

# Patient Characteristics and Factors Affecting Decision-Making Regarding Total Knee Replacement by Different Types of Physicians Treating Patients with Knee OA

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### Background

- Total knee replacement (TKR) is an effective knee osteoarthritis (OA) treatment and a commonly performed orthopedic procedure that relieves pain and improves function and quality of life<sup>1</sup>
- Up to 20% of patients do not achieve good clinical outcomes,<sup>2</sup> and comorbidities may limit surgical candidacy<sup>3,4</sup>
- The objective of this analysis was to identify the percentage and distribution of TKR surgical candidates across specialties (rheumatologists [RH], orthopedic surgeons [OS], sports medicine [SM] physicians, and pain specialists [PS]) to gain insight into patient characteristics that influence TKR candidacy

### Discussion and Conclusions

- Predominant reasons for TKR noncandidacy were well-controlled knee OA symptoms (65%) and patient preference (29%), which, in addition to usual patient factors, were considered for TKR decision-making
- The pattern of reasons for TKR noncandidacy was broadly similar across physician types; however, pain specialists had a higher percentage of patients with comorbidities and worse overall health than other specialists. This may have impacted patient preference
- Although causation could not be identified, this analysis showed that a substantial percentage of patients were not TKR candidates, highlighting the importance of patient factors in knee OA management and identifying a potential need for effective nonsurgical treatments

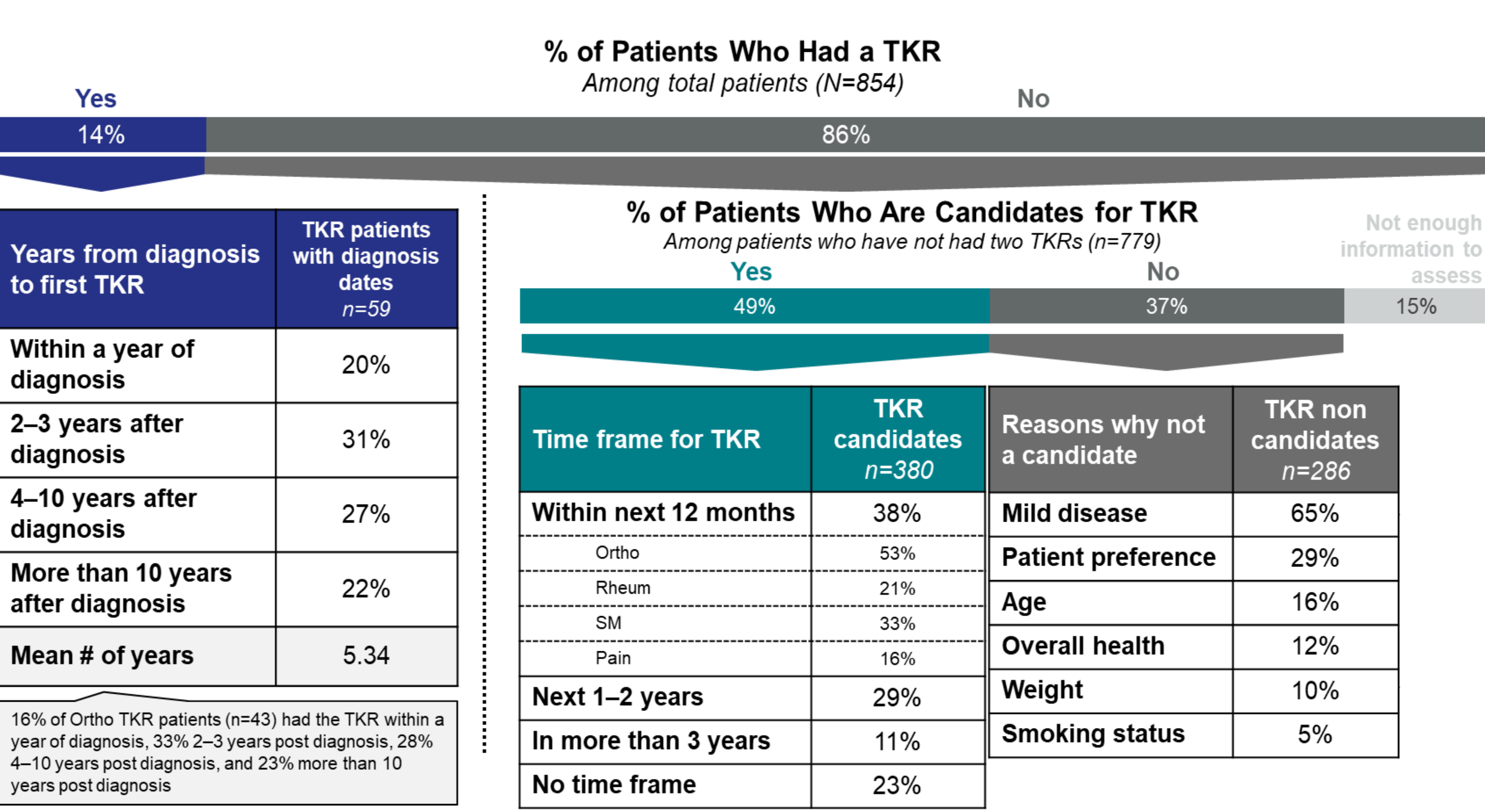
## Results

Table 1. Demographic and Clinical Characteristics Stratified by Diagnosing Physician

	Total Patients N=854	Ortho Surgeons (OS) n=352	Rheumatologists (RH) n=250	Sports Medicine (SM) n=152	Pain Specialists (PS) n=100
Mean age	65.2	65.5 <sup>C</sup>	65.4 <sup>C</sup>	63.3	66.3 <sup>C</sup>
65 years of age or older (total)	56% (n=476)	56% (n=198) <sup>C</sup>	58% (n=145) <sup>C</sup>	47% (n=71)	62% (n=62) <sup>C</sup>
Male	49% (n=419)	53% (n=185) <sup>B</sup>	42% (n=106)	51% (n=77)	51% (n=51)
Female	51% (n=435)	47% (n=167)	58% (n=144) <sup>A</sup>	49% (n=75)	49% (n=49)
Mean BMI	30.7	30.2	29.8	33.0 <sup>AB</sup>	31.6 <sup>AB</sup>
BMI ≥35	22% (n=189)	17% (n=61)	18% (n=45)	32% (n=49) <sup>AB</sup>	34% (n=34) <sup>AB</sup>
Not currently employed (total)	59% (n=503)	57% (n=201)	60% (n=150)	52% (n=79)	73% (n=73) <sup>ABC</sup>
- Due to functional dysfunction	7% (n=30)	5% (n=8)	7% (n=10)	5% (n=3)	15% (n=9) <sup>ABC</sup>
Mean pain (0–10 NRS)	5.6	5.5	5.5	5.5	6.5 <sup>ABC</sup>
Bilateral OA (total)	50% (n=428)	41% (n=146)	62% (n=96) <sup>ACD</sup>	49% (n=77)	51% (n=49)
<b>Comorbidities</b>					
Average # of comorbidities	2.6	2.3	2.6 <sup>A</sup>	2.8 <sup>A</sup>	3.2 <sup>AB</sup>
Hypertension	57% (n=485)	59% (n=206)	57% (n=142)	57% (n=87)	50% (n=50)
Obesity	38% (n=326)	33% (n=117)	40% (n=99) <sup>A</sup>	46% (n=70)	40% (n=40)
Hyperlipidemia	33% (n=279)	28% (n=98)	36% (n=89) <sup>A</sup>	41% (n=63) <sup>AD</sup>	29% (n=29)
Type 2 diabetes	25% (n=210)	22% (n=76)	22% (n=54)	33% (n=50) <sup>AB</sup>	30% (n=30) <sup>A</sup>
Chronic back pain	21% (n=182)	17% (n=60)	19% (n=48)	24% (n=36) <sup>A</sup>	38% (n=38) <sup>ABC</sup>
Anxiety/depression	19% (n=160)	17% (n=59)	16% (n=41)	21% (n=32)	28% (n=28) <sup>AB</sup>
CVD	18% (n=155)	18% (n=64)	15% (n=38)	17% (n=26)	27% (n=27) <sup>ABC</sup>

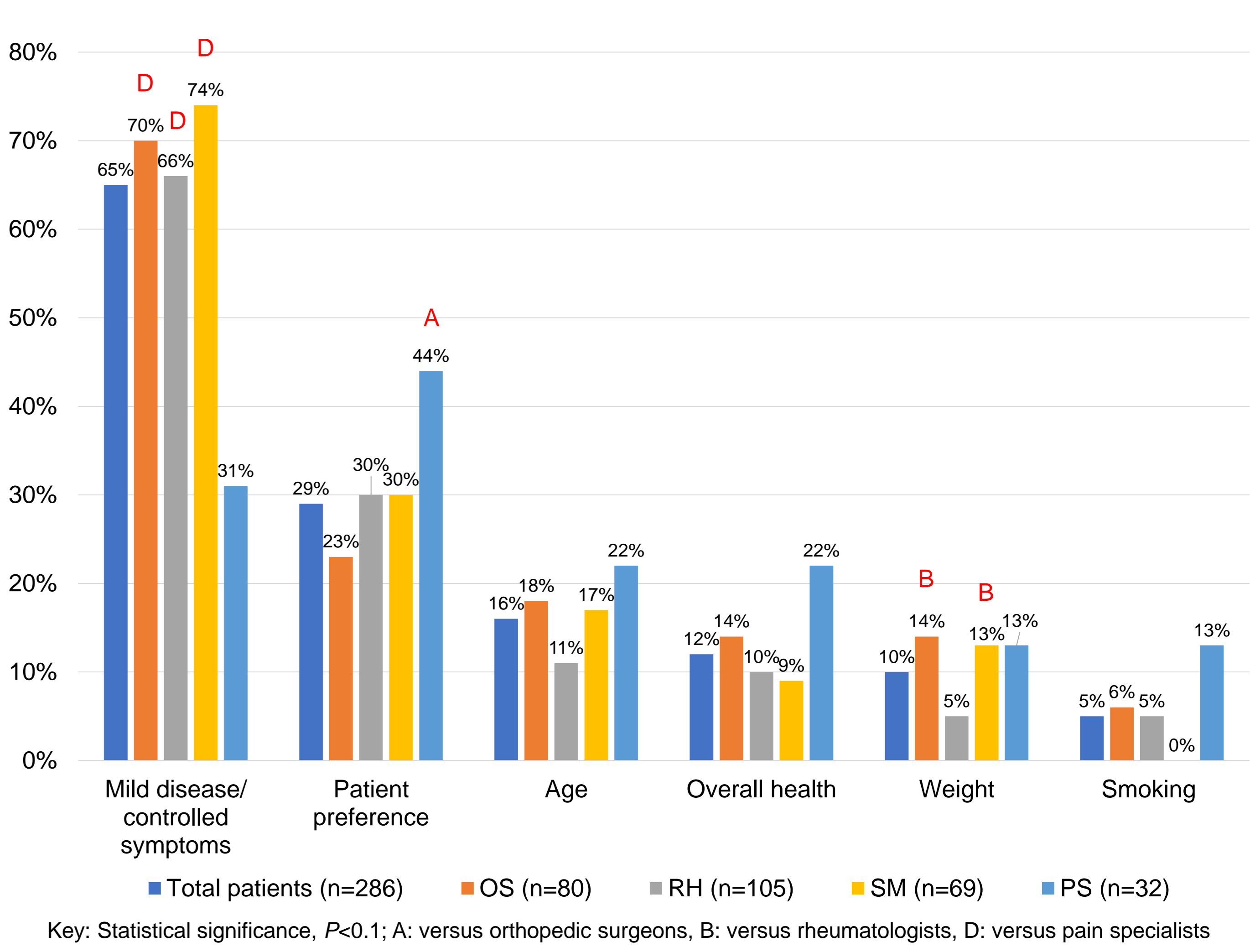
Key: Statistical significance, P<0.1; A: versus orthopedic surgeons, B: versus rheumatologists, C: versus sports medicine physicians, D: versus pain specialists

Figure 1. Patients' Path to TKR



KL grades were assessed in 369 knees (Mean KL grade: 3; KL 1: 10 [2.7%], KL 2: 89 [24.1%], KL 3: 161 [43.6%], KL 4: 109 [29.6%]).

Figure 2. Reasons for TKR Noncandidacy



Key: Statistical significance, P<0.1; A: versus orthopedic surgeons, B: versus rheumatologists, D: versus pain specialists

### Methods

- For this study, which was conducted between March and April 2019, board-certified physicians seeing >10 knee OA patients per week participated in an interview about their 2 most recent knee OA patients. In total, 854 patient charts were reviewed across all specialties. Interviews (structured questions and answers) assessed demographics, comorbidities, time to treatment, TKR candidacy, and reasons for noncandidacy
- Since no patient-identifying information was included, this project was exempt from IRB review/HIPAA consent. As this study was designed to assess multiple characteristics and associated effect modifications, a confidence level of 90% was used<sup>4</sup>

### Limitations

- Limitations include potential selection bias, confounding by risk factors, inability to show causation, small sample size, and missing data
- Reasons for TKR noncandidacy were not mutually exclusive; thus, the predominant reason for noncandidacy was not identified
- TKR timeline was identified before COVID-19

### References

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