

Surgical Instrument Size Studied

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The concept of one size fits all works with many things—smocks, baseball caps and inner tubes. But not disposable laparoscopic surgical instruments.

So say the results of a survey of general surgery residents conducted by a group that included two surgeons at the University of Wisconsin School of Medicine and Public Health. After surveying the opinions of male and female residents at four academic general surgery training programs, the group concluded that common disposable laparoscopic surgical instruments don't fit the needs – or more specifically, the generally smaller glove size - of female surgeons.

Dr. Peter Nichol, an assistant professor of surgery and the paper's senior author, says the study was inspired by the experiences of one of his female surgical residents, who frequently had difficulty using a laparoscopic stapler during appendectomies.

"These instruments are designed by the instrument companies to fit the hands of male surgeons," says Nichol. "As a result, you have this extremely well-trained surgeon struggling to do a single step that's critical to the success of the surgery."

Fifty-four percent of the 120 surgical residents responded to questions asking them to rate their comfort level with common disposable laparoscopic instruments, including a surgical stapler (designed to divide and seal intestine) and two instruments designed to divide and seal blood vessels: the laparoscopic harmonic scalpel® and the Ligasure®.

The results indicated that as respondent's glove size increased, so did their level of reported ease with which they used the instruments. Female respondents (average surgeon's glove size is 6.5) reported that they frequently need to use two hands to effectively use the instrument. In contrast male respondents (glove size 7.5) required only one hand for the same maneuvers.

Dr. Sharon Weber, an associate professor of surgery at UW, agrees that instrument size can be an issue for surgeons with smaller hands.

"The comfort level of dealing with these devices is very much dependent on the size of your hand," says Weber, a cancer surgeon. "What we see is surgeons taking longer. It affects the ease and smoothness with which you can complete a procedure."

Dr. Yolanda Becker, a surgeon with UW Hospital and Clinics' transplant program, stresses that the issues with instrument size are related more to hand size than gender.

The study's results echo those from an earlier, similar survey conducted at the University of California. Nichol, Weber and Becker hope that mounting evidence of a problem will convince instrument manufacturers to begin correcting the ergonomical issues cited in the UW survey - particularly in light of the increasing number of women who are choosing surgery as a specialty.

"It's a really important issue," says Nichol. "Half of my residents are women. Half of the medical school population in the United States is now women."

The study appeared in a recent issue of Surgical Endoscopy. The study team also included Dr. David Mahvi, professor of surgery at UW School

of Medicine and Public Health, Dr. Danielle Adams and Dr. Stephen J. Fenton of the University of Utah, Dr. Bruce D. Schirmer of the University of Virginia and Dr. Karen Horvath of the University of Washington.

Provided by University of Wisconsin School of Medicine and Public Health

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