

# 1 **Social Determinants of Health, Comorbidities, and Postoperative** 2 **Outcomes Following Total Knee Arthroplasty: A Systematic Review**

3

## 4 **Abstract**

### 5 *Background*

6 Total knee arthroplasty (TKA) is an effective treatment for end-stage knee osteoarthritis;  
7 however, substantial variability persists in post-operative outcome across socioeconomic and  
8 clinical populations. Social Determinants of Health (SDOH) and comorbidity burden are  
9 increasingly recognized as contributors to these disparities.

### 10 *Methods*

11 A PRISMA guided systematic review was conducted and registered with PROSPERO  
12 (CRD420251176132). PubMed, MEDLINE, and Embase were searched through September 10,  
13 2025. Studies published after January 2020 evaluating adult patients undergoing primary TKA  
14 and assessing at least one SDOH or comorbidity were included. Outcomes included patient–  
15 reported outcome measures (PROMs), perioperative resource utilization, complications, revision,  
16 readmission, mortality, and costs. Narrative synthesis was performed using the PROGRESS-Plus  
17 framework. Risk of bias was assessed using ROBINS-I.

### 18 *Results*

19 There were 74 studies that met inclusion criteria. Lower socioeconomic status (SES),  
20 Medicaid insurance, higher neighborhood deprivation, racial/ethnic minority status, treatment at  
21 lower volume hospitals, and elevated comorbidity burden were consistently associated with  
22 prolonged length of stay and worse PROMs.

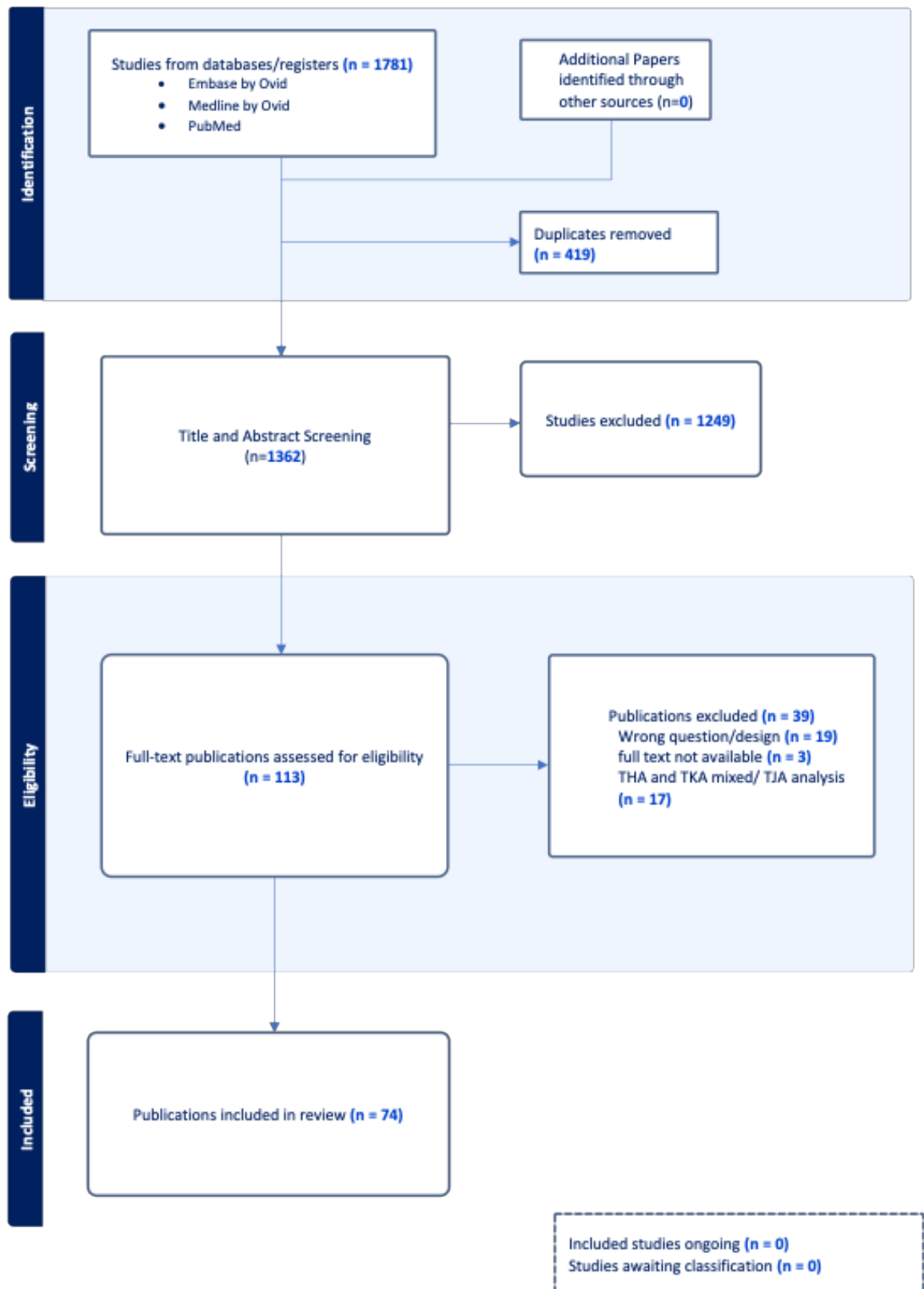
### 23 *Conclusion*

24 Structural inequities and comorbidity burden significantly influence postoperative TKA  
25 outcomes, underscoring the need for integrated social and clinical risk stratification in  
26 perioperative care.

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28 **Key words:** Total Knee Arthroplasty, Social Determinants of Health, Patient reported outcome  
29 measures, Health disparities, Area Deprivation Index, Socioeconomic Status, Postoperative  
30 outcomes

Figure 1 – PRISMA Chart



**Figure 2 – Risk of bias assessment summary table**

