Efficacy of Simulation-Based Education for intravascular catheterization: protocol for a systematic review and meta-analysis

Hiromu Okano¹, Takuya Mayumi², Yuki Kataoka³, Masahiro Banno⁴, Yasushi Tsujimoto⁵, Akihiro Shirosshita⁶, Shunsuke Taito⁷, Joho Tokumine⁸

¹Department of Critical and Emergency Medicine, National Hospital Organization Yokohama Medical Center, Harajyuku 3-60-2, Totuka-cho, Yokohama, 245-8575, Japan;
²Department of Cardiovascular Medicine, Graduate School of Medical Science, Kanazawa University, Takara-machi 13-1, Kanazawa 920-8640, Japan;
³Department of Internal Medicine, Kyoto Min-Iren Asukai Hospital;
⁴Department of Psychiatry, Seichiryo Hospital;
⁵Department of Nephrology and Dialysis, Kyoritsu Hospital, Chuo-cho 16-5, Kawanishi 666-0016, JAPAN;
⁶Department of respiratory medicine, Icinomiyanishi hospital, Ichinomiya, Kaimihira 1, Ichinomiya-shi, 494-0001, Japan;
⁷Division of Rehabilitation, Department of Clinical Practice and Support, Hiroshima University Hospital, Kasumi 1-2-3, Minami-ku, Hiroshima, 734-8551, Japan;
⁸Department of Anesthesiology, Kyorin University School of Medicine, 6-20-2 Shinkawa, Mitaka-shi, Tokyo, 181-8611, Japan

Hiromu Okano
Department of Critical and Emergency Medicine, National Hosp...

Protocol Citation: Hiromu Okano, Takuya Mayumi, Yuki Kataoka, Masahiro Banno, Yasushi Tsujimoto, Akihiro Shirosshita, Shunsuke Taito, Joho Tokumine 2020. Efficacy of Simulation-Based Education for intravascular catheterization: protocol for a systematic review and meta-analysis. protocols.io
https://dx.doi.org/10.17504/protocols.io.biu6keze

MANUSCRIPT CITATION:
ABSTRACT

Background
Intravascular catheterization procedures can cause lethal complication. An appropriate education should be needed for taking advantage of ultrasound guidance, which can realize successful catheterization and prevent mechanical complication. However, the previous review only analyzed central venous catheters, and multiple randomized controlled trials (RCTs) have been published since then. We will therefore conduct an update review of simulation education for all types of catheters.

Aim
The purpose of this systematic review is to assess whether simulation education for ultrasound-guided intravascular catheterization will improve the success rate of catheter insertion compared with no simulation education.

Methods and analysis
We will conduct a systematic review of the relevant literature according to the Cochrane Handbook and the Preferred Reporting Items for Systematic Reviews and Meta-Analysis guidelines. We will include RCTs assessing the effect of simulation education for ultrasound-guided intravascular catheterization. The primary outcomes are success rate and adverse events, and secondary outcomes are first-time puncture success rate in eligible patients and number of punctures to success. Two independent reviewers will extract the data and assess the risk of bias.

Ethics and dissemination
In this systematic review, only data from previously conducted studies will be analyzed. We will publish this systematic review in peer-reviewed journals.

ATTACHMENTS
Protocol サイト登録 7月22日.pdf