

To evaluate the effectiveness of a vein visualization display system using near-infrared light (“Vein Display”) for the safe and proper selection of venipuncture sites for indwelling needle placement in the forearm” Fukuroku et al (2016).

Abstract:

OBJECTIVES: To evaluate the effectiveness of a vein visualization display system using near-infrared light (“Vein Display”) for the safe and proper selection of venipuncture sites for indwelling needle placement in the forearm.

METHODS: Ten second year nursing students were recruited to apply an indwelling needle line with and without Vein Display. Another ten participants were recruited from various faculty to serve as patients. The quality of the venipuncture procedure at various selected sites was evaluated according to a scale developed by the authors. Time, scores and patterns of puncture-site selection were compared with respect to three different methods: [1] attempt 1 (tourniquet only), [2] attempt 2 (Vein Display only) and [3] attempt 3 (both). To validate the effectiveness of Vein Display, 52 trials were conducted in total.

RESULTS: We found that venipuncture site selection time was significantly improved with the Vein Display, particularly in the case of difficult to administer venipuncture sites. Overall, we found no significant difference with respect to venipuncture quality, as determined by our scale.

CONCLUSION: These results suggest that equipment such as the Vein Display can contribute immensely to the improvement of practical skills, such as venipuncture, especially in the context of elderly patients.

Full Text

Reference:

Fukuroku, K., Narita, Y., Taneda, Y., Kobayashi, S. and Gayle, A.A. (2016) Does infrared visualization improve selection of venipuncture sites for indwelling needle at the forearm in second-year nursing students? Nurse Education in Practice. 18, p.1-9.

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