



Prevalence of Musculoskeletal Pain Among Surgeons in Sub-Saharan Africa



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01. Introduction

Surgical ergonomic studies to date originate mostly from high-resource settings. Some studies report the prevalence of work related musculoskeletal (MSK) pain among surgeons as high as 93%, with up-to 77% of them reporting pain in multiple sites of the body. The most commonly affected sites are the neck and lower back. [1]. This is a silent epidemic that cuts across specialties and affects all surgeons regardless of whether their approach to the craft is minimally invasive, robotic or open [1,2].

Many surgeons have had to reduce their working hours due to musculoskeletal pain [3]. A major contributing factor is the fact that there is little emphasis on the concept of surgical ergonomics during most surgical training programs, with as few as 20% of surgeons reporting that they received training on ergonomics during residency [4]. The fact that many surgeons are hesitant to complain about pain for fear of showing weakness only furthers the problem [4].

The prevalence of work-related MSK pain and associated factors among sub-Saharan Africa (SSA) surgeons is poorly understood. It is unclear whether the operating conditions specific to SSA would affect the prevalence of MSK pain, for example: most surgeries are performed open, rather than laparoscopic; and surgical robots are rarely available. This is the largest study to-date on this topic in this part of the world.

02. Objectives

The primary outcome being analysed was frequency, site and severity of musculoskeletal pain.

The secondary outcome was the factors contributing to pain.

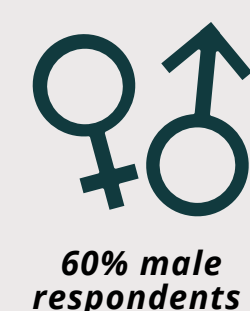
03. Methodology

We administered a questionnaire, based on previously validated studies, to surgeons practicing in Africa. Data collected included location, timing and severity of pain on a scale of 1-10, and associated factors including previous injury, previous training in ergonomics, exercise, percent of minimally invasive surgery performed, and use of adjuncts such as loupes or operating microscope.

A total of 101 individuals participated by filling an anonymous questionnaire on REDcap.

04. Results

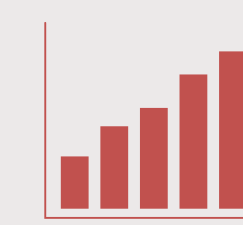
Respondents:



60% male respondents

40 yrs

Average age



35 operations/month and 3 OR days/week

Most were practicing surgeons, with 27% being residents and 72% being consultant surgeons.

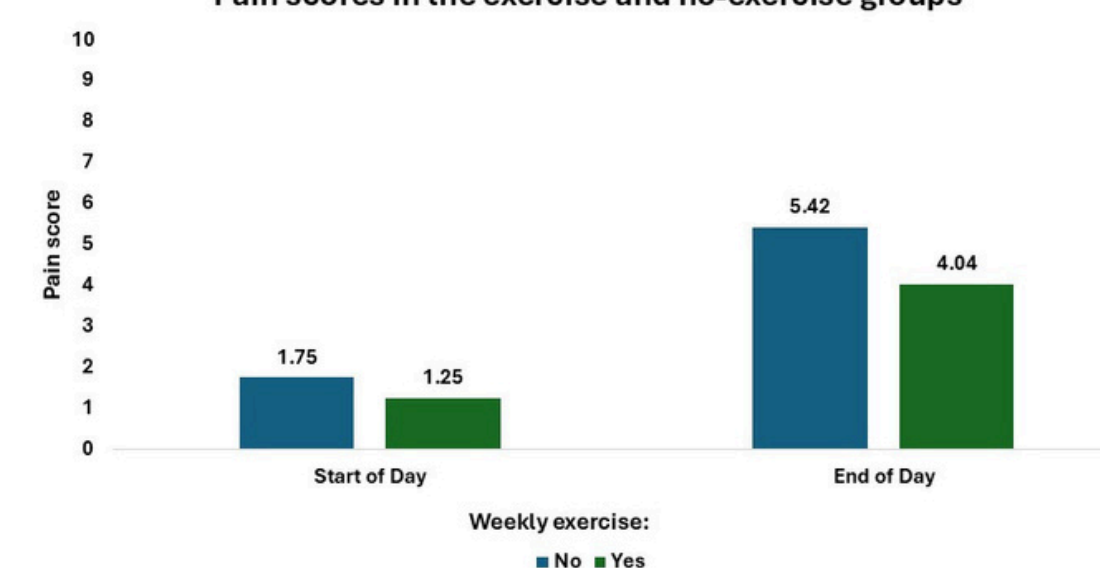
89% reported no comorbidities and 63% exercised regularly.

Only 26% had received ergonomic training at any point in their careers.

Key Findings:

- **The most-commonly reported site of pain was the low back (56%)** followed by the neck and high back (36% each).
- **94% reported work-related pain** at the end of their OR days and 29% had limited their operative work due to pain.
- **Surgeons who exercise regularly reported lower pain scores** than those who do not (4.04 vs 5.42, $p=0.0164$).
- **Female surgeons reported higher pain scores** than their male counterparts (4.1 vs 5.5, $p=0.01$).

Pain scores in the exercise and no-exercise groups

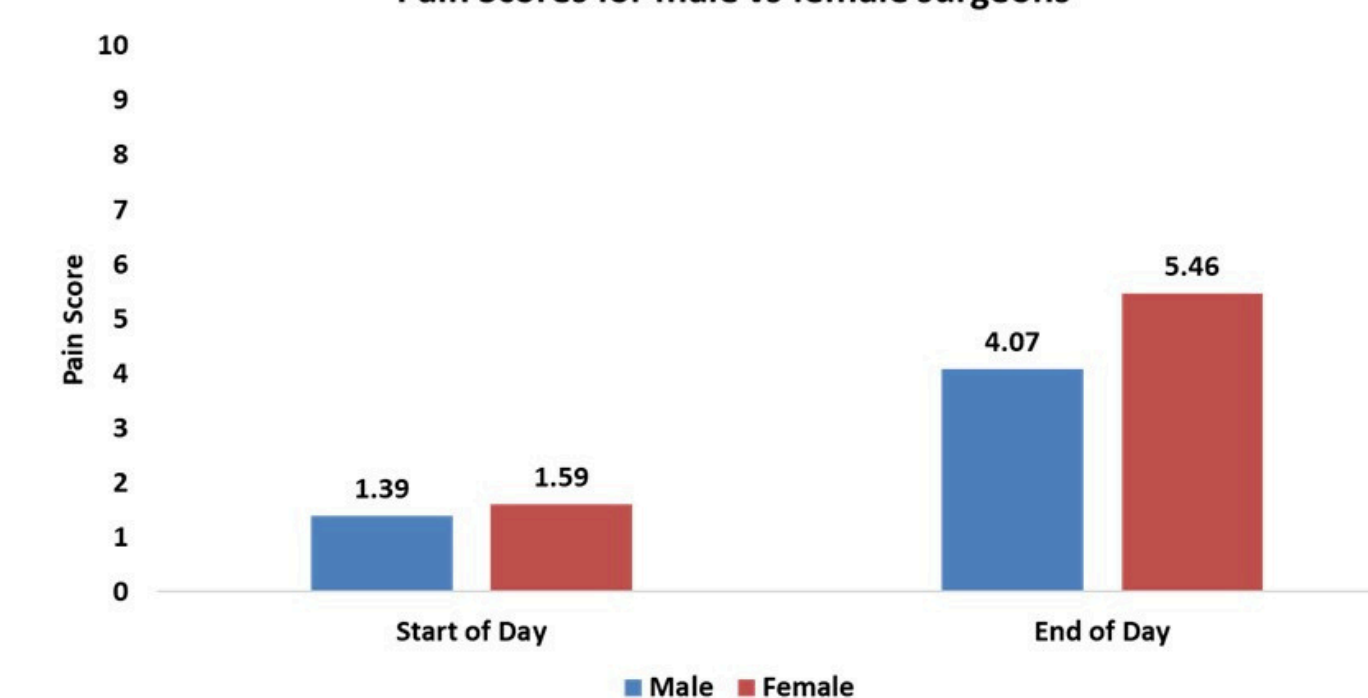


Additionally, there were minimal difference in pain scores when comparing different specialties and primary vs assistant surgeons.

Higher pain scores were reported for:

- Those who perform open surgeries
- Those who hadn't received ergonomics training
- Those operating more than 3 days a week

Pain Scores for male vs female surgeons



05. Conclusion

- Reported musculoskeletal pain is similar in prevalence to industrialized countries, with similar contributing factors and protective factors.
- Surgeons experience an unacceptable amount of work-related pain.
- Education in ergonomics among SSA surgeons is limited and needs to be instituted to prevent work-place related injury among surgeons.
- More research is needed to explore factors in reducing work-related pain.

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06. References

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