

## Practice, training and safety of laparoscopic surgery in low and middle-income countries

Maryam Alfa-Wali, Samuel Osaghae

Maryam Alfa-Wali, Epsom and St Helier University Hospitals, Wrythe Lane SM5 1AA, United Kingdom

Samuel Osaghae, University of Benin Teaching Hospital, Benin City, Nigeria

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**Correspondence to:** Dr. Maryam Alfa-Wali, Epsom and St Helier University Hospital, Wrythe Lane SM5 1AA, United Kingdom. [malfa5@icloud.com](mailto:malfa5@icloud.com)  
Telephone: +44-208-2962000  
Fax: +44-137-2735048

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### Abstract

Surgical management of diseases is recognised as a major unmet need in low and middle-income countries

(LMICs). Laparoscopic surgery has been present since the 1980s and offers the benefit of minimising the morbidity and potential mortality associated with laparotomies. Laparotomies are often carried out in LMICs for diagnosis and management, due to lack of radiological investigative and intervention options. The use of laparoscopy for diagnosis and treatment is globally variable, with high-income countries using laparoscopy routinely compared with LMICs. The specific advantages of minimally invasive surgery such as lower surgical site infections and earlier return to work are of great benefit for patients in LMICs, as time lost not working could result in a family not being able to sustain themselves. Laparoscopic surgery and training is not cheap. Cost is a major barrier to healthcare access for a significant population in LMICs. Therefore, cost is usually seen as a major barrier for laparoscopic surgery to be integrated into routine practice in LMICs. The aim of this review is to focus on the practice, training and safety of laparoscopic surgery in LMICs. In addition it highlights the barriers to progress in adopting laparoscopic surgery in LMICs and how to address them.

**Key words:** Laparoscopic surgery; Global surgery; Low and middle-income countries; Laparoscopic training; Patient safety; Laparoscopy; Minimally invasive surgery

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**Core tip:** The rate of laparoscopic surgery in low and middle-income countries (LMICs) is gradually increasing. In this review we highlight the practice of laparoscopic surgery in LMICs from diagnostic procedures to complex resections. Training in laparoscopic surgery is inherently variable in LMICs, however innovative teaching methods with inexpensive materials have been developed. Safety data on laparoscopic surgery in LMICs is minimal and more research needs to be done. It is essential to establish safe practices that must be contextualized to serve the population in various LMICs.









