

Patient Perceptions of Technology Use in Pre-Operative Planning for Tibial Plateau (Knee) Fractures: A Survey Study

Introduction: The development and use of digital tools and 3D technologies in preoperative planning of articular fracture fixation around the knee is becoming increasingly common. However, little is known about how patients perceive their use in surgical decision-making. This study assessed the attitudes of patients with tibial plateau (knee) fractures requiring definitive fixation towards the use of fracture analysis and preoperative planning software in their surgery.

Methods: A brief survey was used to evaluate patient comfort, perceived usefulness, and trust in technology-assisted preoperative planning. The survey was administered to adult patients undergoing tibial plateau fracture fixation surgery at a single institution. Preoperative planning was defined for patients as the use of the digital tool such as 3D imaging, virtual reconstruction, and software-based analysis of fracture constructs to help the surgeon understand the fracture pattern and plan fixation strategies.

Results: Patients expressed strong openness to the use of advanced pre-operative surgical planning tools. All respondents indicated they were very likely to allow their surgeon to use pre-operative planning software in their surgery and believed that technology would have positive outcomes on their surgery. They believed that pre-operative planning software would improve their surgeon's ability to treat their fracture. Most patients (67%) believed that pre-operative planning software would improve their outcomes, while the remainder were neutral.

Conclusions: Patients with complex peri-articular fractures around the knee overwhelmingly support the incorporation of digital tools and planning software into surgical care. Surgeons should remain assured that patient confidence technology-assisted preoperative planning is high, and increasing technological integration is likely to be viewed positively by patients.