

Study finds no differences in performance between male and female surgeons

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A new study published by *The BMJ* today finds no differences in rates of death or complications between male and female surgeons in Japan, despite the fact that female surgeons are more likely than male surgeons

to be assigned high-risk patients.

The researchers point out that globally, women remain a minority in the surgical field, and they call for more opportunities for [female surgeons](#), to help reduce gender-based [inequity](#).

Although the number of female physicians has been increasing worldwide in recent years, women remain a minority in the surgical field.

For example, female general surgeons accounted for 28% (in 2019), 22% (in 2019), and 33% (in 2017) of surgeons in Canada, the U.S. and the UK, respectively. In Japan, the proportion of female physicians is 22%, and the proportion of female surgeons is even lower at 5.9%.

Yet previous studies in the U.S. and Canada showed that the [proficiency](#) of female physicians and surgeons was equal to or better than that of their male counterparts.

To explore this further, researchers used the Japanese National Clinical Database (NCD), which includes data on over 95% of surgeries performed in Japan, to compare the surgical outcomes of female and male surgeons from 2013 to 2017.

They also examined the relation between postoperative mortality (within 90 days of [surgery](#)) and surgical complication rates (within 30 days of surgery) and the surgeon's licensing terms.

They focused on three common procedures for stomach and rectal cancer: distal gastrectomy, total gastrectomy, and low anterior resection. These were chosen because the number of female surgeons who did these surgeries was sufficient for analysis without the individual surgeon being identified.

Their analysis included 149,193 distal gastrectomy surgeries, 63,417 gastrectomy surgeries, and 81,593 low anterior resection procedures.

The researchers found that female surgeons performed only 5% of these procedures and that female surgeons were less likely than male surgeons to work in high-volume centers.

Female surgeons were more likely than male surgeons to be assigned high-risk patients (those who were malnourished, on long-term steroids, or with higher-stage disease).

But despite this, the researchers found no overall differences in the rates of death or surgical complications between male and female surgeons, after taking account of other patient-related factors.

On average, female surgeons also had fewer post-registration years, and did fewer minimally invasive (keyhole) surgeries than male surgeons.

The researchers suggest this could be due to reduced training opportunities linked to preferential treatment of male trainees and the competing demands of women's traditional societal roles, including raising a family.

This is an observational study, so no firm conclusions can be drawn about cause and effect, and the researchers cannot rule out the possibility that the results may be due to other unmeasured factors.

They also point to a lack of details on surgeons' work and personal life conditions, and say the results may not apply to other types of surgical procedures or those performed by surgeons with other specialties.

However, study strengths included the use of a highly accurate clinical database in terms of patients' preoperative conditions and surgical

outcomes, and accounting for important patient related factors for the individual procedures selected.

"Many aspects can impair the successful development of female surgeons," say the researchers. "Nevertheless, in this analysis, no significant difference existed in the mortality or complication rates of surgeries done by female and male surgeons, suggesting that they are equally successful in developing their surgical skills."

They add, "More appropriate and effective surgical training for female surgeons could further improve surgical outcomes."

The challenges faced by female surgeons in Japan are not unique, and many female surgeons elsewhere have had similar experiences, notes Cherry Koh, a colorectal surgeon based in Australia, in a linked editorial.

Change at work, at home and at societal level is necessary to support women in the workforce, she says, while leadership at all levels is crucial to drive change, including commitment from government ministers, professional surgical societies, hospital managers, and departmental leads.

Only through broad engagement can national regulations (such as targets or quotas supporting [gender equity](#) in recruitment, training, and retention) be combined with local measures (such as codes of conduct, safer workplace practices, and mentoring opportunities)," she writes. "Rapid change is needed, in the interest of both clinicians and patients."

More information: Comparison of short term surgical outcomes of male and female gastrointestinal surgeons in Japan: retrospective cohort study, *The BMJ* (2022). [DOI: 10.1136/bmj-2022-070568](https://doi.org/10.1136/bmj-2022-070568)

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