

# Care-Related Activities and Impact on Sleep Disturbances in Total Knee Arthroplasty Patients During the First Postoperative Night

Taylor, M.<sup>1</sup>, Thor, P.<sup>1</sup>, Illescas, A.<sup>1</sup>, Lauzadis, J.<sup>1,3</sup>, Poeran, J.<sup>1</sup>, Memtsoudis, S.<sup>1,2</sup>, Kalsi, M.S.<sup>1</sup>, Jules-Elysee, K.M.<sup>1,2</sup>

<sup>1</sup>Department of Anesthesiology, Critical Care, & Pain Management, HSS, <sup>2</sup>Department of Anesthesiology, Weill Cornell Medicine, <sup>3</sup>Pain Prevention Research Center, Hospital for Special Surgery

Environmental factors may contribute to disrupted sleep during the first postoperative night.

## INTRODUCTION

Total Knee Arthroplasty (TKA) patients are visited multiple times during their hospital stay for postoperative care activities such as monitoring vital signs, administering analgesics, and evaluating wound healing. While these activities are essential to ensuring a complete recovery, they can disturb the patient's rest and overall recovery.

Understanding how these factors impact patients' sleep during the first night after surgery is crucial for optimizing patient health and recovery outcomes.

## OBJECTIVE

The objective of this analysis was to describe sleep characteristics on the first postoperative night.

## METHODOLOGY

- 114 TKA patients were enrolled from March 2021 – October 2023 (HSS IRB#2019-1416 and NCT04734080)
- In the PACU, patients were connected to the ActiLife Wgt3x-BT actigraph wrist device
- Overnight (22:00-6:00) sleep characteristics were measured

## KEY FINDINGS

**Table 2. Sleep Data on Postoperative Night 1**

Variables	Median [IQR]
Number of sleep cycles	3 [2-4]
Total sleep time, minutes	247 [186-306]
Total minutes in bed	276 [219-329]
Sleep efficiency	89.5 [85.6-93.4]
Number of awakenings	9 [5-12]
Number of awakenings (for medication)	1 [0-2]

**Table 1. Subject Demographics**

<b>Gender, N (%)</b>	
Male	39 (45.9)
Female	46 (54.1)
<b>Age, Mean (SD)</b>	
	61.7 (5.4)
<b>Race, N (%)</b>	
Asian	4 (4.7)
Black or African American	7 (8.2)
White	70 (82.3)
Other/Decline to Answer	4 (4.7)
<b>Ethnicity, N (%)</b>	
Hispanic or Latino	4 (4.7)
Not Hispanic or Latino	77 (90.6)
Unknown/Declined to Answer	4 (4.7)
<b>ASA, N (%)</b>	
1	1 (1.2)
2	82 (96.5)
3	1 (1.2)
Missing	1 (1.2)

## CONCLUSIONS

Our analysis found that TKA patients experienced a median of 9 awakenings on the first postoperative night. Previous studies have identified pain as the main cause of sleep disturbances; however, there could be additional environmental factors such as nursing interventions, noise from shared recovery rooms, acute health issues, or room services. Future studies should focus on balancing the importance of these potential disruptors against the positive impact of quality sleep on the recovery process.