Anesthesiologist Age and Sex Influence Patients: Comment

To the Editor:

With great interest we have read the article by Forkin *et al.*[1] regarding the effect of anesthesiologist age and sex on patient perception of physician competence. We appreciate and congratulate the authors for setting up a meaningful trial and sharing such useful findings. There are, however, two important points of concern.

First, the authors did not calculate the sample size before recruiting participants. They did conduct a posteficacy test that reported a power greater than 0.8; however, a linear model was used to conduct the power analysis with multiple variables. Currently, as far as we know, the generally accepted power analyses methods are only limited to univariate power analysis, and although there are many multivariate power analysis methods, none are generally accepted and feasible.[2]

Second, in an article previously written by the authors,[3] they reported that the sex of the anesthesiologist did not significantly affect patient perception of the anesthesiologist's abilities (intelligence, confidence, care for family member), whereas in this study they reported the opposite result (confidence and care for family member in White participants). Two similar studies have produced confusing and conflicting results on the factor of sex. To summarize, we think the conclusion of this study that sex influences patient perception of physician competence may be unstable.

Competing Interests

The authors declare no competing interests.

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References

1. Forkin KT, Dunn LK, Kotha NC, Bechtel AJ, Kleiman AM, Huffmyer JL, Collins SR, Lyons GR, Ma JZ, Nemergut EC: Anesthesiologist age and sex influence patient perceptions of physician competence. Anesthesiology 2021; 134:103–10
2. McDonald JH: Handbook of Biological Statistics, 3rd edition. Baltimore, Maryland, Sparky House Publishing, 2014, pp 247–53
3. Forkin KT, Dunn LK, Kaperak CJ, Potter JF, Bechtel AJ, Kleiman AM, Huffmyer JL, Collins SR, Lyons GR, Ma JZ, Nemergut EC: Influence of sex and body language on patient perceptions of anesthesiologists. Anesthesiology 2019; 130:314–21

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Anesthesiologist Age and Sex Influence Patients: Reply

In Reply:

We appreciate Wang *et al.*[1] for their interest in our work. We studied the effects of anesthesiologist age and sex on patient perceptions of the anesthesiologist's confidence, intelligence, likelihood of choosing the anesthesiologist to care for a family member, and leadership abilities. In our study,[2] 300 patients were randomized to view a set of four videos in random order, each featuring an anesthesiologist varying in sex (female or male) and age (younger or older). All anesthesiologists displayed confident, high-power body language. In brief, we found that patients ranked female anesthesiologists higher than male anesthesiologists on the measures of confidence and likelihood of choosing the anesthesiologist to care for a family member and younger patients (younger than 65 yr old) ranked older anesthesiologists higher than younger anesthesiologists on the measures of confidence, intelligence, and leadership abilities. We would like to address both points of concern regarding our findings and statistical analysis that were raised by Wang *et al.*[1]

First, Wang *et al.* may have overlooked the power analysis and sample size estimation in our paper. In fact, the power analysis was performed *a priori* as noted in the statistical

analysis section of our paper. Our power analysis revealed that enrolling 300 participants would provide more than 80% power to detect a difference in ranking one half-level or greater by sex, age, and interaction, with adjustment for multiple testing for the three ranked measures (confidence, intelligence, care of family member).

Second, the current study focused on evaluating the effects of sex and age of an anesthesiologist on the anesthesiologist's perceived competence. This study was designed notably different from our previous study[3] that evaluated the effects of anesthesiologist body language and sex on patient perceptions of anesthesiologist competence. Indeed, our previous study did not detect a difference in patient perceptions related to sex of the anesthesiologist, but did detect a preference for anesthesiologists displaying confident, high-power body language (rather than unconfident, low-power body language) on all four measures of anesthesiologist competence. In the current study, we removed body language as a variable by having all actors demonstrate confident, high-power body language. By removing this variable, we were able to detect a difference in patient preferences related to the sex of the anesthesiologist. This does not make our results "unstable" as suggested by Wang *et al.*,[1] rather, it reveals that there is a hierarchy of anesthesiologist characteristics to which patients respond. That is, an anesthesiologist's body language may weigh more heavily upon a patient's perception of an anesthesiologist's confidence and competence. Once over this hurdle, some patients would perceive the competence differently according to the anesthesiologist's sex and age. In future studies, it would be interesting to investigate this hierarchy of anesthesiologist characteristics further. Again, we appreciate the concerns of Wang *et al.*, but we can reassure the readers that appropriate statistical considerations were taken in our study.

Competing Interests

Dr. Forkin receives funding from Hemosonics, LLC (Charlottesville, Virginia) for research unrelated to this work. The remaining authors declare no competing interests.

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References

1. Wang F, Zhu Y, Hu Y, Wang Y, Zhu T: Anesthesiologist age and sex influence patients: Comment. Anesthesiology 2021; 135:188
2. Forkin KT, Dunn LK, Kotha NC, Bechtel AJ, Kleiman AM, Huffmyer JL, Collins SR, Lyons GR, Ma JZ, Nemergut EC: Anesthesiologist age and sex influence patient perceptions of physician competence. Anesthesiology 2021; 134:103–10
3. Forkin KT, Dunn LK, Kaperak CJ, Potter JF, Bechtel AJ, Kleiman AM, Huffmyer JL, Collins SR, Lyons GR, Ma JZ, Nemergut EC: Influence of sex and body language on patient perceptions of anesthesiologists. Anesthesiology 2019; 130:314–21

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Perioperative Temperature Monitoring: Comment

To the Editor:

Dr. Sessler penned an excellent review of body temperature and the implications of hypothermia and coagulation.[1] It states that body temperature averages about 37°C. In industrial nations, recently recorded data from extensive cohort studies indicate that this is closer to 36.5°C and continues to decline secondary to changes in physical activity, body composition, and antibiotic usage.[2] These results included adjustments for age, height, weight, and time of day.[3] This new 36.5°C value was resistant to potential confounders of ambient temperature, time of day, patient demographics, and comorbidities.[2] After more than two centuries, the norm of 37°C may need replacement to a suggested new standard of 36.5°C. This new proposed normothermia standard is fluid, might continue to decline, and has patient care and quality improvement implications.

Competing Interests

The author declares no competing interests.

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References

1. Sessler DI: Perioperative temperature monitoring. Anesthesiology 2021; 134:111–8