

# به نام خدا

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# Prevalence and Related Factors of Electrical Burns in Patients Referred to Iranian Medical Centers: A Systematic Review and Meta-Analysis

- ▶ World J Plast Surg. 2022;11(1):1-9.
- ▶ doi: 10.29252/wjps.10.4.\*\*\*
- ▶ [www.wjps](http://www.wjps).



# INTRODUCTION

- ▶ Burn injuries are **under-appreciated trauma** that is related to **considerable morbidity and mortality**. It not only affects physical and mental health but threat patients' **quality of life**.
- ▶ Regarding reports by WHO, the **annual worldwide incidence** of burn injuries in all types was estimated at **11 million burns**, of which **180,000 were fatal**.

- ▶ Most electrical burns occurred in **ages 21 to 50 yr** and affected **men** more than women (89.4% vs 10.6%).
- ▶ In a review of the literature, there was no more information on electric burn injuries in Iran. Understanding the epidemiology of burns can help **develop preventative measures and treatment of electrical burns injuries**, which depends on geographical and socio-economic differences.

# METHODS

- ▶ This is a systematic review according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.
- ▶ This was done by searching multiple electronic bibliographic databases, including Scopus, PubMed, Google Scholar, Embase, Web of Science, and SID, from database beginning Jan 2000 to Dec 2020

- ▶ **Two reviewers separately screened** the search results in the databases with **relevant keywords** to apply eligibility for inclusion.
- ▶ The **reference lists of related studies** were also reviewed for any other related publications.
- ▶ Two researchers independently assessed the quality using the **nine-point critical appraisal checklist by Joanna Briggs Institute (JBI)**
- ▶ Statistical **heterogeneity** was assessed using the **Cochran's Q statistic and I-square (I<sup>2</sup>) test.**

# RESULTS

- ▶ systematic and comprehensive search identified **eighteen studies** that surveyed the prevalence of electrical burn among **hospitalized patients**
- ▶ The included articles had been conducted in **thirteen provinces of Iran.**



- ▶ In all studies, the pooled **prevalence** of electrical burn was estimated at **3.8 % (95% CI: 3.1% - 4.5%)** in burn patients. **Occurrence** of electrical burn-in males and females was **92.3% (95% CI: 87.9% - 95.2%)** and **7.7% (95% CI: 4.8% - 12.1%)** respectively. Also, the **mortality rate** was **3.5% (95% CI: 2.2% - 5.6%)**.
- ▶ Based on three studies 20, 21, 23, **67.2%**, **54%**, and **75.7%** of electrical burns occurred due to **high-voltage** electricity, respectively.

# CONCLUSION

- ▶ Electrical burns are a main public health problem, and their prevention should be emphasized in **male** and **high-voltage injuries**.
- ▶ The epidemiological study of electrical burns helps **determine the effective factors** in the occurrence of this type of damage.

- ▶ **Protection training** should be compulsive at work, such as the ability to disconnect from electrical sources immediately.
- ▶ Information about electrical devices, employment of expert and skilled persons, using labor standards and security systems, use of warning signs, and Public education programs in Iran can be helpful to reduce the incidence of electrical injuries.
- ▶ This study analyzed published studies that investigate **the rate of electrical burn-in Iran**. This study is **the first Meta-analysis on electrical injury rate** among burn patients during 20-year in Iran.

Thank You..



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