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LETTER TO THE EDITOR

Reply to Comment on "Evaluating the Impact of ACGME Resident Duty Hour Restrictions on Patient Outcomes for Bilateral Breast Reductions"

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Dear Sir,

We thank Dr. Nagarkar for insightful comments into our study investigating the effect of ACGME duty hour restrictions on reduction mammoplasty outcomes.[1,2] The overarching goal was to investigate the potential effect of duty hour restrictions on resident performance and clinical skill development. The bilateral reduction mammoplasty procedure was then chosen as a validated marker of resident operative autonomy and technical skill because other studied procedures like microvascular reconstruction and breast reconstruction are likely to have attending surgeon involvement that would mask any outcome effect from resident performance.[3] Three separate time periods were then selected around the implementation of duty hour restrictions in 2003 and 2011 and analyzed using the NIS database.

With a necessarily long study period to appropriately assess the effect of duty hour restrictions comes other contemporary changes that may have confounding effects. Chief among them is the shift of reduction mammoplasties performed as inpatient to outpatient procedures as noted. This transition suggests that perhaps reduction mammoplasty patients captured by the NIS database were selectively admitted for a preoperative comorbidity that may increase their risk of postoperative complications. Knowing this, preoperative comorbidity was modeled with risk of mortality and patient illness severity scores and found to increase over time. Unsurprisingly, multivariate regression analysis found that preoperative comorbidities more strongly associated with postoperative complications than ACGME duty hour restrictions. However, the increasing preoperative comorbidity scores captured in the patient cohorts are unlikely to reflect differential assignment of more comorbid patients to inpatient surgery. A propensity score-matched analysis of 18,780 reduction mammoplasties found that there was no difference in 17 predictive comorbidities between inpatient and outpatient procedures.[4] Nonetheless, the different time periods corresponding to duty hour restrictions were still found to be significantly associated with increased postoperative complications.

Nagarkar brings up an interesting point regarding the transition of the plastic surgery training pathway from independent to integrated over the time course of this study. Although there could ostensibly be increased complications associated with more junior resident involvement on the plastic surgery service during this gradual transition, this phenomenon has not been described. Furthermore, during the period (1999–2014) covered by this study, combined plastic surgery residency programs with three years of general surgery and three years of plastic surgery were still commonplace alongside independent programs, and together they far outnumbered integrated programs.[5] Any impact of intern or very junior resident involvement from the growing number of integrated programs would likely be mitigated.

Although multiple factors surely contribute to the increased complication rates observed in this study, duty hour restrictions may have some association with these outcomes. The concern over decreased resident involvement and exposure is not isolated to American residency programs, and other international studies have described significant reductions in operative exposure to breast surgery procedures after the passage of duty hour restrictions.[6] Resident safety and wellness are essential goals and necessary for sustaining long-term excellence, but the unintended consequences of blanket policies that may restrict training volume and surgical repetition should be carefully considered.

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DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

REFERENCES

1. Nagarkar P. Evaluating the impact of ACGME resident duty hour restrictions on patient outcomes for bilateral breast reductions. *Plast Reconstr Surg Glob Open.* 2023;11:e5257.
2. Chi D, Chen AD, Wu WW, et al. Evaluating the impact of ACGME resident duty hour restrictions on patient outcomes for bilateral breast reductions. *Plast Reconstr Surg Glob Open.* 2023;11:e4820.

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Plast Reconstr Surg Glob Open 2023; 11:e5258; doi: 10.1097/GOX.0000000000005258; Published online 21 November 2023.

3. Patel SP, Gauger PG, Brown DL, et al. Resident participation does not affect surgical outcomes, despite introduction of new techniques. *J Am Coll Surg*. 2010;211:540–545.
4. Calotta NA, Merola D, Slezak S, et al. Outpatient reduction mammaplasty offers significantly lower costs with comparable outcomes: a propensity score-matched analysis of 18,780 cases. *Plast Reconstr Surg*. 2020;145:499e–506e.
5. Roostaeian J, Fan KL, Sorice S, et al. Evaluation of plastic surgery training programs: integrated/combined versus independent. *Plast Reconstr Surg*. 2012;130:157e–167e.
6. Hallam MJ, Lo S, Mabvuure N, et al. Implications of rationing and the European working time directive on aesthetic breast surgery: a study of trainee exposure in 2005 and 2011. *J Plast Reconstr Aesthet Surg*. 2013;66:e37–e42.