

Category :**ICU organization**

A195 - Impact of the box-trainer in applying ergonomic principles for minimally invasive surgery

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Introduction:

Minimally invasive surgery constituted the source for professional illnesses among surgeons due to ergonomic problems. The aim of this study was to investigate the impact of the box-trainer in applying ergonomic guidelines for minimally invasive surgery.

Methods:

Our study was a prospective, transversal, and evaluative study realized at the department of surgery, Mahmoud El Matri hospital, during the period between January 15th and February 15th, 2020. Volunteered-surgical resident trainees were recruited for this study. Low-cost box-trainer was used. Evaluative score was calculated after peg transfer task in optimal ergonomic settings then in non-optimal ergonomic settings. The principal judgment criterion was the difference between the scores.

Results:

First- and second-year participants accounted for 57% of all participants. Ten participants (33%) had no experience with minimally invasive surgery simulation. Twenty-two participants (73%) weren't aware about ergonomic principles. None of the participants had experienced ergonomic-dedicated simulations in minimally invasive surgery. The mean score obtained after peg transfer in optimal ergonomic settings was 107.0 (extremes : 19 and 220) versus 54.8 (extremes : 0 and 191) in non-optimal ergonomic settings. The difference was 39.6 in median (extremes: 7.3 and 70.1) with a statistically significance. Multi variant analysis retained only the resident year as an independent factor associated to the accomplished scores after comparison of the scores reached by first- and second-year residents versus those of third-, fourth-, and fifth-year residents.

Conclusion:

The impact of the box-trainer was the awareness rise about the importance of ergonomics in minimally invasive surgery, the application of these concepts, and the work environmental enhancement allowing better security for both sanitary staff and patients.