

a tertiary hospital in Cape Town South Africa

BACKGROUND:

- Hand injuries are common in orthopaedic clinic worldwide, including South Africa¹⁻³.
- Power tools are a leading cause of these injuries in both occupational and domestic settings^{2,4-8}.
- Primarily affect young, economically active men, especially manual labourers^{2,5,7,9}.
- COVID-19 increased DIY- related hand injuries¹⁰⁻¹⁴.
- Underreporting of occupational injuries in terms of the Compensation of Occupational Injuries Act limits access to private health care shifting costs to employees and public healthcare⁵.

AIM:

This study aims to explore the nature, context, severity and determinants of hand injuries linked to power tool use.

METHODS:

- Study Design:**
- *Observational, cross-sectional study.*
 - *Conducted from February–August 2024 at a tertiary academic hospital in Cape Town, SA.*
 - *Outpatient hand clinic serving the Cape Town Metropolitan area.*
- Study Population:**
- *Patients aged >18 with acute hand injuries from power tool use.*
- Exclusions:**
- *Injuries >72 hours old or non-traumatic (e.g., repetitive strain injuries).*
- Data Collection:**
- *Demographics.*
 - *Safety-related factors.*
 - *Injury characteristics*
 - *Modified Hand Injury Severity Score (MHISS) used to quantify injury severity.*

Statistical Analysis:

- Descriptive analysis
- Fisher's exact test (Tool type vs. injury location, Tool type vs. MHISS category)

RESULTS:

Table 1: Characteristics of study participants

		N = 64 (%)
Age (Years)		
Median (IQR)		38 (30 - 53)
Range		19 – 78
Gender	Female	1 (1%)
	Male	58 (91%)
	Unknown (missing)	5 (8%)
Education	Primary school (grade 1 – 7)	13 (20%)
	Highschool (grade 8 – 9)	14 (22%)
	Highschool (grade 10 – 12)	32 (50%)
	Tertiary	5 (8%)
Employment status	Full-time employee	16 (25%)
	Casual employee	14 (22%)
	'Piece job' employee	9 (14%)
	Self-employed	9 (14%)
	Retired	3 (5%)
	Unemployed	13 (20%)

RESULTS CONTINUED:

Figure 1: Source of injury stratified by location of injury

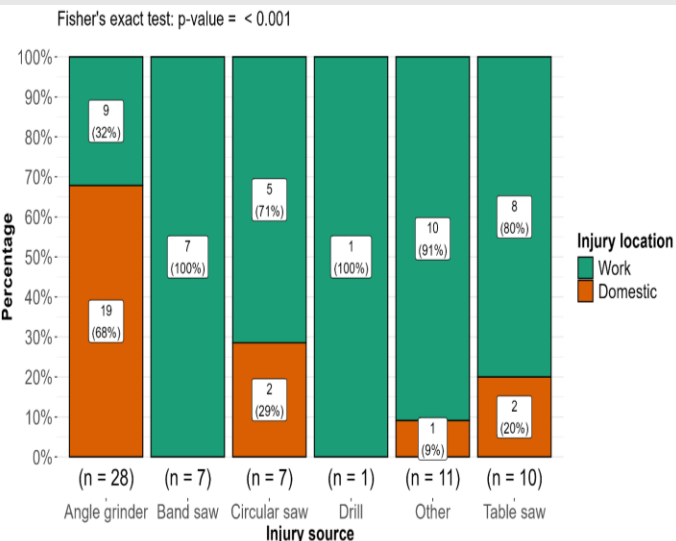
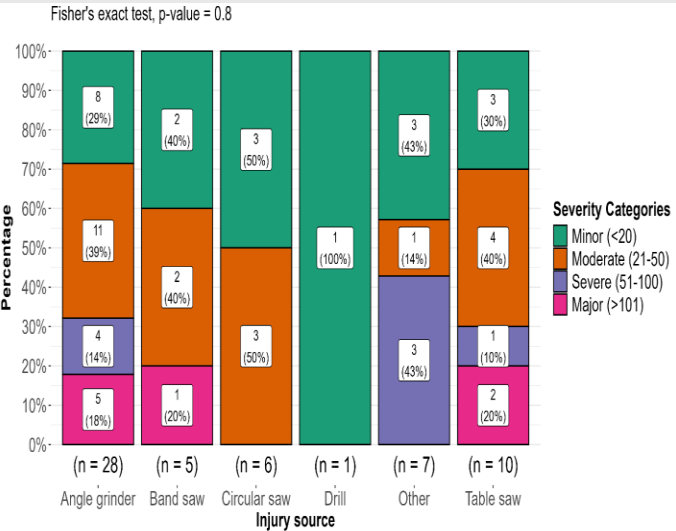


Figure 2: Source of injury stratified by modified hand injury severity score



DISCUSSION

- Hand injuries from power tools primarily affect young, working-age males.
- Angle grinders are the most common tools implicated, particularly in domestic settings.
- Most injuries are classified as minor or moderate but still require surgical intervention.
- Occupational injuries were underreported, with significant impact on manual labourers' livelihoods.
- Prevention efforts focus on workplace safety, while domestic users remain insufficiently protected.

References

- [illegible]

Acknowledgements

All patients and Groote Schuur Hospital Staff