

Introduction and Background

Postoperative delirium (POD) usually impacts elderly patients following surgical procedures, with an occurrence of cases varying between 10% and 50%, depending on the kind of surgery and patient characteristics (Jin et al., 2020; Daiello et al., 2019). This condition may result in prolonged hospitalizations, increased risk of morbidity and long-term cognitive impairment (Wilson et al., 2020). Furthermore, postoperative cognitive dysfunction (POCD) may persist for many months, severely impacting patients' quality of life (Brodier et al., 2021). Research indicates that using screening tests for early detection and management of POD may improve patient outcomes (Bilotta et al., 2021).

Risk Factors for POD and POCD:

- Advanced age (Jin et al., 2020).
- Pre-existing cognitive impairment (Wilson et al., 2020).
- Type of surgery and anesthesia used (Daiello et al., 2019).
- Surgery length and post operative complications (Jin et al., 2020; Brodier et al. 2021).

Screening Tools Overview:

1. Mini-Cog Test
 - Combines a 3-item recall and a clock-drawing test.
 - Quick and simple for initial screening.
 - Time: ~3 minutes (Wilson et al., 2020).
2. Montreal Cognitive Assessment (MoCA)
 - Comprehensive test assessing memory, attention, and visuospatial abilities.
 - Time: ~10–15 minutes; requires trained personnel (Daiello et al., 2019).
3. Clock-Drawing Test (CDT)
 - Measures executive function and visuospatial skills.
 - Can be used independently or as part of Mini-Cog.
 - Time: ~5 minutes (Wilson et al., 2020).
4. Confusion Assessment Method (CAM)
 - Considered the gold-standard tool for delirium detection.
 - Evaluates acute onset, inattention, disorganized thinking, and altered consciousness.
 - Proven to be effective in perioperative and postoperative settings (Bilotta et al., 2021).

Screening Process

- 1- Initial Screening: Use Mini-Cog or CDT for all elderly patients during preoperative evaluation (Wilson et al., 2020).
- 2- Comprehensive Assessment: For patients with high-risk, use MoCA for detailed cognitive evaluation (Daiello et al., 2019).
- 3- Delirium Confirmation: Use CAM to confirm POD in symptomatic patients (Bilotta et al., 2021).

Table 1

Comparison of Screening Tools: Time, Sensitivity, Specificity, and Usage ((Wilson et al., 2020; Jin et al., 2020; Bilotta et al., 2021, Brodier et al., 2021).				
Test	Time Required (Min)	Sensitivity (%)	Specificity (%)	Usage
Mini-Cog	3 minutes	76	89	Quick Screening
MoCA	10-15 minutes	90	87	Comprehensive test
CDT	5 minutes	60-80	85	Spatial assessment
CAM	Varies	98	90	Delirium conformation

Note: This table compares frequently used cognitive screening tools based on their duration, their accuracy (sensitivity and specificity), and their usage in practice. It shows that CAM is highly reliable for confirming delirium, MoCA is great for a detailed cognitive assessment, and Mini-Cog is a quick and convenient option for initial screening.

Clinical Implications

By integrating established screening tools, such as CAM, into routine surgical procedures, clinicians may help in improving patient safety and reduce healthcare expenses (Bilotta et al., 2021; Wilson et al., 2020). A multimodal strategy that includes non-pharmacological and pharmacological therapies, such as cognitive involvement and better anesthesia care, are particularly helpful in preventing POD (Brodier et al., 2021; Wilson et al., 2020). Furthermore, the education of healthcare professionals on perioperative cognitive care is essential for promoting early identification and improved therapy of cognitive issues (Wilson et al., 2020).

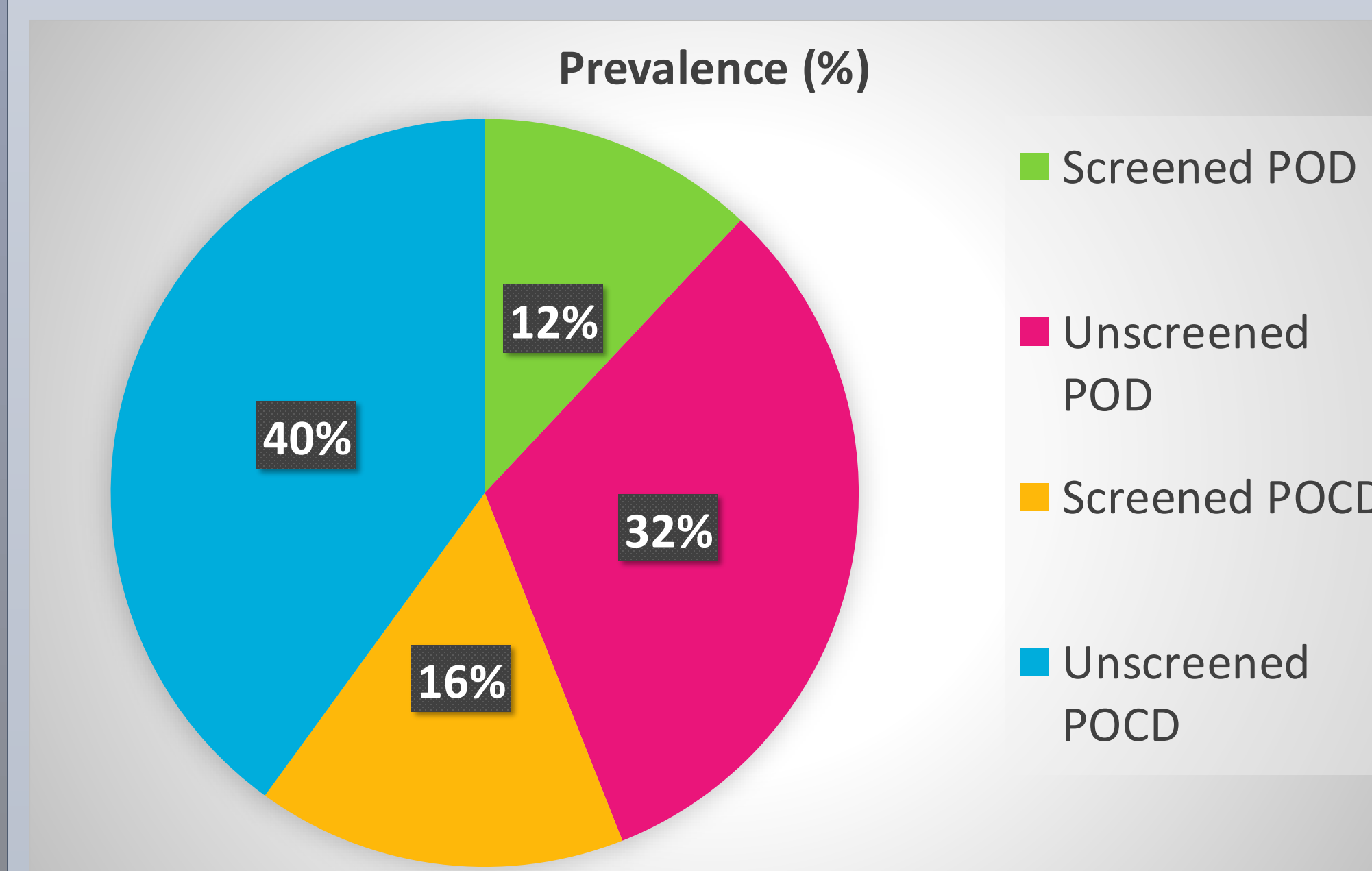


Figure 1: Prevalence of POD and POCD in screened versus unscreened populations (Wilson et al., 2020).

Comparison of Sensitivity and Specificity of Screening Tools.

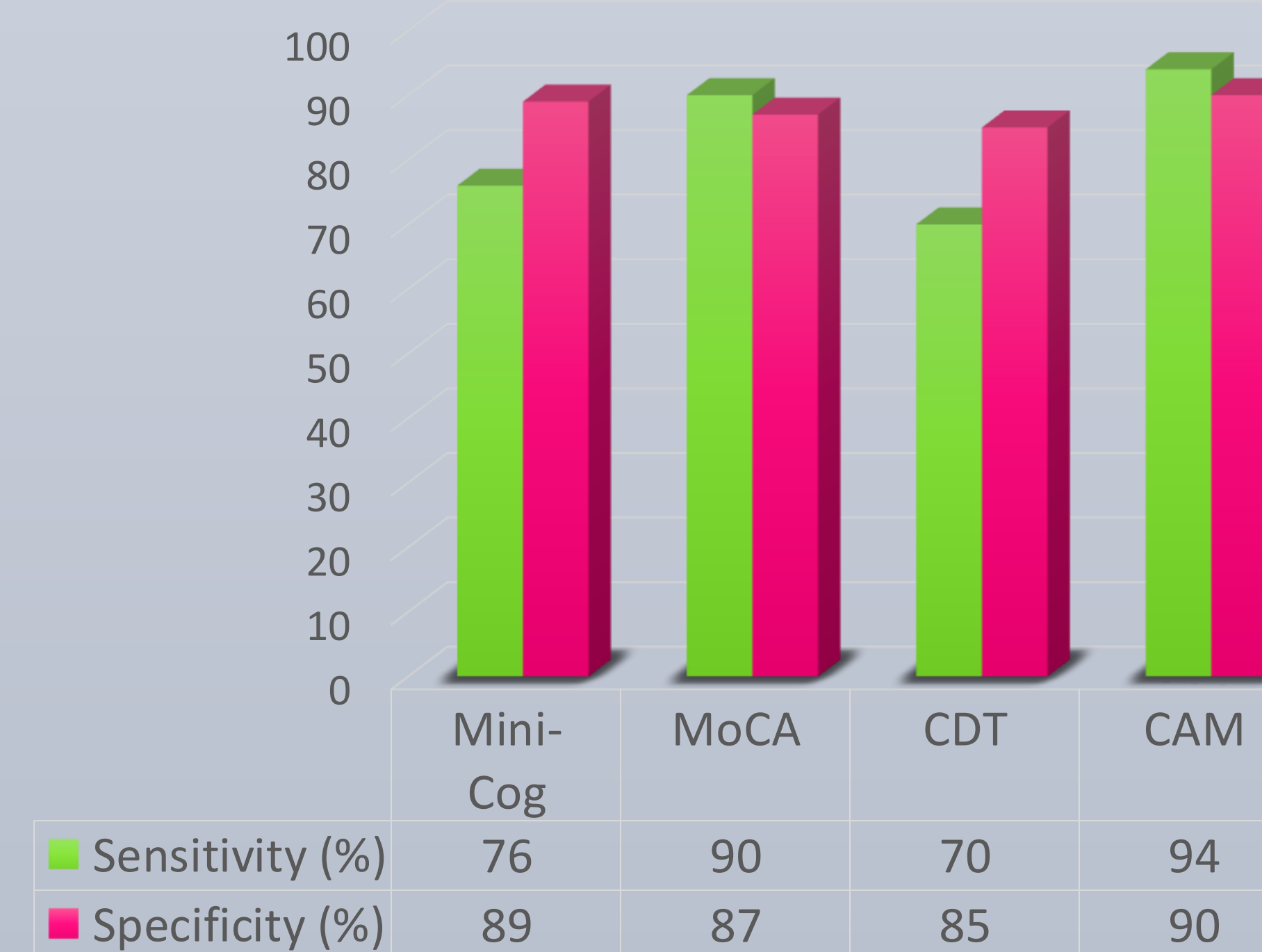


Figure 2: Bar graph comparing sensitivity and specificity of screening tools (Jin et al., 2020; Bilotta et al., 2021).

Conclusion

Early and thorough cognitive assessment is essential for diminishing the occurrence of postoperative delirium (POD) and improving surgical outcomes (Daiello et al., 2019). Screening tools like the Mini-Cog and CAM have demonstrated significant reliability in detecting POD among diverse patient groups (Bilotta et al., 2021; Wilson et al., 2020). Moreover, preoperative interventions that focused on alleviating risk factors, such as the optimization of anesthesia and perioperative treatment, are crucial for diminishing the probability of both postoperative delirium (POD) and postoperative cognitive dysfunction (POCD) (Brodier et al., 2021; Jin et al., 2020).

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