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# Demographics, Fracture Characteristics, and Treatment Strategies of Periprosthetic Distal Femur Fractures Compared to Native Distal Femur Fractures

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## Introduction

There is a lack of literature that provides clinical comparisons between periprosthetic distal femur fractures (PDFF) and native distal femur fractures (NDFF), as well as the populations affected.

## Objective

Analyze the demographics, fracture characteristics, and treatment strategies associated with periprosthetic distal femur fractures (PDFF) compared to native distal femur fractures (NDFF).

## Methods

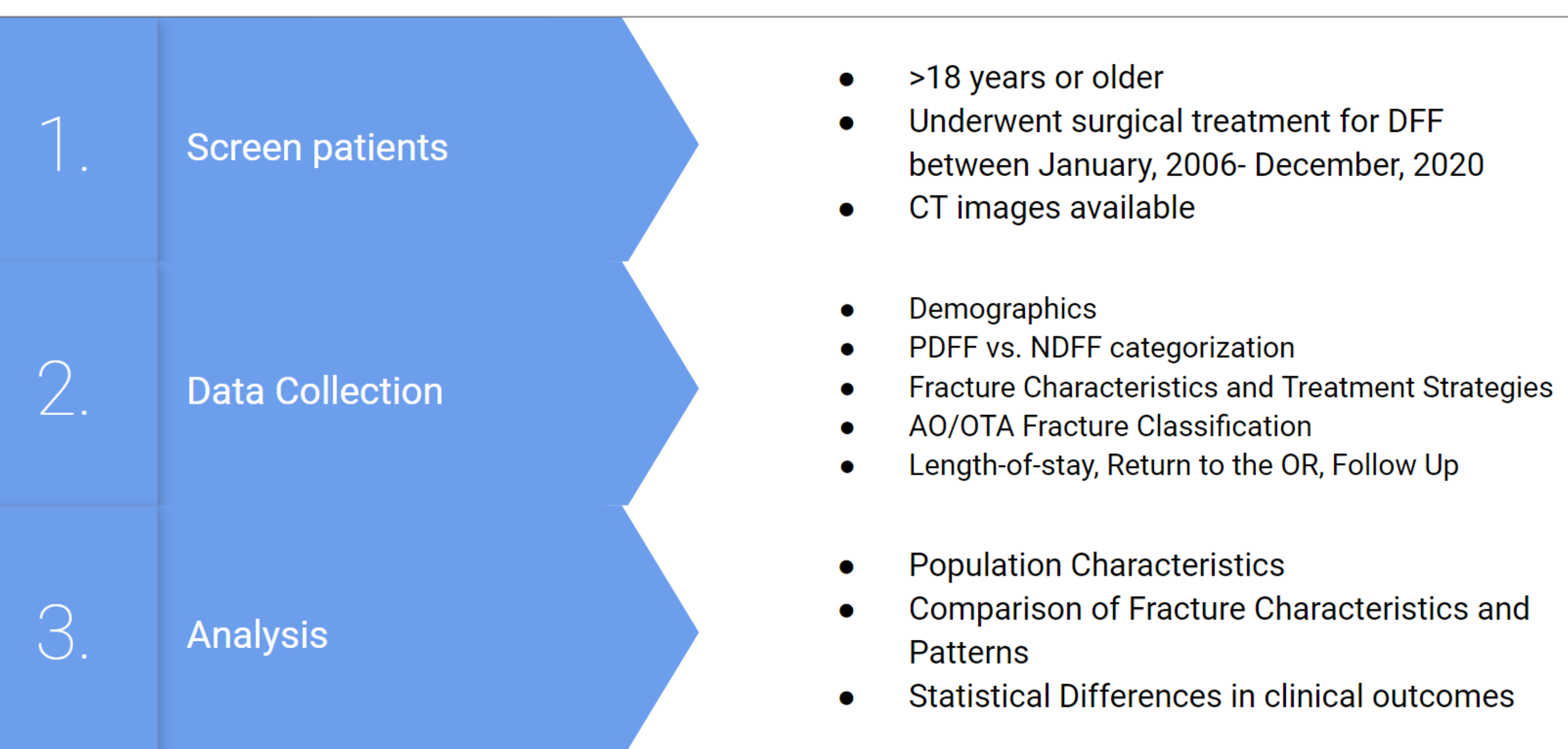


Image A

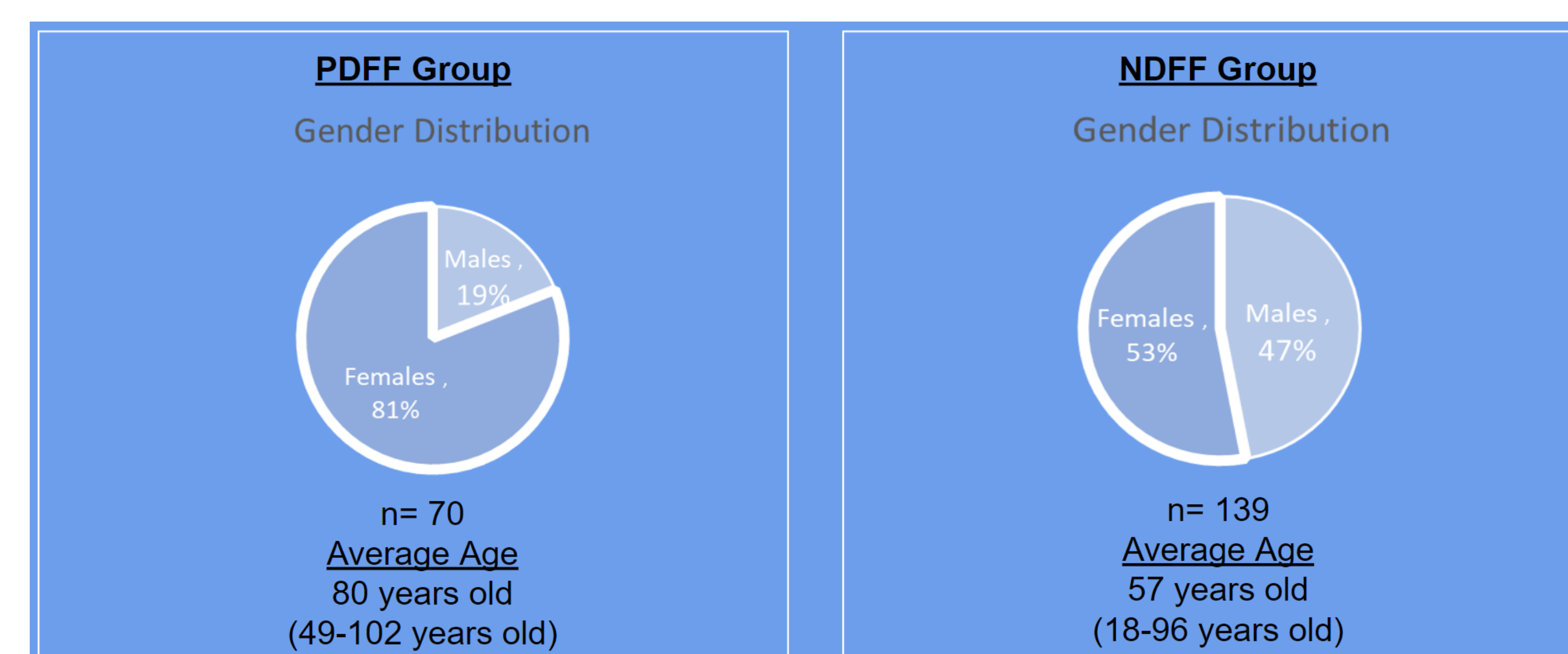


Image B

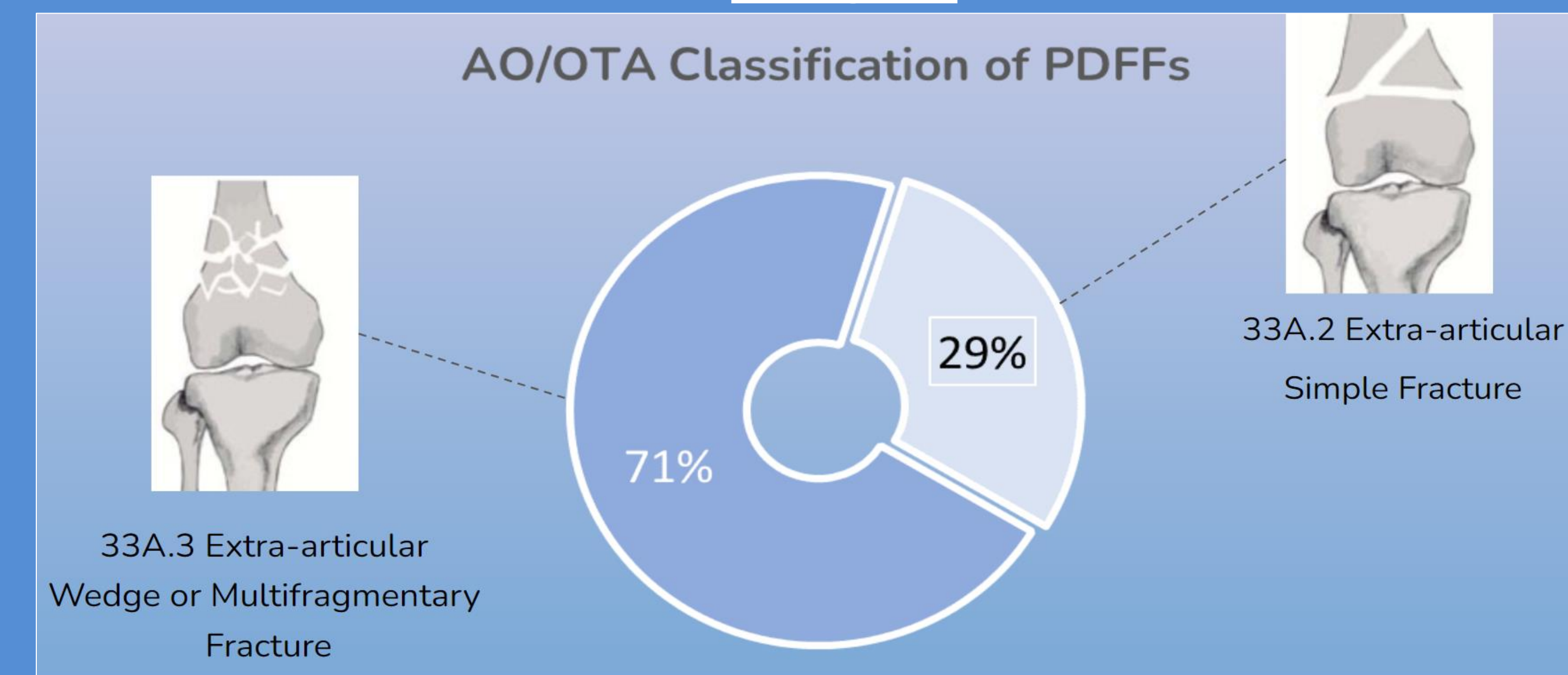
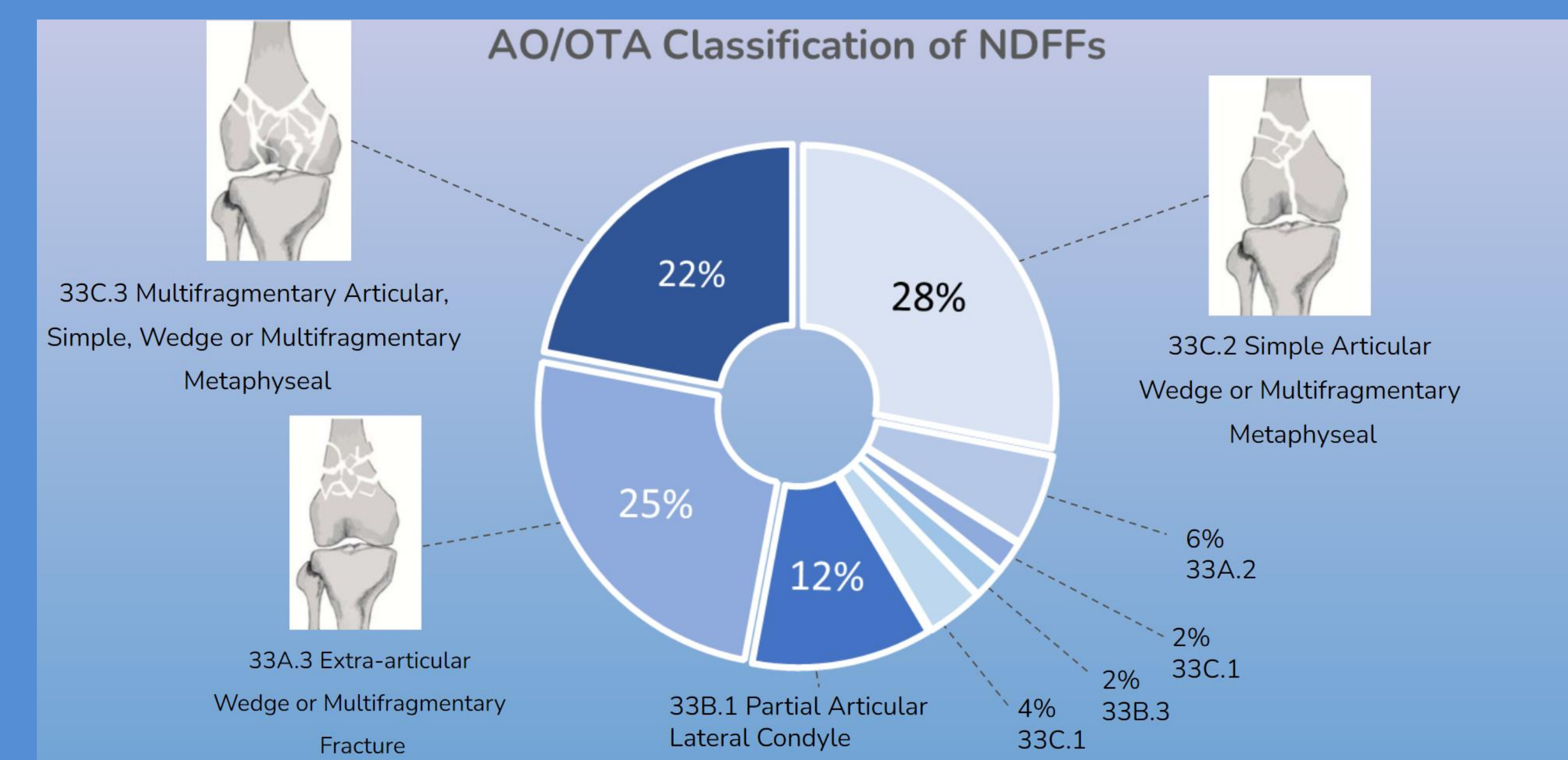


Image C



## Results

- Women represented 81% of PDFFs, with an average age of 80 years old (Image A).
- PDFFs were commonly isolated injuries with AO/OTA Classification 33A.3 (Image B).
- NDFFs were often associated with polytrauma (Table A), with AO/OTA Classification 33C.2 (Image C).
- Intramedullary Nailing was the most common fixation for both groups, while nail-plate was the second most common in PDFF (Image D).
- PDFFs experienced significantly shorter length-of-stays but had significantly higher rates of low bone density and higher rates of re-operation compared to NDFF (Table B).

Image D

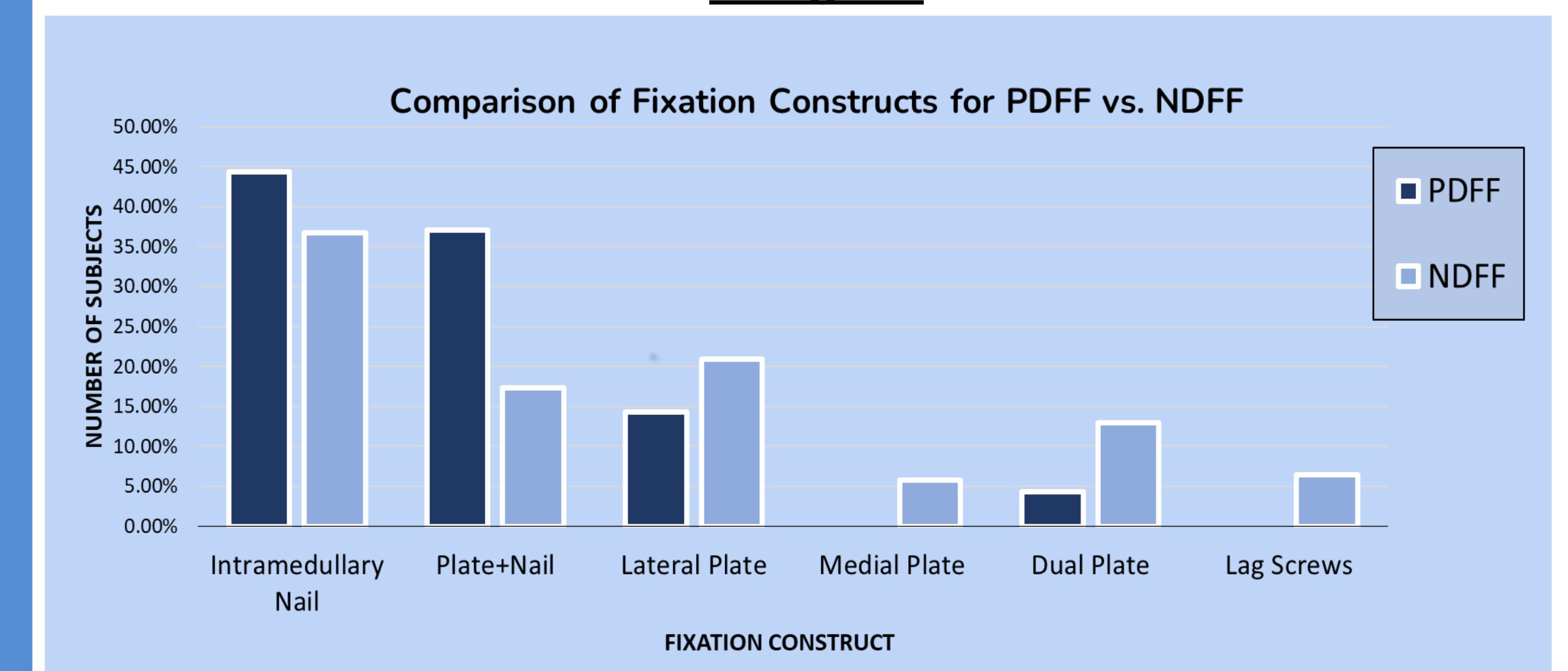


Table A: Fracture Characteristics

	PDFF (n=70)	NDFF (n=139)
Isolated Injury	80.0%	51.8%
Polytrauma	18.6%	41.0%
Comminution	85.0%	92.1%
Interprosthetic Fracture?	24.3%	—

Table B: Length-Of-Stay, Bone Density, and Re-operation

	PDFF	NDFF	α-value	P-value
Length-of-stay	6.36 days	11.4 days	0.05	P-value: 0.00172
Prevalence of Low Bone Density	55.7%	19.4%	0.05	P-value: .00001
Re-operation occurrences	8.57%	13.6%	0.05	P-value: .283804
Most common reason for re-operation	Revise Fixation (3)	I&D (7) Nonunion (3)		—

## Conclusion

- PDFFs frequently occur as isolated, extra-articular or comminuted injuries compared to NDFF.
- While intramedullary nailing was the most common fixation for both groups, hybrid fixation is becoming more common for PDFF.
- Elderly women with knee replacements and poor bone quality are a high-risk group for PDFF.

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## References

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- 2) Benkovich, V., Klassov, Y., Mazilis, B., & Bloom, S. (2020). Periprosthetic fractures of the knee: a comprehensive review. *European Journal of Orthopaedic Surgery & Traumatology*, 30(3), 387–399. <https://doi.org/10.1007/s00590-019-02582-5>