Laryngopharyngeal Trauma in Grappling Martial Arts

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Background

Brazilian Jiu-Jitsu (BJJ) and Mixed Martial Arts (MMA) have grown globally, exposing athletes to frequent chokehold techniques including:

- **Blood Chokes**: restrict cerebral blood flow; linked to acute neurovascular injuries
- **Air Chokes**: compress the larynx/trachea; injury patterns remain poorly understood.

Air choke injuries can be severe and sometimes misdiagnosed, combining sustained compression with high-force trauma, a mechanism distinct from blunt trauma or strangulation.

Research questions

To evaluate the prevalence, mechanisms, and cultural attitudes surrounding laryngopharyngeal injuries in BJJ and MMA athletes.

Methods and materials

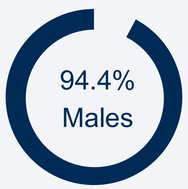
Design: Cross-sectional, mixed-methods study
Participants: BJJ and MMA practitioners recruited online and via word-of-mouth
Data Collection:

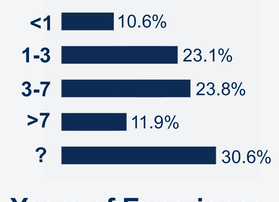
- Online survey on training history, chokehold exposure, and perceived injury risk
- Semi-structured interviews exploring injury experiences and cultural attitudes

Outcomes: prevalence, mechanisms, and attitudes towards laryngopharyngeal injuries
Analysis:

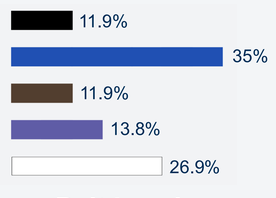
- Quantitative: descriptive statistics
- Qualitative: thematic coding of interview transcripts

Quantitative Results



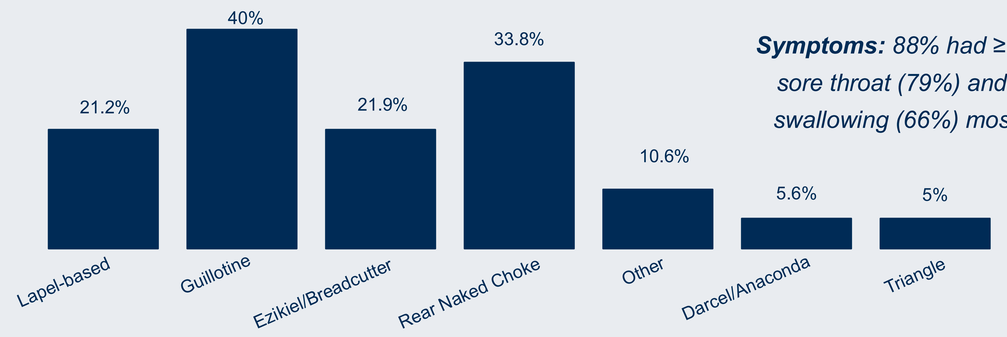


Years of Experience

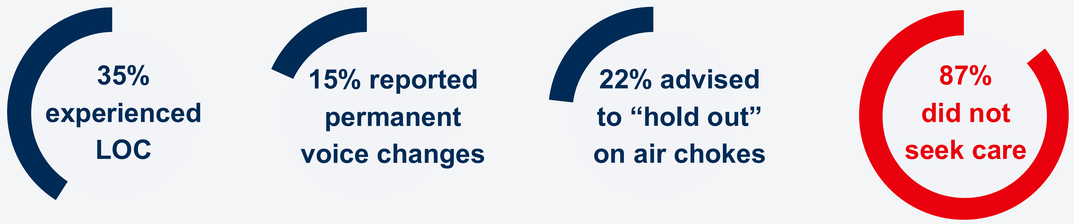


Belt Level

Chokeholds Associated with Laryngopharyngeal Symptoms



Symptoms: *88% had ≥1 symptom; sore throat (79%) and pain with swallowing (66%) most frequent*



Qualitative Results

Risk Awareness vs "Toughness": Athletes conflicted between pushing through pain and recognizing injury.

Education Gaps: 100% noted minimal airway safety instruction, especially for novices.

Cultural Norms: 92% reported "push through" mentality; injuries normalized.

High-Risk Techniques: 100% noted certain chokes, especially rapid/forceful, increase injury risk.

Partner Mismatch: 85% cited size, experience, or intensity differences as hazards.

Healthcare Barriers: 62% distrust clinicians; 77% cite time, cost, or training loss as obstacles.

Conclusion

High Prevalence: ~90% report symptoms; 1 in 6 permanent voice changes.

Low Care-Seeking: 87% trained while symptomatic; only 11% sought medical evaluation.

High-Risk Practices: Air chokes (guillotine) linked to LOC and injury.

Culture & Knowledge Gaps: "Push through pain" norm; minimal airway safety education.

Cumulative Risk: Longer training + prior LOC increases likelihood of permanent injury.

Clinical & Prevention Implications: Timely evaluation, laryngoscopy/CT, safe technique, early tapping, and airway safety education recommended.

Acknowledgements

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References