Applying Deliberate Practice to Plastic Surgery Residency Training

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Disclosure

- There is nothing to disclose.
Deliberate Practice is defined as a highly structured activity in which the explicit goal of the activity is to improve performance. In the field of medicine, deliberate practice is more specifically described as an activity in which there is:

- Repetitive performance of intended cognitive or psychomotor skills
- Rigorous skills assessment
- Continual feedback
- Improved skills performance
Purpose

The purpose of this study was to assess the impact of K. Anders Ericsson’s theory of deliberate practice on resident education by evaluating procedure times of breast reconstruction utilizing transverse rectus abdominis myocutaneous (TRAM) flaps.
TRAM Procedure
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- TRAM procedures may consist of either pedicled flaps or free flaps.
- In pedicled TRAM procedures, the rectus abdominis remains tethered to the abdominal wall and is tunneled under the skin to reconstruct the breast.
- The free TRAM flap consists of muscle, fat, skin, and vessels from the lower abdomen that is then transplanted to the recipient site on the chest wall.
Methods

• A retrospective review of TRAM flap breast reconstruction was performed of resident-associated cases at the Moffitt Cancer Center from 2009-2011.

• Residents were trained according to the deliberate practice didactic model over their four-month rotations and trained along a continuum of increasing resident independence.

• Operative times were categorized into the 1\textsuperscript{st}, 2\textsuperscript{nd}, 3\textsuperscript{rd}, and 4\textsuperscript{th} months of the rotation.
Results

- A total of 75 cases (n=75) met inclusion criteria.
- Mean duration of procedures for the 1st, 2nd, 3rd, and 4th months were 6.16 hours, 5.21 hours, 5.20 hours, and 5.24 hours, respectively.
- While the decline in procedure time during the rotation was not statistically significant (p=0.2440), the correlation coefficient for operative times for these cases over the four months was significant at -0.25 (r=-0.25, p=0.048).
The median procedure duration decreased during each of the month-long blocks, but the results were not significant \((p=0.2440)\).
The solid black lines represent the median procedure duration of the corresponding month blocks.

The correlation coefficient was -0.18 (r=-0.18).
The black line represents all cases, whereas unilateral cases are in red and bilateral cases are in green.

The correlation coefficient was -0.25, which is represented by the slope of the black line.

The correlation coefficient was significant (p=0.048).
The solid black lines represent the median OR times of the corresponding month blocks.
The correlation coefficient was -0.25 (r=-0.25).
Conclusion

- This study marks the first application of the theory of deliberate practice to a complex skill set in the surgical literature.
- The data shows a decrease in operative times over each month interval of the residents’ rotations.
- Further evaluation is warranted to determine whether this didactic model can be formalized and potentially accelerate the acquisition of the complex skill set required for breast reconstruction via TRAM flaps.
References


References
