

# See better by looking at art, Visual Training for Medical Students and Doctors at the Rijksmuseum, Amsterdam

*Stella Anna Bult<sup>1</sup>, Pien de Ruiter<sup>2</sup>, Thomas van Gulik<sup>3</sup>*

<sup>1</sup> Amsterdam UMC, The Netherlands, [stellabult@hotmail.com](mailto:stellabult@hotmail.com)

<sup>2</sup> Amsterdam UMC, The Netherlands, [p.e.deruiter@amsterdamumc.nl](mailto:p.e.deruiter@amsterdamumc.nl)

<sup>3</sup> Amsterdam UMC, dept. of Surgery, [t.m.vangulik@amsterdamumc.nl](mailto:t.m.vangulik@amsterdamumc.nl)

## BACKGROUND

Interest in art-related education in the medical world is growing (Cerqueira et al., 2023; Mukunda et al., 2019). The visual arts are increasingly used as a medium for developing observational skills and social competences, such as communication and empathy. Literature shows that learning through art-based observational training encourages the acquisition of a range of essential competencies and skills which come in hand in clinical practice (Cerqueira et al., 2023; Derksen et al., 2013; Mangione et al., 2018; Mukunda et al., 2019; Triffaux et al., 2019). This research aims at conducting an observational study using existing literature and validated questionnaires to examine the outcomes of art-based observational training in medical students and doctors at the Rijksmuseum in the Netherlands. The research question of this study was: “Is a quantitative effect measurable in observational skills and judgement (ambiguity) as well as empathy in medical students and doctors participating in art-based observational training?”.

## MATERIALS AND METHODS

Between December 2023 and June 2024 fifteen art tours were conducted in the Rijksmuseum in Amsterdam. The study's design did not include a control group, focusing

exclusively on the participating cohorts. Using quantitative methods in the form of a pre- and post-assessment intervention, the participants of the program 'See better, by looking at art' (Gulik et al., 2024; Ruiter et al., 2024) were assessed regarding empathy using the *Jefferson Scale of Empathy* (JSE) as well as tolerance for ambiguity using the *Tolerance of Ambiguity in Medical Students and Doctors* scale (TAMSAD). The scoring is focussed on quantitative data on empathy and tolerance for ambiguity and qualitative data through an online evaluation form. Additionally, a qualitative post-intervention questionnaire was devised to evaluate participants' perceptions of how the program contributed to their professional development.

## RESULTS

A total of 91 participants were included, 63 were females and 28 were males. The participants presented in different stages of their medical career. 29 participants completed the JSE and 62 completed the TAMSAD. A significant increase in empathy as well as in tolerance for ambiguity was found. The mean difference between pre- and post-testing was 3,71 points for empathy in a score between 20 to 140. In tolerance for ambiguity testing, the mean difference between pre- and post-testing was 1,86 points, scored between 0 to 100. These outcomes were statistically significant. The qualitative results were predominantly positive. Notably, medical students saw the program as beneficial for their professional development, while surgeons were more critical, citing the challenge of achieving lasting skill improvement within the limited duration of the course.

## DISCUSSION

The results suggest that incorporating art-based observational training in medical education enhances empathy and tolerance for ambiguity. We did not observe significant differences in outcomes between participants with respect to gender, field or function. Limitations of this research are that participants were recruited on a voluntarily basis, no control group was included and with using these scales, it was only possible to measure one single effect. The contrasting findings in the qualitative results between surgeons and medical students may originate from the latter's limited training in professional skills, making them more likely to value acquiring these proficiencies.

## CONCLUSION

In conclusion, we assessed art-based observational training among Dutch medical students and doctors in the Rijksmuseum in Amsterdam. Two quantitative scoring methods were used, i.e. the JSE and the TAMSAD, in a pre- and postintervention test. Our findings showed statistically significant increases in both empathy and tolerance for ambiguity after the intervention. Besides quantitative analyses, the qualitative evaluations showed positive results as well. This study emphasizes the importance of art-based observational training in medical education in the professional development of medical students and doctors.

## REFERENCES

- Cerqueira, A. R., Alves, A. S., Monteiro-Soares, M., Hailey, D., Loureiro, D., & Baptista, S. (2023). Visual Thinking Strategies in medical education: A systematic review. *BMC Medical Education*, *23*(1), 536. <https://doi.org/10.1186/s12909-023-04470-3>
- Derksen, F., Bensing, J., & Lagro-Janssen, A. (2013). Effectiveness of empathy in general practice: A systematic review. *The British Journal of General Practice: The Journal of the Royal College of General Practitioners*, *63*(606), e76-84. <https://doi.org/10.3399/bjgp13X660814>
- Gulik, T. van, Bult, S., & Ruiter, P. de. (2024). Evaluation of the ABCD-method in art-based observational training of medical students and surgical residents in the museum. *International Journal of Surgical Education*. <https://www.ijsed.com/article/120058>
- Mangione, S., Chakraborti, C., Staltari, G., Harrison, R., Tunkel, A. R., Liou, K. T., Cerceo, E., Voeller, M., Bedwell, W. L., Fletcher, K., & Kahn, M. J. (2018). Medical Students' Exposure to the Humanities Correlates with Positive Personal Qualities and Reduced Burnout: A Multi-Institutional U.S. Survey. *Journal of General Internal Medicine*, *33*(5), 628–634. <https://doi.org/10.1007/s11606-017-4275-8>
- Mukunda, N., Moghbeli, N., Rizzo, A., Niepold, S., Bassett, B., & DeLisser, H. M. (2019). Visual art instruction in medical education: A narrative review. *Medical Education Online*, *24*(1), 1558657. <https://doi.org/10.1080/10872981.2018.1558657>
- Ruiter, P. de, Brug, B. van de, Reijntjes, M. A., Linsen, L., Lagarde, S., & Gulik, T. M. van. (2024). Art-based observational training for medical students and surgical residents in two Dutch museums.: Doi: 10.7417/CT.2024.5040. *La Clinica Terapeutica*, *175*(2),

Article 2. <https://clincaterapeutica.it/ojs/index.php/1/article/view/888>

Triffaux, J.-M., Tisseron, S., & Nasello, J. A. (2019). Decline of empathy among medical students: Dehumanization or useful coping process? *L'Encephale*, 45(1), 3–8. <https://doi.org/10.1016/j.encep.2018.05.003>