

Exploring the role of visuospatial processes in surgical skill acquisition: A longitudinal study

Tina Vajsbahe

University of Bremen, Bremen, Germany

Holger Schultheis

University of Bremen, Bremen, Germany

Verena Uslar

University of Oldenburg, Oldenburg, Germany

Dirk Weyhe

Pius-Hospital Oldenburg, Oldenburg, Germany

Hseyin Bektas

Klinikum Bremen-Mitte, Bremen, Germany

Nader Francis

Yeovil District Hospital, Yeovil, United Kingdom

Abstract

Surgical error is the most frequent and costly type of medical error, posing a direct threat to patient safety. Surgical errors have been described as a 'cognitive phenomenon', as it is largely the shortcomings of the surgeons cognitive processing that leads to error. In laparoscopic surgery, visuospatial processes are known to be crucial for skill acquisition, although it remains unclear as to which exact processes are important, how these develop over time and intraoperatively, and how they influence competency development. We will report interim spatial cognitive baseline results of 35 surgeons, 17 residents and 18 specialists, taking part in an on-going longitudinal study at two major hospitals in Germany. Our results offer new insight into the role of visuospatial cognition in domain-specific expertise, and shed new light on the malleability of visuospatial processes in the skill acquisition process.