Differences in the Prevalence of Shoulder Instability Among Non-Operative Physicians, Rehabilitation Providers, and Orthopaedic Surgeons within Sports Medicine

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Significance: The sports medicine team can include clinicians within surgical and non-surgical specialties caring for the athlete[1,2]; any may be the first point of treatment for athletes with shoulder instability. Because surgery is effective for treating dislocations[3], orthopaedic surgeons may be more likely to see patients following a dislocation. On the contrary, individuals with atraumatic instability, which is best managed conservatively[4], may present more often to non-operative clinicians.

Innovation: Prior characterization of the prevalence of shoulder instability has been primarily limited to within individual clinical specialties[5,6]. In our study, we surveyed 888 sports medicine clinicians (orthopaedic surgeons, primary care sports medicine physicians, physical therapists, athletic trainers) about the proportion of patients they manage with different subtypes of shoulder instability.

Results: **1)** Orthopaedic surgeons reported managing more shoulder-specific patients with shoulder dislocation. **2)** Athletic trainers reported managing more patients with multidirectional instability. **3)** All specialties except orthopaedic surgeons reported managing as many or more patients with atraumatic instability than with dislocations.

Objective: **To compare the reported prevalence of shoulder instability among patients presenting to non-operative sports medicine clinicians and orthopaedic surgeons.**

Methods

- A **survey** was emailed to sports medicine clinicians through their respective professional organizations.
- Participants answered questions about the **proportion of patients they manage with shoulder instability**.
- **Kruskal-Wallis mean rank tests** and **Tukey post-hoc tests** were used evaluate comparisons between and within all specialties.

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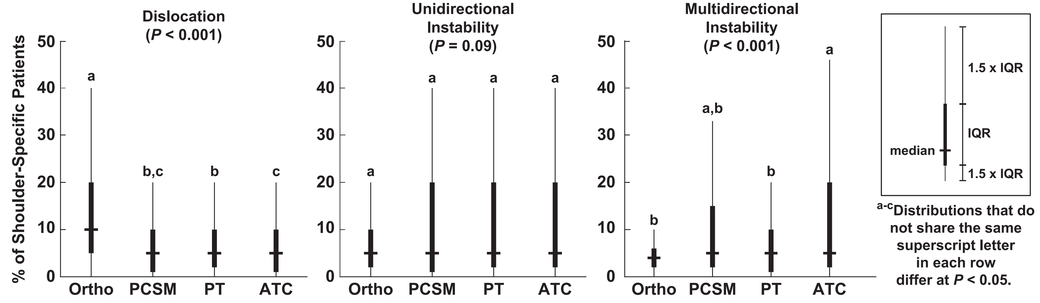
Survey Questions

1) How many **total patients** do you see for an initial consult/examination (new encounter) in your caseload per month?
2) What percent of new encounters in your caseload per month are patients with a **chief complaint of shoulder pain**?
3A) What percent of your new encounters with shoulder pain are due to a **shoulder dislocation** (primary or recurrent) per month?
3B) What percent of your new encounters with shoulder pain present with **unidirectional instability** but without reported dislocation per month?
3C) What percent of your new encounters with shoulder pain present with **multidirectional instability** but without reported dislocation per month?

Results

1 Orthopaedic surgeons reported managing more shoulder-specific patients with shoulder dislocation than all other specialties.



- The **median proportion of shoulder patients with dislocations managed by orthopaedic surgeons was double that of all other specialties** (10% vs. 5%; differences in mean rank: -130 to -200; all $P < 0.001$).

	Ortho	PCSM	PT	ATC
# Participants	170	108	379	231
Subspecialty	*Shoulder*: 149 *Other/None*: 21	*Emerg Med*: 2 *Fam Med*: 55 *Int Med*: 7 *Peds*: 14 *PM&R*: 30	n/a	n/a
Practice Setting Academic Medical Center Private Practice Community Hospital Other	 55 20 93 2	 51 10 37 10	 63 79 186 51	 48 18 27 138
Years of Experience	18±11[a]	14±10[b]	15±11[b]	15±8[b]
Total New Patients per Month	91±4[a]	92±8[a]	29±4[b]	29±2[b]
% of Patients w/ Shoulder Complaints	62±27%[a]	24±16%[b]	28±20%[b]	29±22%[b]

All estimates presented as mean ± standard deviation.
[a-b]Distributions that do not share the same superscript letter in each row differ at $P<0.05$.

2 Athletic trainers reported managing more shoulder-specific patients who presented with atraumatic multidirectional instability than orthopaedic surgeons and physical therapists.

- While the median proportion of shoulder patients with multidirectional instability managed by all specialties was similar (4-5%), **ATCs overall managed more than orthopaedic surgeons** (differences in mean rank: -105; $P < 0.001$) **and physical therapists** (-63; $P = 0.02$).

3 All specialties *except* orthopaedic surgeons reported managing as many or more patients with atraumatic unidirectional or multidirectional instability than with dislocations.

Orthopaedic Surgeons
dislocation > UDI > MDI
P<0.001 MR diff: -89
P=0.04 MR diff: -39

Physical Therapists
UDI = MDI = dislocation

Primary Care Sports Medicine
UDI = MDI = dislocation

Athletic Trainers
UDI > MDI = dislocation
P<0.001 MR diff: -69

Discussion

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- Prior epidemiological studies from orthopaedic surgeons may underestimate the relative prevalence of atraumatic shoulder instability.
- Given the higher prevalence of atraumatic instability among patients presenting to non-surgical clinicians, improving outcomes for these patients would impact a substantial population.

References: [1] Cerny et al. *Am J Orthop*. 2007. [2] Courson et al. *J Athl Train*. 2014. [3] Hurley et al. *Arthroscopy*. 2020. [4] Warby et al. *Am J Sports Med*. 2018. [5] Trojan et al. *Arthroscopy*. 2020. [6] Zacchilli et al. *J Bone Joint Surg Am*. 2010.

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