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The Impact of Aging on Recovery and Satisfaction in Knee Replacement Patients

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Disclosure Information

One of the authors (DP) has the following disclosures:

- editorial board of: *AJSM, JISAKOS, AP-SMART Journal, OJSM*
- hold shares in: *Personalised Surgery*, *Ganymed Robotics*
- received royalties from: *Smith & Nephew*
- done consulting work for: *Smith & Nephew*
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- received institutional support from: *Smith & Nephew*, *Zimmer*, *Corin*, *Arthrex*

Background

- Total knee arthroplasty (TKA) is a common surgical and safe treatment for severe knee arthritis
- Successful TKA depends on recovery and quality of life after surgery
- Concern regarding poor recovery and increased complications after TKA in elderly patients has led many surgeons to avoid TKA
  - This potentially deprives these individuals of the benefits of TKA

Objectives

- Compare recovery and outcomes of TKA in older patients with patients of younger ages

Hypothesis

- Patients of older age will recover more slowly, but achieve good outcomes after TKA

Methods

Study Sample

- **1723 patients** from our clinic
- Operated between **January 2018 – June 2023**

PROMS

- **Preoperative**: OKS, FJS, VR12
- **3 months**: Patient satisfaction, VAS and Knee normality
- **12 months**: OKS, FJS< VR12, Patient satisfaction, VAS and Knee normality

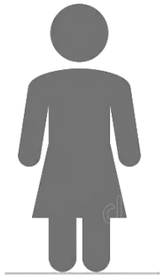
Statistical methods

- Data presented as means and standard deviations
- Linear regression used to test associations between age and PROMs.
- Data was adjusted for gender, body mass index (BMI), knee alignment and Range of motion (ROM)

Cohort summary (n=1723)

Average age

69.4 ±7.80

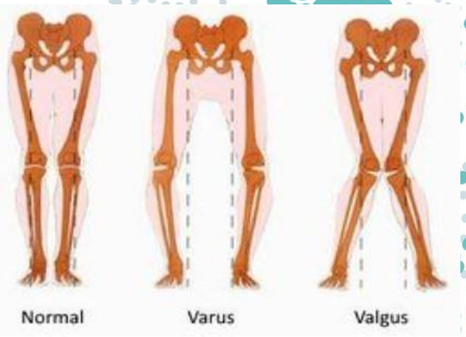


Females

874 (51%)

Average BMI

30.0 ±5.49



Preoperative Knee alignment

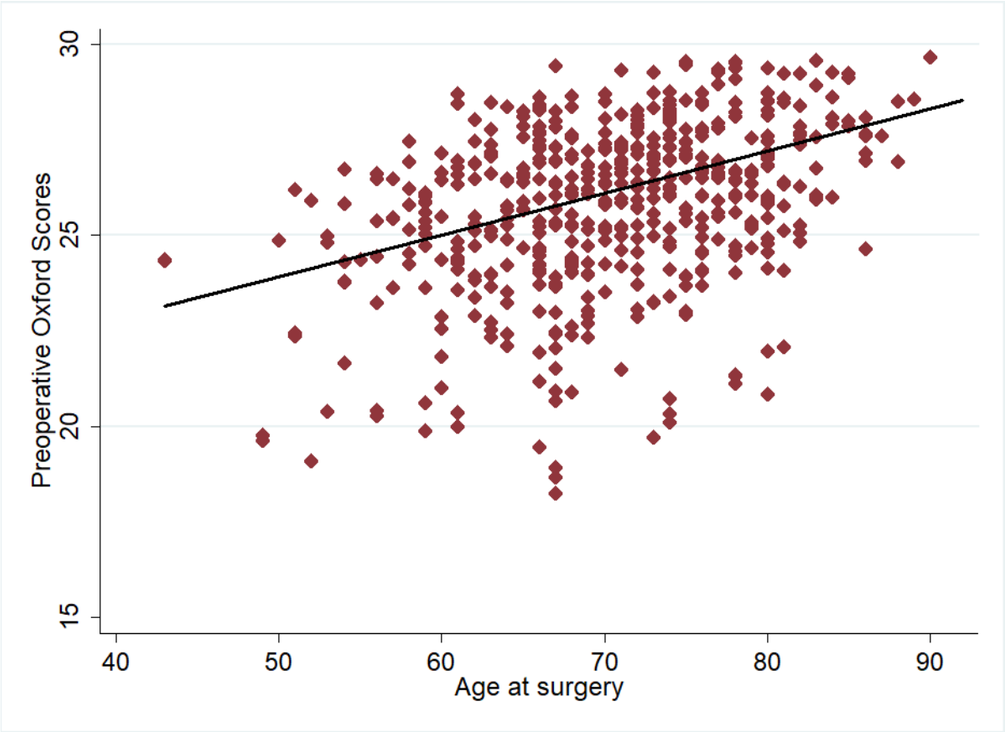
Normal 96 (8%), Valgus 239 (21%), Varus 823 (71%)

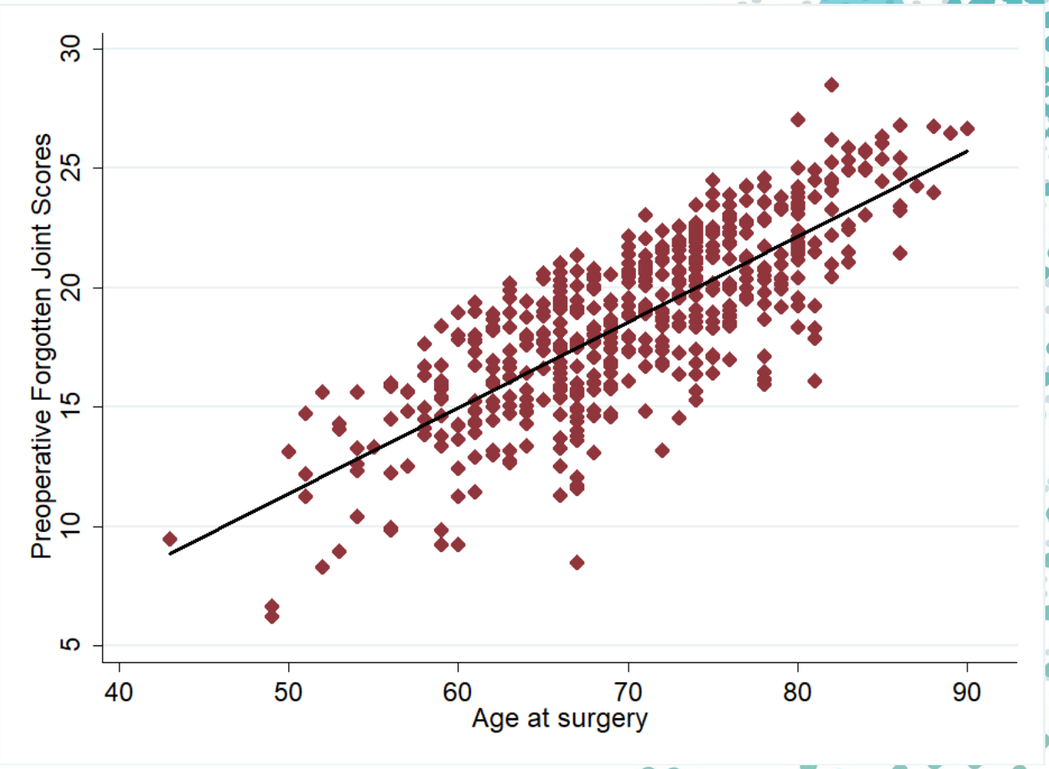
Cohort summary (n=1723)

Average scores at each timepoint	Preop	3 months	1 year	P value	MCID
Oxford score (OKS)	26.1 ±7.5	-	42.4 ±6.0	<0.001	5
Forgotten Joint Score (FJS)	18.5 ±16.3	-	67.4 ±25.9	<0.001	16.6
VR 12 Physical health (PCS)	33.0 ±9.3	-	47.6 ±9.4	<0.001	4.5
VR 12 Mental health (MCS)	55.3 ±10.8	-	54.6 ±9.0	0.03	6.3
Medical care satisfaction (0-100)	-	88.1%	90.7%	0.57	85-90%
Knee Normality score (0-100)	-	70.8%	82.4%	<0.001	Not reported
Visual Analogue Scale (VAS)	-	24.6 ±22.6	14.8 ±22.2	<0.001	15

Data presented as means and standard deviations
MCID stands for minimally clinically important difference as reported in other studies that have analysed PROMS in similar age cohorts

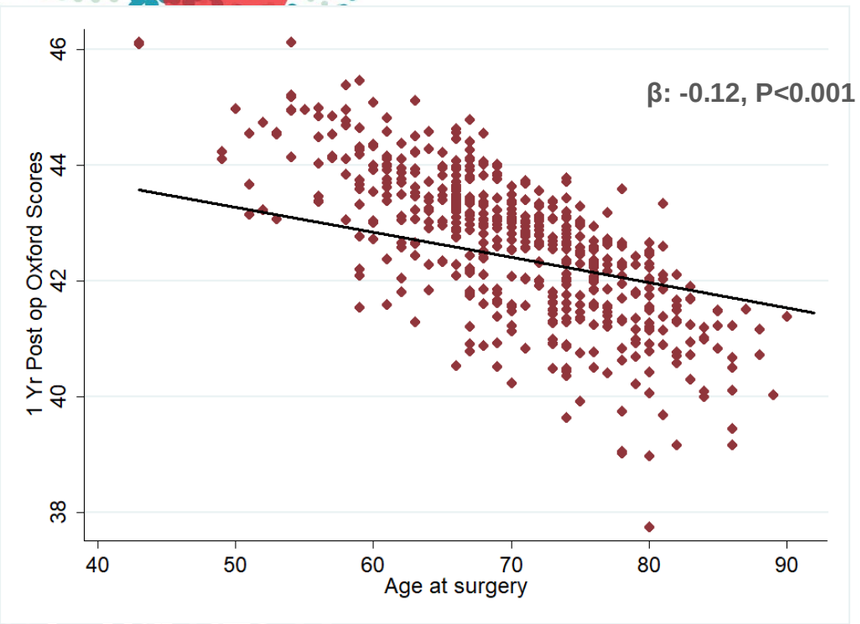
Results: Associations between age and OKS, FJS and VR 12 scores preoperatively

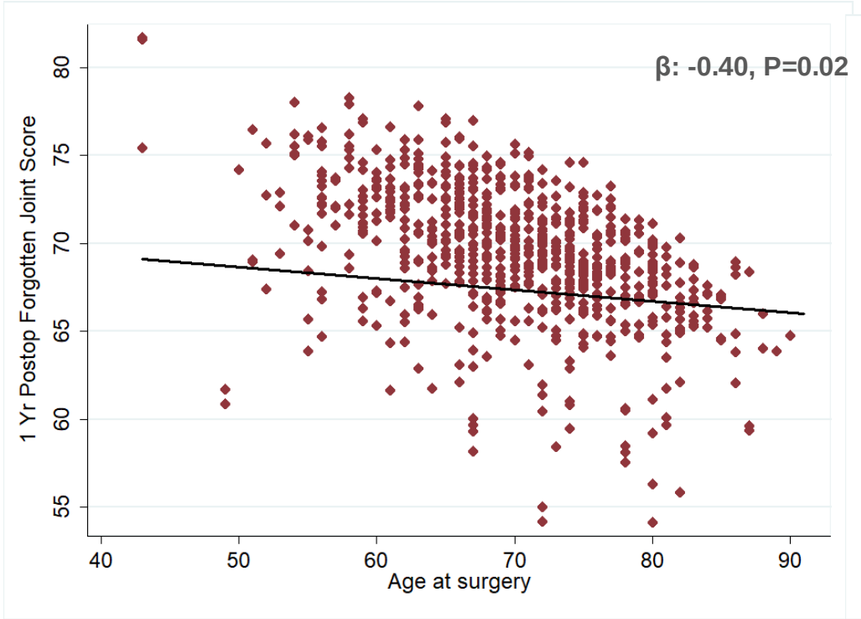


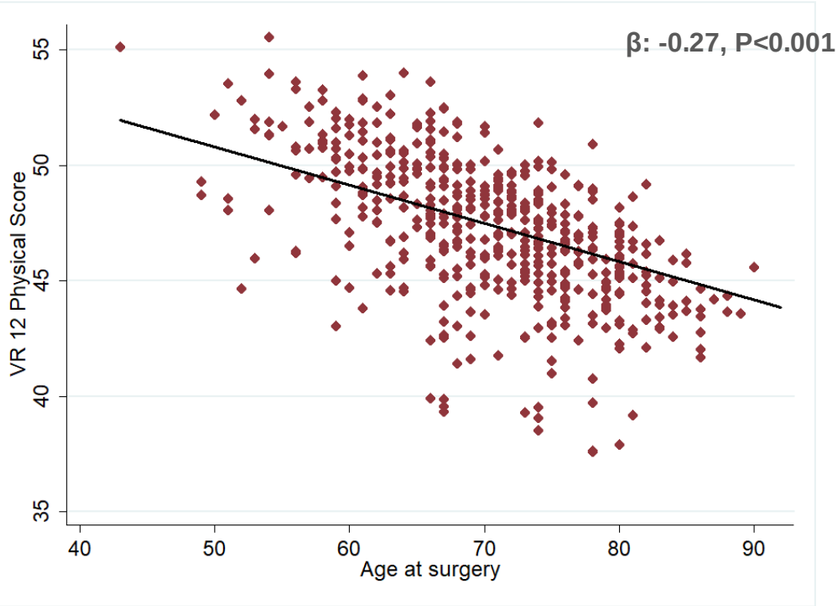


- No significant association preoperative OKS and age (B = 0.06, p = 0.14)
- Forgotten Joint Score (FJS) increased with age, suggesting that older patients were less aware of their degenerative joint

Results: Associations between age and OKS, FJS and VR 12 Physical scores 12 months after surgery

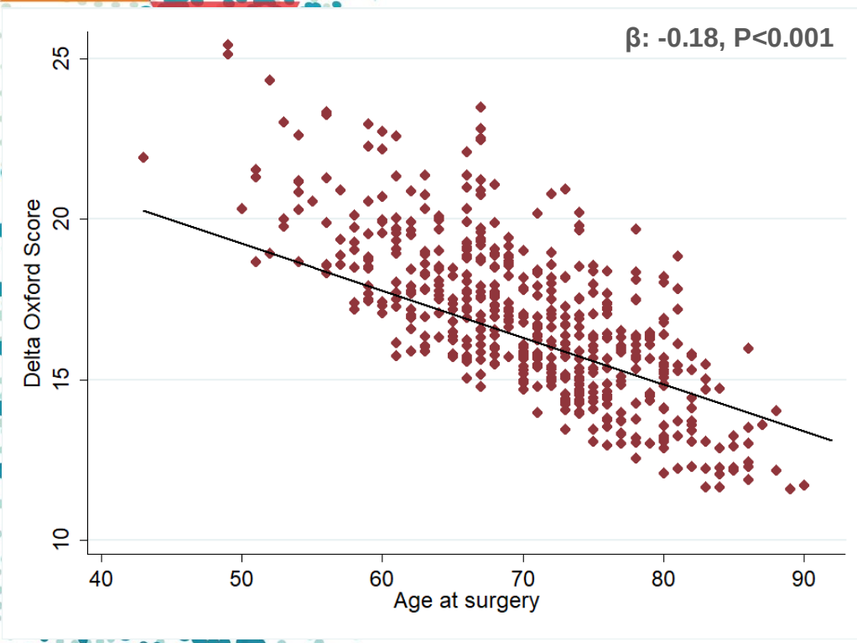


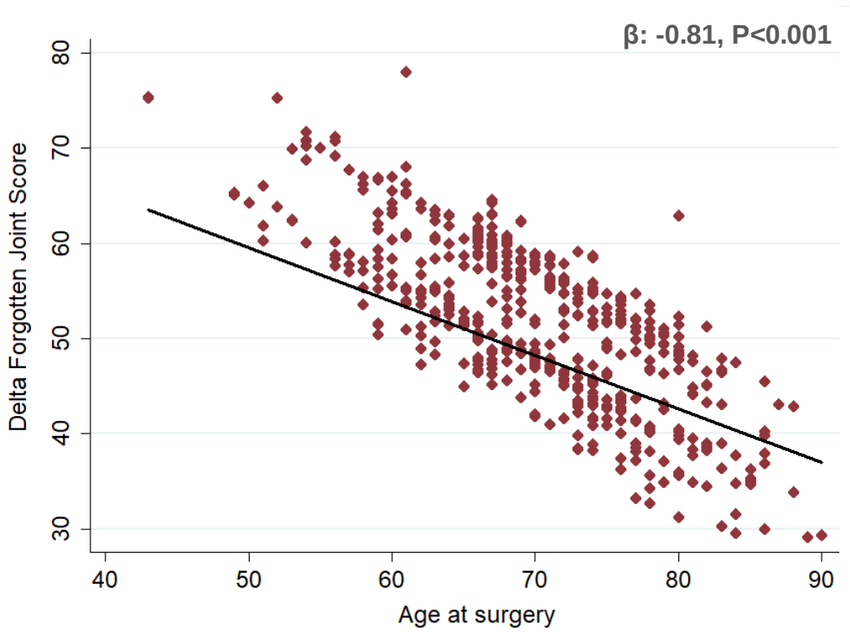


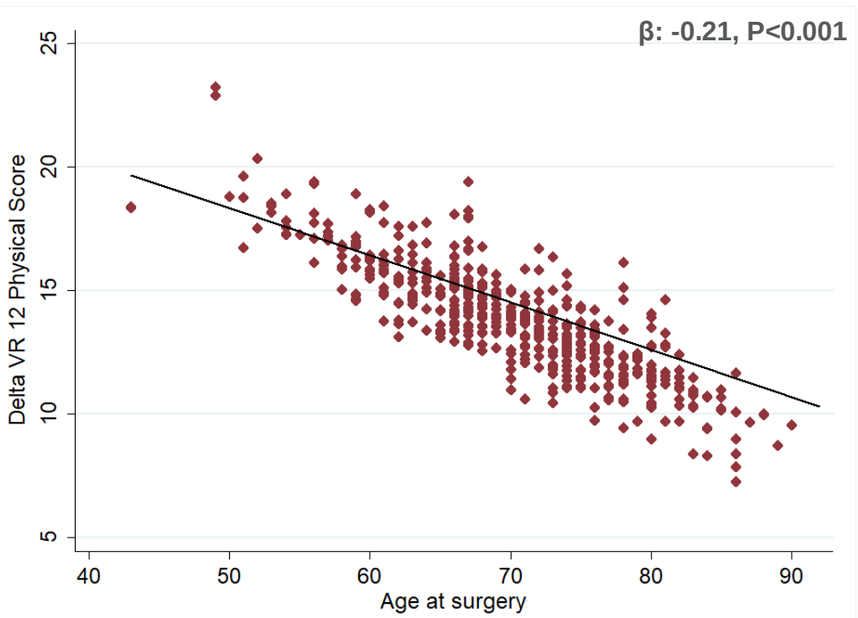


- Increasing age associated with lower OKS (-0.12), VR12 PCS (-0.27) and FJS score (-0.40)
- Once adjusted for covariates: patient satisfaction, knee normality, VAS, and Mental health score were not associated with age

Results: Associations between age and delta OKS, FJS and VR 12 Physical scores







- Younger patients experienced greater improvements in knee function and better physical health in comparison to older patients after TKA

Result summary

- Overall, all PROMs improved after TKA
- There was an improvement in patient satisfaction and knee normality
  - not associated with age after adjusting for covariates
- Significant improvements observed within one-year post-surgery in OKS (16.3), FJS (48.9), VR12 Physical Health (14.6), patient satisfaction (2.6), knee normality (11.6), and VAS (-9.8)
  - all met the MCIDs, but lower in older patients
- Older patients had better preoperative OKS and FJS, but postoperatively, both scores were negatively associated with age
  - suggests that whilst older patients achieve significant improvements, their overall improvement and absolute scores are less than younger patients

Conclusion

- Whilst older patients have lower scores post TKA, they achieve significant improvements in knee function and physical health, and have equivalent levels of patient satisfaction, knee normality, VAS scores, and mental health

- Older patients should be given the same consideration to receive the benefits of TKA as younger patients

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