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Work disability duration after ACL Reconstruction: The role of Graft Type

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Conflict of Interest Statement

- The authors have no conflict of interests to declare.

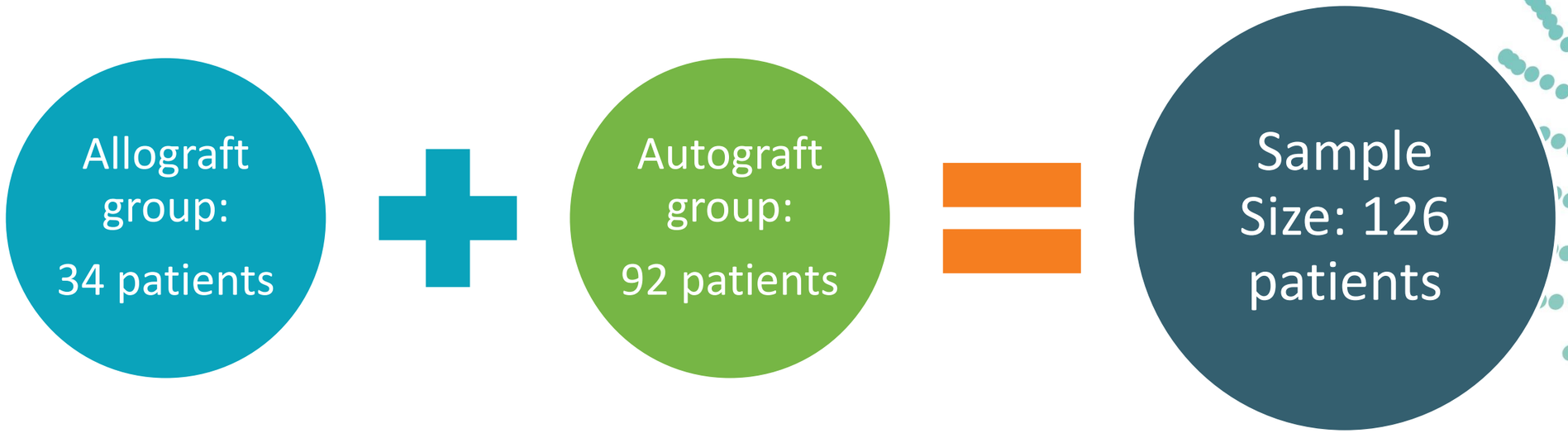
Background

The timing of return to work (RTW) following anterior cruciate ligament reconstruction (ACLR) has received less research attention compared to return to sports.

Aim: To assess the duration of temporary work disability following ACL reconstruction in relation to the type of graft used—autograft or allograft.

Methods

A retrospective cohort study was conducted on 126 workers who required work disability following ACL reconstruction. Surgical procedures were performed at the ISSSTEP Speciality Hospital in Puebla, Mexico, using either autografts or allografts.



Methods

✅ Inclusion:

Workers who underwent a primary surgical intervention for either recent or chronic ACL rupture with an allograft or autograft between 2013 and 2023. A minimum follow-up period of 12 months was required for each case.

❌ Exclusion:

- Workers who underwent ACL revision surgery.
- Patients with associated injuries beyond ACL rupture.
- Cases requiring surgery for more severe conditions than ACL injury alone.

Methods

Statistical Analysis:

- The Chi-square test and Fisher's exact test were used to assess differences in the distribution of study variables according to graft type.
- To evaluate variations in work disability duration based on graft type and other study variables, a parametric test for independent samples was applied, as disability duration followed a normal distribution.
- R Studio was used for statistical analysis.

RESULTS

102 (82%)

24 (18%)

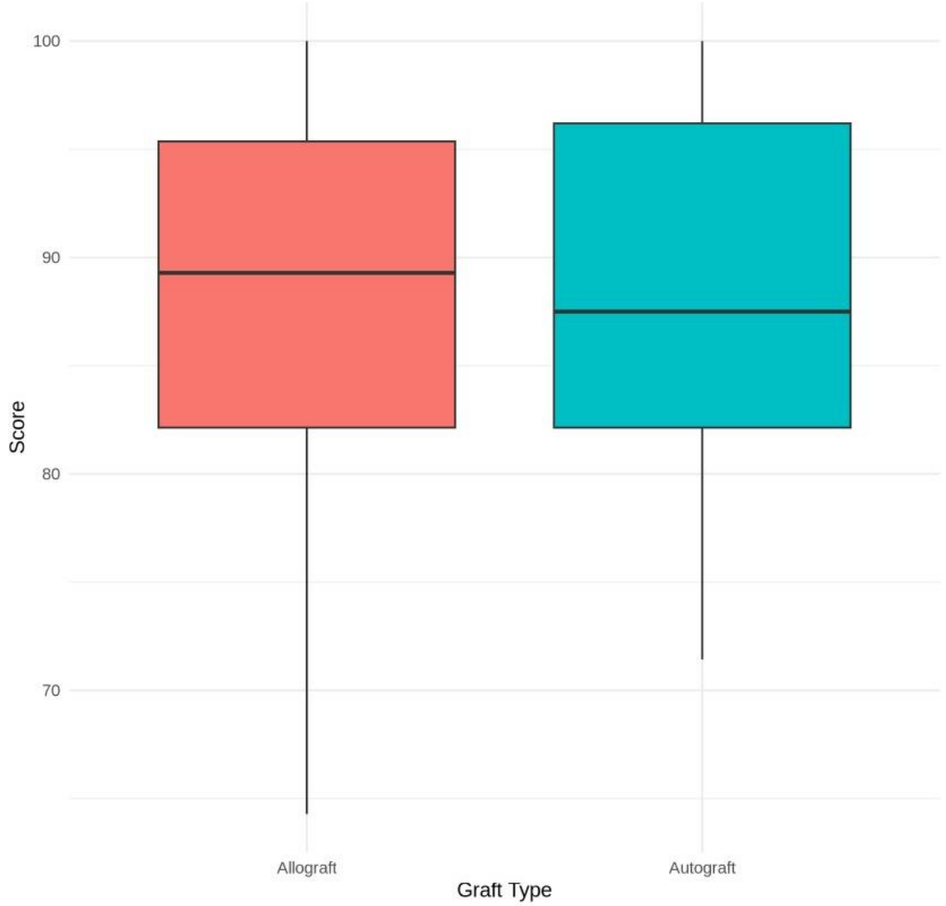
Age mean 32.36 ± 10.59

Surgery Time (minutes):	Anesthetic Time (minutes):	Pre-surgical Consultations:
p-value = 0.427	p-value = 0.276	p-value = 0.829
Allograft: 92.94 ± 32.55	Allograft: 112.94 ± 32.01	Allograft: 3.39 ± 1.48
Autograft: 98.93 ± 26.33	Autograft: 121.25 ± 27.44	Autograft: 3.32 ± 1.12

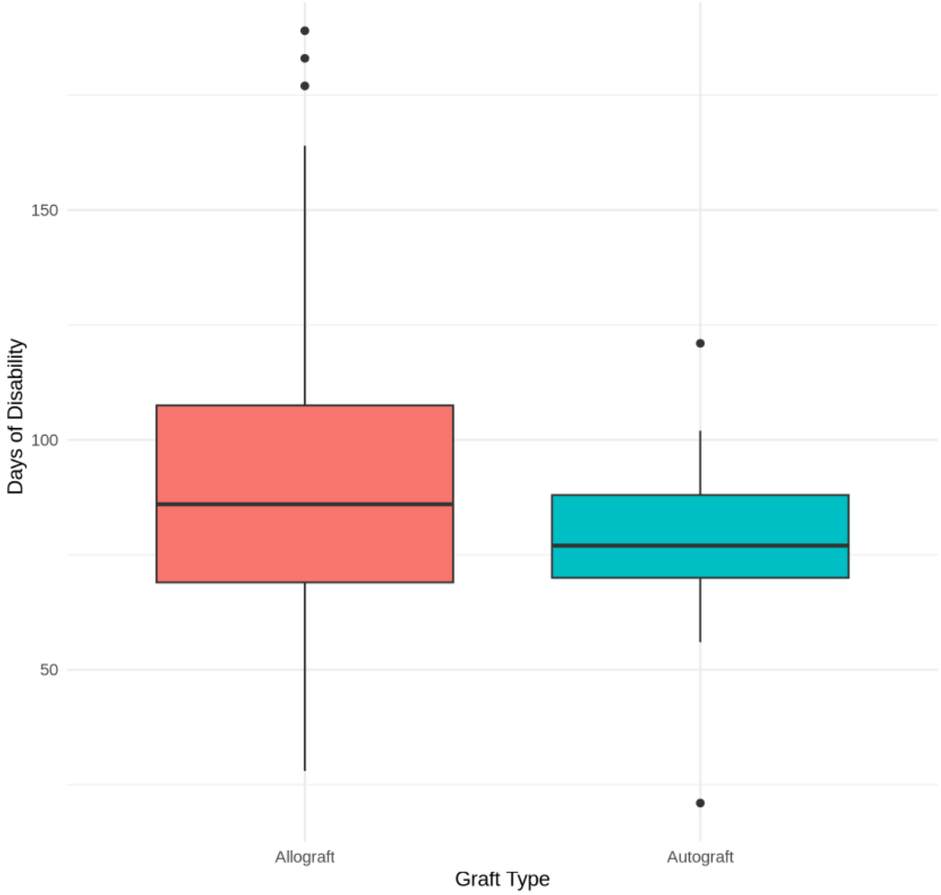
Post-surgical Consultations:	KOSS score	Work disability
p-value = 0.725	p-value = **0.965**	p-value = **0.017**
Allograft: 5.18 ± 2.83	Allograft: 87.22 ± 9.32	Allograft: 97.04 ± 46.85 days
Autograft: 5.39 ± 1.77	Autograft: 87.20 ± 9.04.	Autograft: 78.10 ± 21.36 days.

Results

KOSS Score



Disability Days



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Discussion

Allograft

- The median work disability duration for the allograft group was 97.04 ± 46.85 days
- The interquartile range (the middle 50% of values) spanned from roughly 100 to 150 days.
- There were a few outliers with disability durations above 200 days in the allograft group.

Autograft

- The median work disability duration for the autograft group was 78.10 ± 21.36 days.
- The interquartile range was much narrower, spanning approximately 50 to 100 days.
- There were a couple of outliers with disability durations above 100 days in the autograft group, but these were less extreme compared to the allograft group.

Discussion

📌 To our knowledge, this is the **first study in Mexico** comparing graft types in relation to return to work.

Study	Sample	Graft Types	RTW Duration	Findings
Krupa & Reichert (2020)	62 patients	Allograft vs. STGR autograft	Allograft: 6.96 ± 1.9 weeks; Autograft: 9.27 ± 1.57 weeks (office work)	Allografts led to earlier RTW and less postoperative pain.
Arimaa et al. (2022)	803 Finnish workers	Graft type not specified	Mean RTW: 65 days; Median: 59 days	RTW delayed in older age, manual labor, prior sick leave.
Özbek et al. (2024)	1791 patients (13 studies)	Mostly HT autografts (76.8%), 17.1% allografts	HT: 84.2 days (31.4–107.1); Allograft: 69.5 days (49–56.6)	Allografts had earlier RTW in most studies.

Study Limitations

Retrospective and Observational Design	Limits ability to establish causality; randomized controlled trials would offer stronger evidence.
Lack of Job Role Classification	Specific occupational demands were not documented, which may affect return-to-work outcomes.
Unrecorded Injury Severity & Graft Selection Criteria	The degree of ACL damage and surgeon rationale for graft choice were not assessed.
Limited Data on Rehabilitation	Postoperative rehab beyond the initial phase was conducted at external centers and not monitored.
No Long-Term Follow-Up	Patients were not followed after returning to work, so late symptoms or complications were not evaluated.

Conclusion

- Our findings suggest that patients treated with autograft required fewer days out of work.

- Further research is needed to explore additional factors that may influence the return to work after ACL reconstruction and to develop strategies to optimize outcomes for patients.

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