and 57% in females.

After falls, the second leading mechanism of injury was road traffic injuries (RTIs), which accounted for 23.8% (1,869 cases) of all injuries. RTIs were the second most common cause of injury for both genders, comprising 25% (1,173 cases) in males and 22% (696 cases) in females. Across all age groups, RTIs were consistently the second leading cause of injury, with particularly high proportions in the 16-24 age group (35%, or 268 cases) and the 25-44 age group (30%, or 541 cases). The highest rate of transport-related injuries was observed in the 25-44 age group, accounting for 28.9% (541 cases) of all transport accident injuries, followed by the 45-64 age group at 22.3% (417 cases) and the 65+ age group at 22.2% (414 cases).

Overall, the third most frequent mechanism of injury was exposure to mechanical forces, accounting for 11% (861 cases) of all injuries. The analysis of injured body regions revealed that the most commonly affected areas were the head, lower extremities, and upper extremities, accounting for 34% (n=2674), 27% (n=2144), and 17% (n=1307) of cases, respectively. The distribution of these injuries varied significantly between genders. In males, the head was the most frequently injured region, comprising 38% (n=1799) of cases. This was followed by injuries to the lower extremities at 18% (n=860) and the upper extremities at 17% (n=812). Conversely, in females, the lower extremities were the most commonly injured body region, accounting for 41% (n=1284) of cases. This was followed by injuries to the head at 28% (n=875) and the upper extremities at 16% (n=495). Injuries involving multiple body regions were observed in 9% of all cases. The primary mechanism for these multiple injuries was transport accidents, accounting for 50.5% (n=366) of such cases, followed by falls at 32.7% (n=237) and exposure to mechanical forces at 9.8% (n=71). Males were predominantly affected by multiple injuries, constituting 74.5% (n=540) of these cases. The age group most frequently experiencing multiple injuries was the 25-44 years group, comprising 32.7% (n=237) of such cases. The duration of hospital stays ranged from 1 to 66 days. In our study, the average length of hospital stay was four days, with the most common length of stay being one day.

Among the patients hospitalized due to injuries, 74% (n=5,817) completed their treatment and recovered. Additionally, 18% (n=1,446) were referred to another medical facility, 6% (n=485)

discontinued treatment, and 1% (n=113) of the patients died. The leading cause of fatal injuries was transport accidents, which accounted for 48% (n=54) of the deaths. This was followed by falls, responsible for 26% (n=29), and exposure to mechanical forces, which constituted 12% (n=14).

From the five years of data collected, the distribution of cases per year was as follows: In 2018, 16% (n=1,237) of the total cases were reported. In 2019, 22% (n=1,713) of the cases occurred, followed by 22% (n=1,707) in 2020. In 2021, 18% (n=1,455) of the cases were reported, and in 2022, the percentage remained at 22%. The proportion of injured patients in the 0-15 years age group decreased from 2018 to 2022, with a 16% reduction in the number of injured patients. In contrast, the 45-64 years age group saw a 74% increase in injury cases and an increase in their proportion among all age groups. The 25-44 and 65+ age groups both experienced a 53% increase in injury cases from 2018 to 2022. The average age of injured patients has risen from 43.7 years in 2018 to 48 years in 2022. The proportion of injuries due to transport accidents among all injury mechanisms significantly increased from 16% in 2018 to 25% in 2022, with a 130% rise in the number of such cases. Conversely, injuries caused by exposure to mechanical forces decreased from 14% in 2018 to 7% in 2022, with a 31% reduction in case numbers. There was also a decrease in injuries due to exposure to fire, burns, radiation, and extreme temperatures by 36%, and poisoning/toxic effects by 44%. However, injuries related to falls and other/unspecified factors increased by 46% and 54% respectively, though their proportions among all injury mechanisms did not change significantly. There was a significant increase in injuries to the thorax/neck, from 9% in 2018 to 34% in 2022 (n=314 in 2018 to n=469 in 2022). New cases of upper extremity injuries increased by 113% (n=147 in 2018 to n=313 in 2022), with the proportion of these injuries rising from 12% to 18%. Injuries involving multiple body regions increased by 54% (n=98 in 2018 to n=152 in 2022), and injuries to lower extremities rose by 49% (n=314 in 2018 to n=469 in 2022). There was a 64% decrease in complications (22 cases in 2018 to 8 cases in 2022).

The number of death cases increased by 50% from 2018 to 2022. Discontinued treatments rose by 71%, and completed treatments increased by 48%. The proportion of referrals decreased from 21% to 16% over these years. The trends in the length of hospital stay from 2018 to 2022 did not show significant changes in the proportions of patients staying 4 days or less versus those staying more than 4 days. There was a slight decrease in the average length of hospital stay from 3.9 days in 2018 to 3.6 days in 2022. The proportion of injuries with undetermined intent increased from 2% to 9%, with the number of such cases rising from 7% of all undetermined cases in 2018 (n=26) to 43% in 2022 (n=161). The proportion of unintentional injuries decreased from 94% to 87%. Assault cases increased from 15% in 2018 to 27% in 2022. The proportion of patients arriving via emergency medical services increased from 32% in 2018 to 58% in 2019 and remained high at 54% in 2022. Referrals from other medical facilities rose from 5% in 2018 to 28% in 2022. There was a slight decrease in the number of walk-in arrivals by 6% (n=844 in 2018 to n=790 in 2022).

The age group with the highest number of injury cases was those aged 65 and over. This aligns with findings from the Adjara region in 2019 and Georgia in 2018, which also reported a predominance of male patients and significant injuries in specific age groups [5,7]. The higher incidence of injuries among older adults in Kakheti may be due to age-related factors such as increased susceptibility to falls and other risks. Behavioral habits and environmental factors specific to different age groups and genders probably contribute to this pattern. While our study did not identify specific causal factors, previous research indicates that men tend to get injured more often, possibly due to occupational hazards and risk-taking behaviors [8-10].

According to the present study's results, the average length of hospital stay (LOS) was four days, which is slightly higher than the three-day average reported in the Adjara region [7].

Another study by Stevens et al. (2006) highlights that falls are a common cause of injury among older adults, often leading to hospital admissions with a relatively short length of stay (LOS) [11]. Analysis of the injured body regions in our study revealed that the head was the most commonly affected area, particularly among males and individuals aged 16-24. This aligns with existing literature, which consistently identifies head injuries as a major public health concern due to their high rates of mortality and morbidity. Scientific studies and hospital data underscore the severity of head injuries across various regions [12-15].

Limitations of the study. Study mainly covers hospitalized cases with lack detailed information on where and how these injuries occurred, which limits ability to fully understand how to prevent injuries effectively.

Conclusion. Despite these limitations, our study offers valuable insights for public health decision-making, particularly concerning hospitalizations for traumatic injuries in the Kakheti region of Georgia, where such data have not been previously available.

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SUMMARY

Introduction: Injuries rank as one of the leading causes of death and long-term impairment globally. They frequently result in temporary or permanent disability, necessitating extended physical and mental health care as well as rehabilitation. The primary aim of research is to investigate and characterize the epidemiological features and 5 years trends of injuries (2018-2022) in the Kakheti region. There are no previous studies in this area.

Methods: This research was a retrospective, descriptive study covered the period from January 1, 2018, to December 31, 2022. The primary database for this research was obtained from the National Center for Disease Control and Public Health in Georgia (NCDC).

Results: A total of 7,861 injury-related hospitalization cases were identified. Males comprised 59.8% (4,700) of patients, while females made up 40.2% (3,161). Patients' ages ranged from 0 to 104 years, with a median and mean age of 46 years. The most frequent age group was 65 and older, representing 29.5% (2,317) of cases, followed by the 25-44 age group at 22.9% (1,801). Falls were the most common mechanism of injury, accounting for 50.9% (4,001) of cases, followed by road traffic accidents at 23.8% (1,869). The head was the most commonly affected area, with 34% (2,674) of injuries. The average hospital stay was four days.

Conclusions: This study provides crucial information about injury hospitalizations trends in 2028-2022 and epidemiological characteristics in the Kakheti region of Georgia. These findings help guide public health decisions and create targeted programs to prevent future injuries in Kakheti region.

Keywords: Injury, hospitalization, epidemiological characteristics, trends, Kakheti, Georgia.