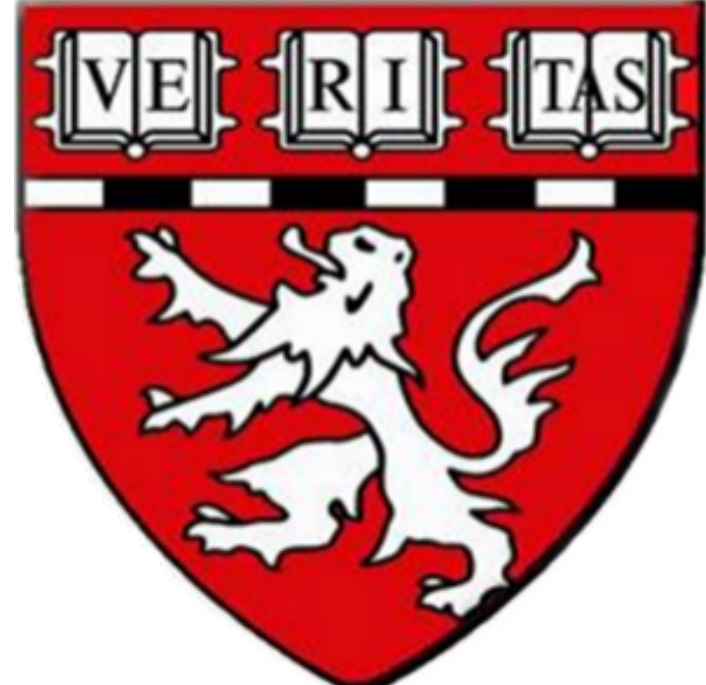




FELLOWSHIP TRAINING INFLUENCES LEARNING CURVES FOR LAPAROSCOPIC SLEEVE GASTRECTOMY



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Background

Laparoscopic sleeve gastrectomy (LSG) is the most commonly performed bariatric surgical procedure. Little is known about how surgeon training background influences the learning curve of this procedure. We hypothesize that post-residency training specific to LSG influences learning curves.

Methods

- This was a retrospective, single institution cohort study. Surgeons were split into two groups: those who had not completed fellowship training in SG (NF, n=3), and those who had completed SG specific training in an MIS fellowship (SGF, n=3).
- OR times (OTs) were extracted for the first 100 SG cases of each surgeon, with any cases involving another procedure excluded (Operative Time Cohort).
- Pre-surgery BMI and BMI at 1 year were collected for the first 100 SGs including cases with other procedures unless it involved bariatric conversion procedures (Weight loss Cohort).
- 30 day readmissions, re-operations, and complications were collected.
- Data was analyzed in bins of 20 cases and a regression analysis was performed.

Results

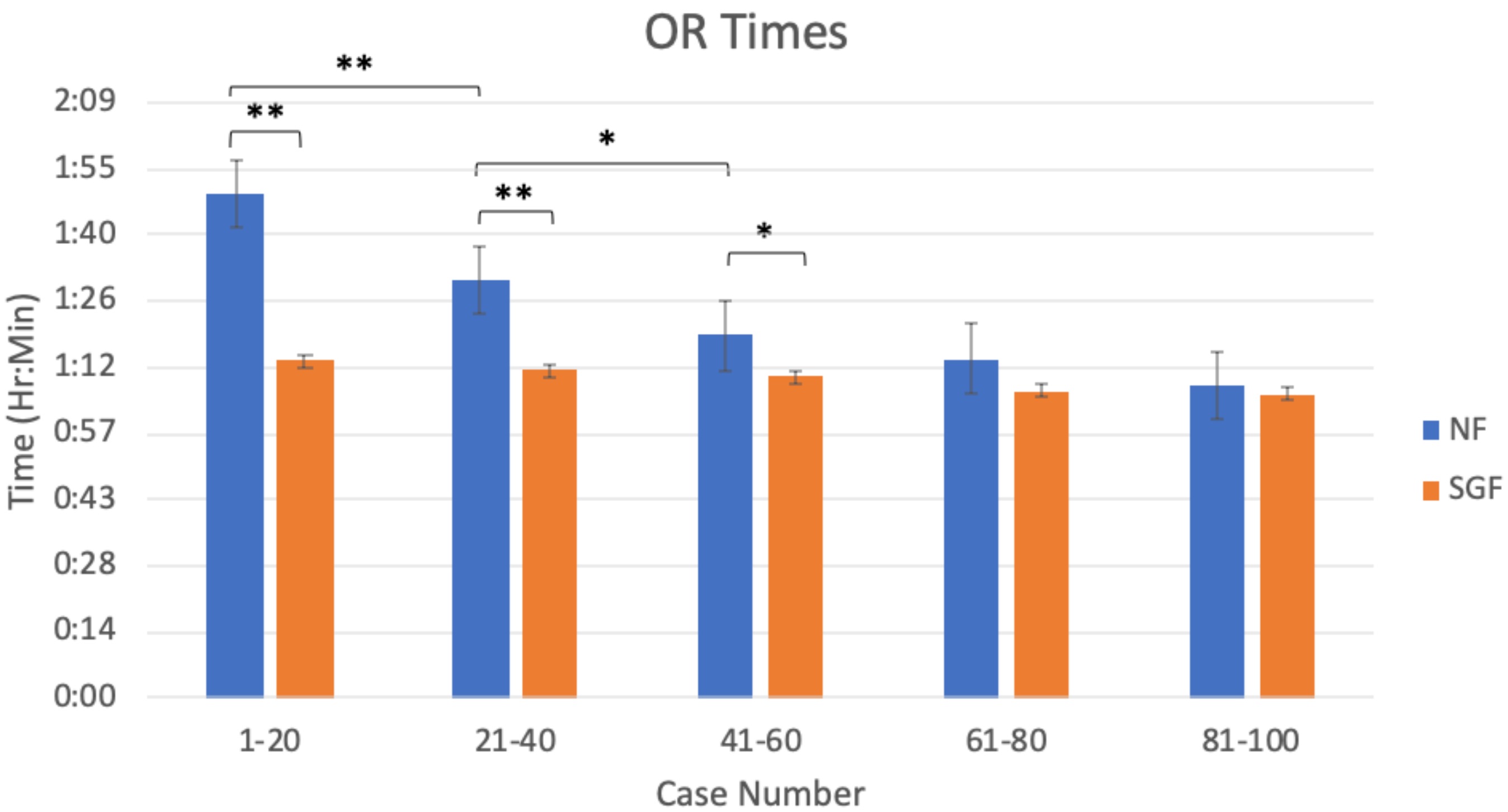


Figure 1. Operative Time (OT) averages for each surgeon cohort in bins of 20 cases. ** p value <0.001, * p value <0.01

Results

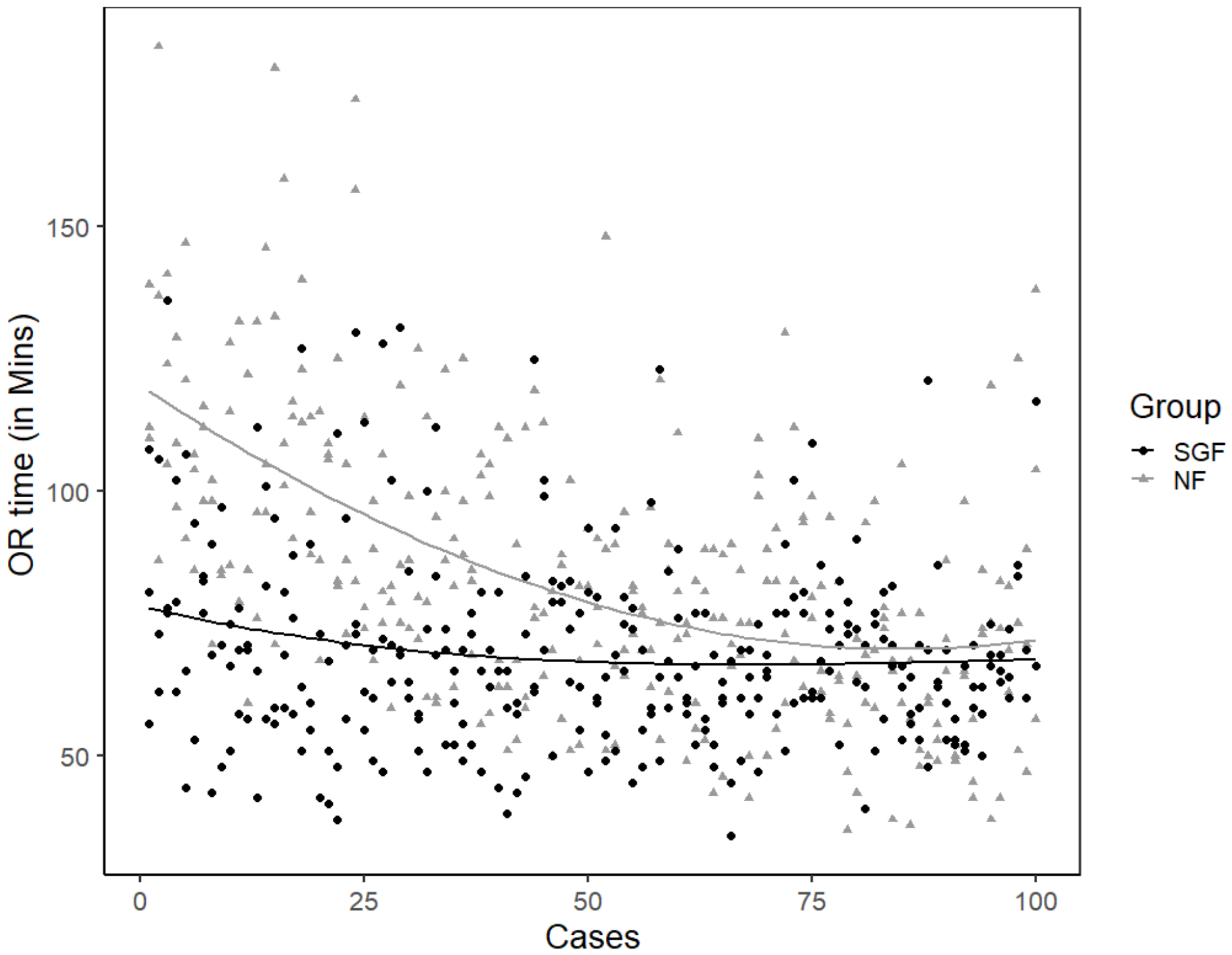


Figure 2. Scatterplot from Operative Time Cohort showing OR times for each case number with polynomial trend line.

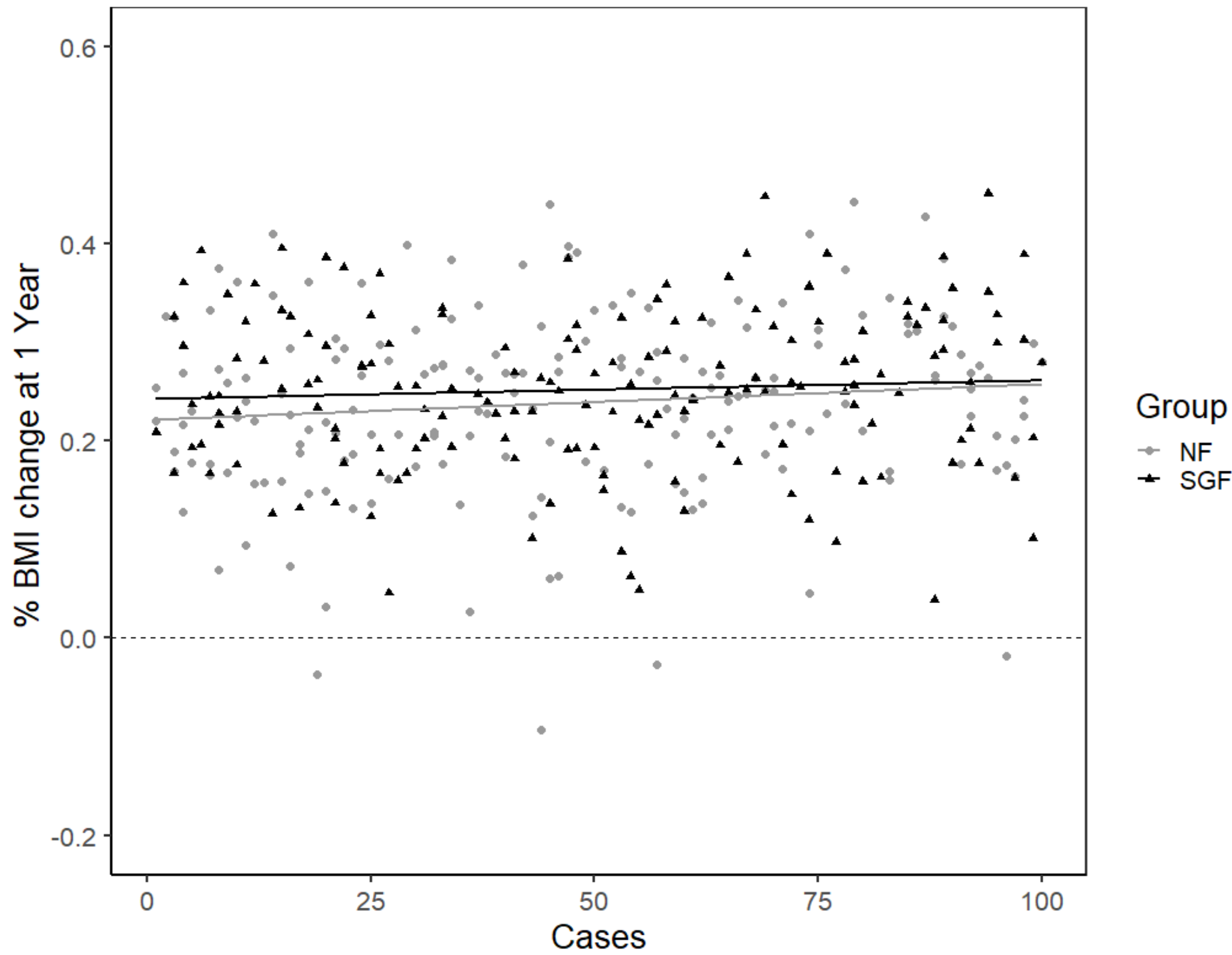


Figure 3. Scatterplot from Weight Loss Cohort showing BMI changes after 1 year for each case number with linear trend line.

Results

	Operative Time Cohort			Weight Loss Cohort		
	Average NF	Average SGF	P-value	Average NF	Average SGF	P-value
30-day Readmissions	7 ± 4.6	4.3 ± 2.5	0.43	5.7 ± 2.5	3.3 ± 0.6	0.19
Re-operations	0.3 ± 0.6	0.3 ± 0.6	1.0	0	0.3 ± 0.6	0.37
Complications	3 ± 3	0.7 ± 1.2	0.28	1.7 ± 1.5	1 ± 1	0.56

Table 1. Outcomes averaged for each group of surgeons across first 100 cases.

- There were no differences in starting age, sex, and BMI between the two groups of surgeons.
- NF surgeons showed a statistically significant improvement comparing the first to second, and second to third bins of 20 cases. SGF surgeons were significantly faster across the first 60 cases (Figure 1).
- There was a statistically significant steeper slope of the linear regression for improvement in ORT over case number for NF compared to SGF surgeons (Figure 2).
- There was no significant difference in the slopes of BMI changes at one year between levels of training (Figure 3).
- When controlling for excluded cases with multiple procedures, the learning curve was estimated to be between 88 and 115 cases.
- There were no differences in 30 day readmissions, re-operations, or complications between NF and SGF surgeons (Table 1).

Conclusions

- Surgeons who trained to perform LSG in fellowship demonstrate faster and consistent OT on their initial independent LSG cases than surgeons who did not.
- This suggests that learning curves for OT in LSG are achieved during formal case-specific fellowship training.
- There was no correlation between case number and weight loss outcomes or safety profiles for either group.
- When controlled for all LSG cases, the learning curve to achieve consistent OT efficiency is estimated to be between 88 and 115 cases