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Research Article

Current Trends and Associated Factors of Traumatic Amputations in Shiraz

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Abstract

Introduction: Amputations from trauma can lead to disability and pose a challenge for health care services. This study hopes to shed light on the trend, the changes, outcomes, and factors associated with trauma leading to amputations in Shiraz, Iran.

Method: A cross-sectional study was conducted to assess patients who experience amputations due to trauma in Shiraz from 2017 to 2023. The sampling method consisted of patients hospitalized at Shahid Rajaee Hospital in Shiraz. We included participants who were hospitalized for traumatic amputations. Outpatients, follow-up cases, and non-trauma-related amputations were excluded from the analysis. Data collection included variables such as admission year, gender, age, and level of amputation.

Result: 435 patients were included, and 92.2% were males. The average age of patients was 36.1 years, and the majority of patients (88.8%) underwent minor amputations. Amputation was most common among motorcycle riders (47.5%), while traffic accidents and lower limb injuries significantly contributed to major amputations, accounting for 21.9% and 51.3% of cases, respectively. The average hospital stay was 5 days. The majority of patients stayed over two days. Upper limb injuries and amputations had a significant association ($p < 0.001$), as well as contact with a blunt object and amputation ($p = 0.002$). The presence of many injuries was associated with shorter stays in a hospital ($p = 0.045$). We found a statistically significant increase in amputations by gender ($p <0.001$) and type ($p=0.006$) during the study period. The overall trend peaked in 2022.

Conclusion: The pattern of limb loss rates among participants, mostly men, was worrisome. Motorbike drivers are clearly at greater danger, and road accidents play a big part in severe amputations. The association between arm injuries and amputations shows the need for focused ways to stop this.

Keywords: Amputations, Trend, Traumatic, Iran.

Introduction

Losing a limb brings about disability, greatly restricts movement and bodily ability, and has created a big health cost issue around the world in recent years.[1] Amputations can be pretty risky, needing quick doctor help to stop heavy bleeding and possible sickness; also, they might result in ongoing problems like long-lasting pain and mental harm.[2] The financial strain of losing a limb is important, raising not just the costs for the first care but also the ongoing bills tied to recovery and artificial limbs.[3, 4] Furthermore, missing work becomes a serious problem because many people face formidable obstacles when trying to get back on job.[4] In addition to that, loss of limb can bring emotional effects such as sadness or worry which impact not only the person but also affect their family members or friends' network.[5, 6] A comprehensive understanding of traumatic amputation statistics and their underlying causes is essential for developing targeted prevention strategies and informing evidence-based public health policies to reduce their incidence and their impact.[7, 8]

in Syria, Yemen, and Afghanistan, linking with times of fighting and chaos. On the other hand, places like Iraq, Palestine, Sudan, Lebanon, Iran, and Kuwait showed clear drops. The study pointed out a tricky mix of social-political issues, natural events, pain, and long-lasting sicknesses like diabetes in forming trends all over the area.[26] A larger share of men in amputations might be from their more dangerous actions. Men are more likely to engage in high-speed activities such as motorcycling and high-speed driving, and men are also more likely to work in high-risk jobs. These activities can put men at greater risk for serious injuries and subsequent amputation.[20]

This study has two limitations. First, it is primarily retrospective. Since these studies rely on existing records, data quality and availability can be a major concern. Incomplete, inaccurate, or missing information can significantly bias the results. Second, this is a database study, which is inherently at risk of confounding variables.

Conclusion

The results of our study showed that road traffic accidents and lower limb injuries were the leading causes of amputation. Additionally, factors such as lower limb injury, traffic accidents, and amputation affected the length of hospital stay. Therefore, identifying the patterns of these injuries is essential for their prevention. Our results can contribute to strategies used to reduce the impact and complications of traumatic amputation.

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Conflict of Interest Disclosures

The authors declare that there is no conflict of interest.

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Authors' Contributions

All authors contributed to the study conception and design. M.Y oversaw data collection and ensured adherence to ethical guidelines. M.N. and S.N. conducted the statistical analyses. N.M. and H.M. drafted the initial manuscript, and all authors participated in reviewing and editing the final version to ensure accuracy, clarity, and coherence. M.Y supervised the overall project, guiding the research process. All authors read and approved the final manuscript.

Ethical Statement

The present study has the code of ethics IR.SUMS.REC. No. 1402.245 of Shiraz University of Medical Sciences

Declaration of Generative AI and AI-assisted technologies

The authors declare that no generative AI or AI-assisted technologies were used in the preparation of this manuscript.

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