ePoster #91

MIDWEST
ORTHOPAEDICS
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Patients Age 40-Years and Older Demonstrate Durable Outcomes Following Hip Arthroscopy for Hip Impingement

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Disclosures

Thomas W. Fenn: Nothing to Disclose.

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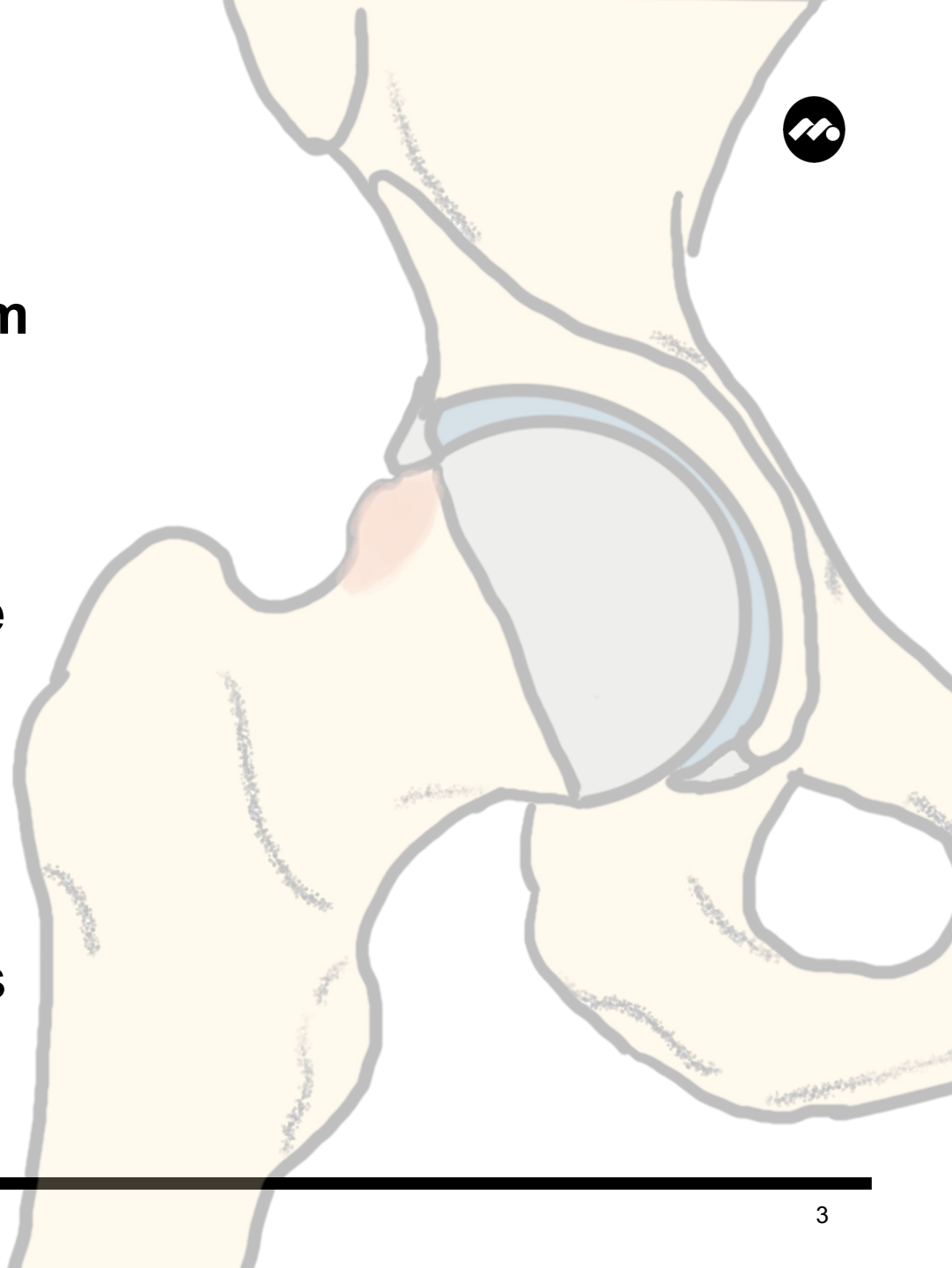
Introduction

Prior studies have shown **increased age** as a common predictor of **inferior short- to mid-term outcomes** following hip arthroscopy for femoroacetabular impingement syndrome.[1-3]

However, there is high association between **age** and **joint degeneration** which may confound these findings.

Limited studies isolate age and assess outcomes between patients **≥ 40** and **< 40** years old at **minimum 10-year** follow-up.



Objectives

1) To compare patient-reported outcomes (**PROs**) and achievement of clinically significant outcomes (**CSOs**) between patients ≥ 40 and < 40 years of age at **10 years** after hip arthroscopy for FAIS.
2) To compare **reoperation-free survivorship** between groups.

Hypotheses

1) Patients ≥ 40 years of age would show **inferior** 10-year PROs and CSOs.
2) Patients ≥ 40 years of age would show **inferior** reoperation-free survivorship.

Methods

Patient Selection

- Inclusion criteria:
  - Hip arthroscopy for FAIS between Jan. 2012 and Feb. 2013.
    - *All patients underwent contemporary hip arthroscopy with chondrolabral preservation, surgical correction of FAIS, and capsular repair.*
  - Minimum 10-year follow-up complete.

- Exclusion criteria:
  - Tönnis grade > 1.
  - Hip dysplasia (lateral center-edge angle < 18°).
  - Prior ipsilateral hip arthroscopy.
  - Concomitant hip procedures (gluteus repair).
  - Developmental Hip Disorders (SCFE, LCP).

Methods

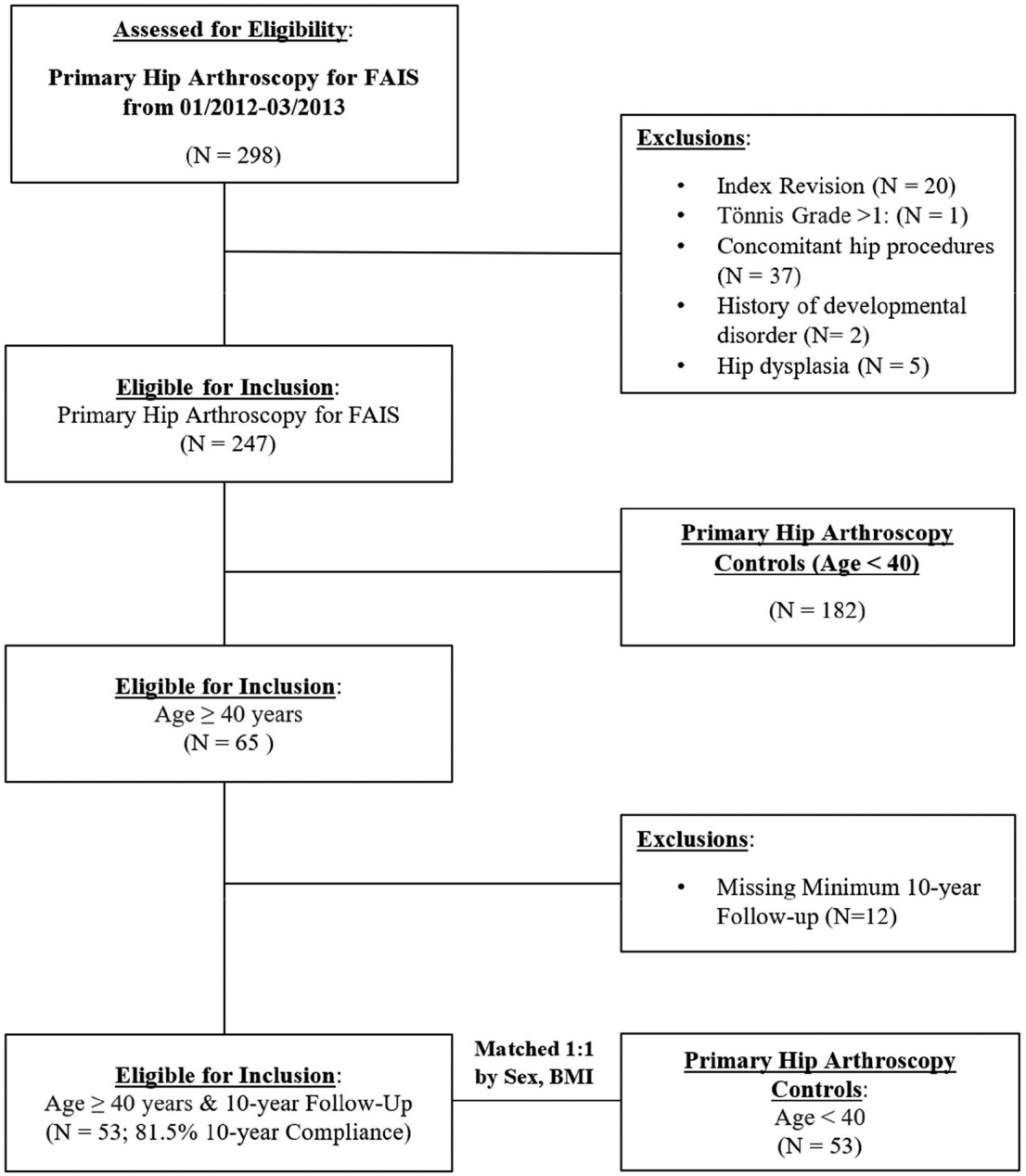
Statistical Analysis

- Patient-Reported Outcomes (PROs):
  - Compared between groups using independent samples t-tests.

- Clinically Significant Outcomes (CSO): Cohort-Specific
  - Minimal Clinically Important Difference (MCID): Distribution method.
  - Patient Acceptable Symptom State (PASS): Anchor-based method.
    - Compared between groups using Fisher's Exact tests.

- Kaplan-Meier Survival Analysis:
  - Log-Rank Test Comparisons.

Results


Assessed for Eligibility:
Primary Hip Arthroscopy for FAIS from 01/2012-03/2013
(N = 298)
Exclusions:
• Index Revision (N = 20)
• Tönnis Grade >1: (N = 1)
• Concomitant hip procedures (N = 37)
• History of developmental disorder (N= 2)
• Hip dysplasia (N = 5)
Eligible for Inclusion:
Primary Hip Arthroscopy for FAIS
(N = 247)
Primary Hip Arthroscopy Controls (Age < 40)
(N = 182)
Eligible for Inclusion:
Age ≥ 40 years
(N = 65)
Exclusions:
• Missing Minimum 10-year Follow-up (N=12)
Eligible for Inclusion:
Age ≥ 40 years & 10-year Follow-Up
(N = 53; 81.5% 10-year Compliance)
Matched 1:1 by Sex, BMI
Primary Hip Arthroscopy Controls:
Age < 40
(N = 53)

Results

Table 1. Demographic, Radiographic, and Intraoperative Characteristics.

	Age ≥ 40 (N = 53)	Age < 40 (N = 53)	P-Value
	Demographics		
Age (years)	48.3 ± 5.8	28.9 ± 7.2	< 0.001*
BMI (kg/m^2)	26.3 ± 4.8	25.5 ± 4.5	0.354
Physical Activity	54.7%	73.6%	0.068
Preoperative Pain > 2 Years	50.9%	41.5%	0.436
	Radiographics		
Alpha Angle (Pre)	62.6 ± 11.8	64.7 ± 12.2	0.434
Alpha Angle (Post)	40.8 ± 5.0	39.5 ± 3.9	0.150
Lateral Center-Edge Angle	30.6 ± 5.7	29.3 ± 6.2	0.259
Tönnis Angle (°)	7.4 ± 3.9	8.1 ± 6.5	0.820
Tönnis Grade			0.066
Grade 0	67.9%	84.9%	
Grade 1	32.1%	15.1%	
	Procedures Performed		
Labral Repair	84.9%	92.5%	0.359
Capsular Plication	98.1%	100.0%	0.999
Femoroplasty	94.3%	98.1%	0.618
Acetabular Rim Preparation	75.5%	81.1%	0.638

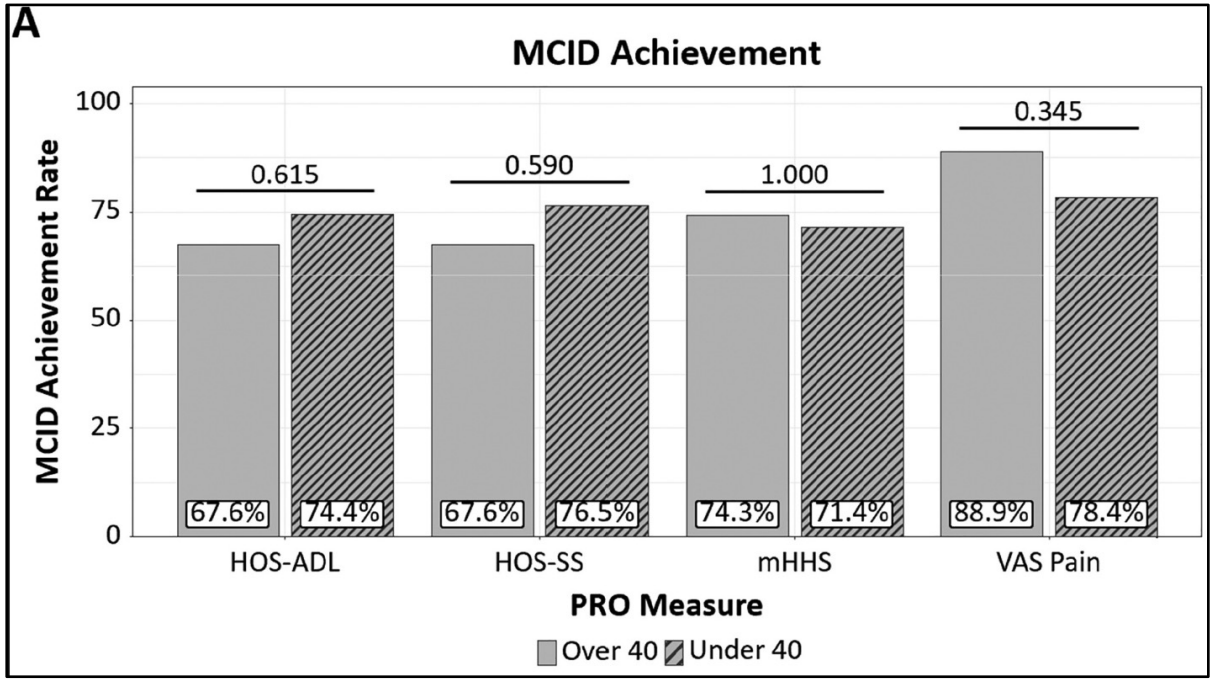
* indicates significance at a predetermined significance level of 0.05.

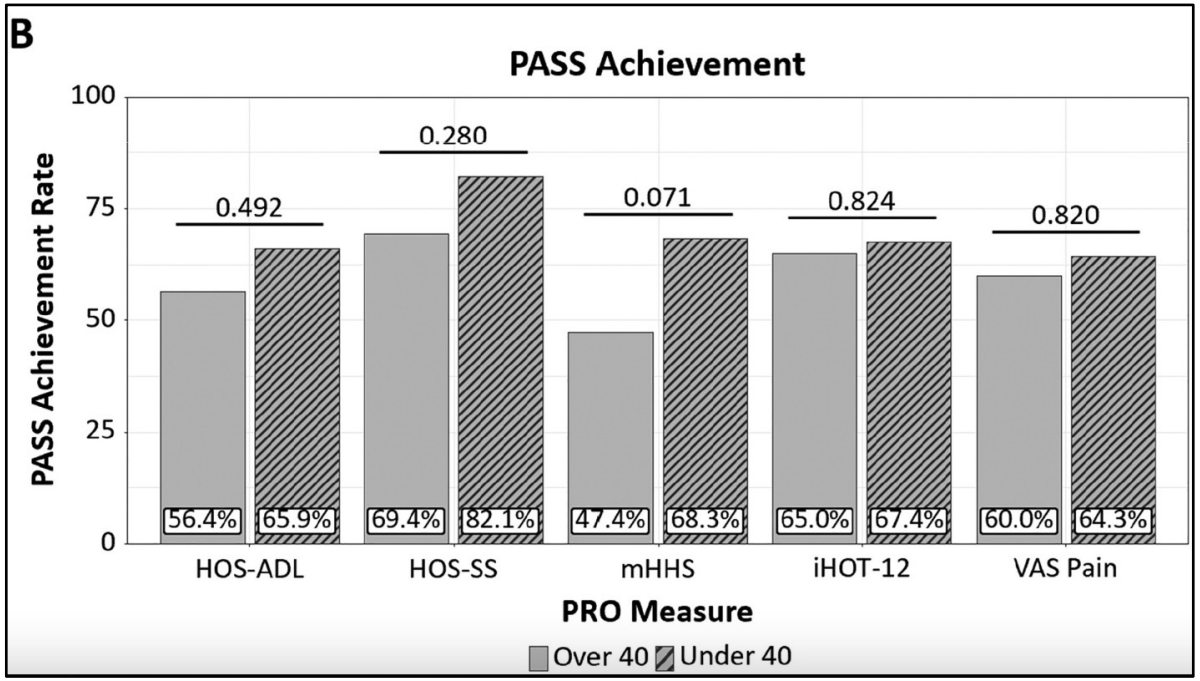
Patient-Reported Outcomes

Table 2. Patient reported outcome measures

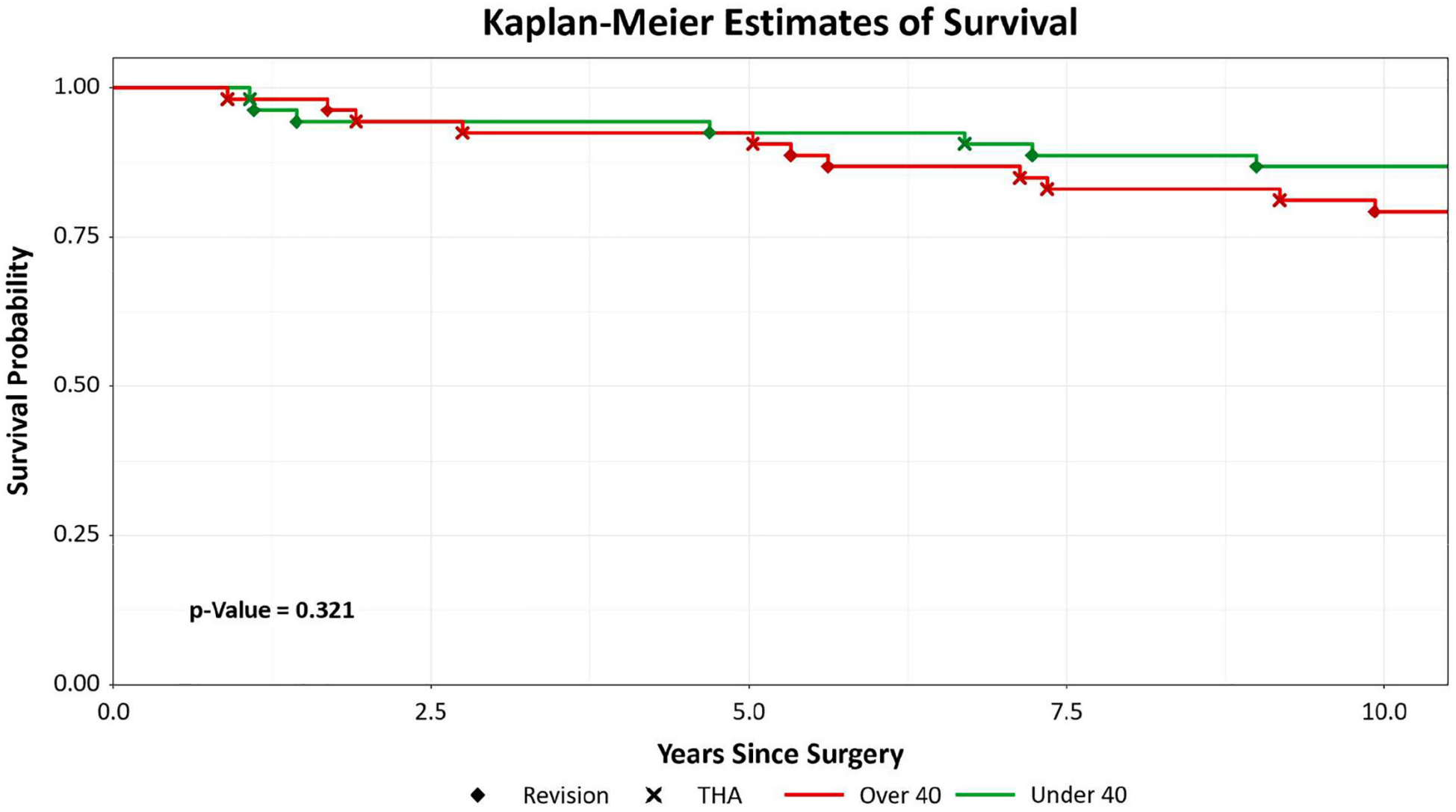
	Age ≥ 40	Age < 40	P-Value
	Preoperative		
HOS-ADL	64.3 ± 19.0	65.1 ± 17.9	0.827
HOS-SS	42.8 ± 24.1	40.7 ± 20.5	0.643
mHHS	55.6 ± 17.5	56.5 ± 10.1	0.802
VAS-Pain	72.4 ± 16.1	65.7 ± 19.0	0.071
	2-Year Postoperative		
HOS-ADL	84.4 ± 17.1	86.1 ± 17.9	0.628
HOS-SS	65.2 ± 25.8	72.3 ± 27.3	0.216
mHHS	73.9 ± 17.6	75.7 ± 17.3	0.615
VAS-Pain	21.5 ± 23.2	19.3 ± 21.7	0.646
VAS-Satisfaction	83.5 ± 18.1	74.0 ± 32.4	0.088
	10-Year Postoperative		
HOS-ADL	83.6 ± 16.5	86.1 ± 16.8	0.509
HOS-SS	72.2 ± 22.6	79.5 ± 28.9	0.223
mHHS	72.9 ± 14.9	75.9 ± 20.0	0.461
VAS-Pain	26.9 ± 25.4	26.5 ± 26.9	0.945
VAS-Satisfaction	88.7 ± 18.0	74.0 ± 32.4	0.261

Clinically Significant Outcomes



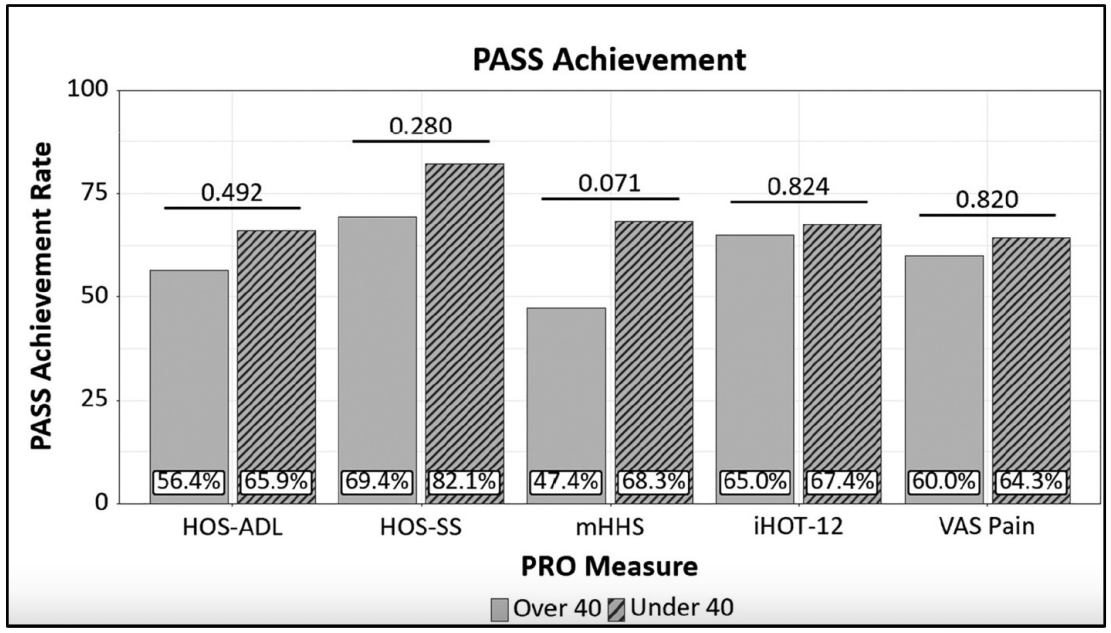


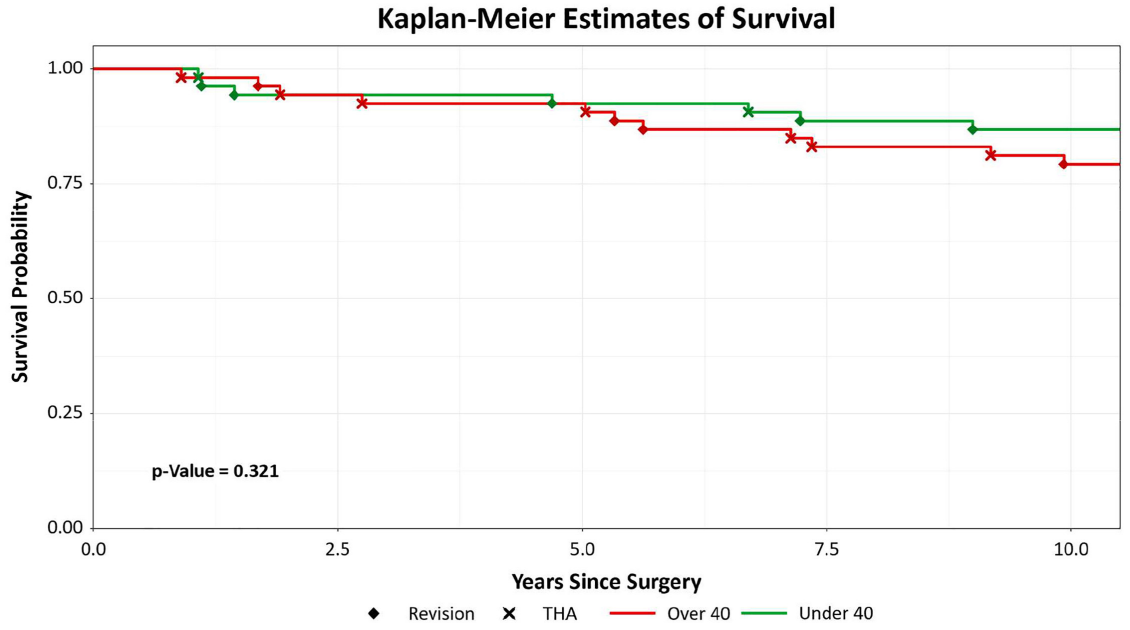
Reoperation-Free Survivorship



Conclusion

1. Patients ≥ 40 and < 40 years of age showed similar 10-year PROs after hip arthroscopy for FAIS.
2. Comparable MCID and PASS achievement was observed between groups for all PROs.
3. Comparable reoperation-free survivorship was observed.





References

1) Jan K, Fenn TW, Kaplan DJ, Nho SJ. Patients Maintain Clinically Significant Outcomes at 5-Year Follow-Up After Hip Arthroscopy for Femoroacetabular Impingement Syndrome: A Systematic Review. Arthroscopy. Published online May 18, 2023:S0749-8063(23)00388-2. doi:10.1016/j.arthro.2023.04.021
2) I. Perets, E.O. Chaharbakhshi, J. Shapira, L. Ashberg, B.H. Mu, B.G. Domb. Hip Arthroscopy for Femoroacetabular Impingement and Labral Tears in Patients Younger than 50 Years: Minimum Five-year Outcomes, Survivorship, and Risk Factors for Reoperations. J Am Acad Orthop Surg, 27 (4) (2019), pp. e173-e183, 10.5435/JAAOS-D-17-00258
3) P.C. Haefeli, C.E. Albers, S.D. Steppacher, M. Tannast, L. Büchler. What Are the Risk Factors for Revision Surgery After Hip Arthroscopy for Femoroacetabular Impingement at 7-year Followup? Clin Orthop Relat Res, 475 (4) (2017), pp. 1169-1177, 10.1007/s11999-016-5115-6

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