

Baystate Health

Scholarly Commons @ Baystate Health

Research and Education Celebration 2023

Presentations and Posters

Summer 2023

Can a Checklist Facilitate Recognition of a Transfusion Associated Adverse Event by Prelicensure Nurses

Sue Scott RN
Baystate Health

Marcia Scanlon RN
Baystate Health

Michele McKelvey RN
Baystate Health

Follow this and additional works at: https://scholarlycommons.libraryinfo.bhs.org/nurs_presentations2023



Part of the [Medicine and Health Sciences Commons](#)

Recommended Citation

Scott, Sue RN; Scanlon, Marcia RN; and McKelvey, Michele RN, "Can a Checklist Facilitate Recognition of a Transfusion Associated Adverse Event by Prelicensure Nurses" (2023). *Research and Education Celebration 2023*. 6.

https://scholarlycommons.libraryinfo.bhs.org/nurs_presentations2023/6

This Book is brought to you for free and open access by the Presentations and Posters at Scholarly Commons @ Baystate Health. It has been accepted for inclusion in Research and Education Celebration 2023 by an authorized administrator of Scholarly Commons @ Baystate Health.

Can a Checklist Facilitate Recognition of a Transfusion Associated Adverse Event by Prelicensure Nurses

Sue Scott, PhD, RN, CCRN; Marcia Scanlon, DNP, RN; Michele McKelvey, PhD, RN; Chester Andrzejewski, MD; Brian Nathanson, PhD

Background

- One of the risks associated with transfusions is a transfusion associated adverse event (TAAE). The severity of a TAAE can range from mildly uncomfortable to life threatening.
- To treat a TAAE in a timely manner, its signs and symptoms must be identified.
- The literature indicates that those who administer transfusions often fail to identify when a patient is experiencing a TAAE. Other care providers including paramedics and anesthesiologists administer transfusions, but nurses are the most common administrators. Checklists have been shown to help with recall of details so a TAAE checklist may help with the recall of the details for identification of a TAAE.

Study Purpose & Aim

To examine whether the use of an TAAE checklist will result in higher rates of recognition and intervention of TAAE's by prelicensure nurses compared to TAAE education alone.

Hypotheses

- The use of a transfusion checklist will increase prelicensure nurses' ability to identify TAAEs, as evidenced by appropriate transfusion behavior
- There will be a significant decrease in time to identifying a TAAE in the experimental group
- The National Aeronautics and Space Administration (NASA) Task Load Index (NASA-TLX) scores will be significantly lower in the Checklist (experimental) group than in the No Checklist (control) group



Method

- Prospective, randomized control study
- Convenience sample of 62 prelicensure nurses from two different baccalaureate nursing programs (31 from each program) who had not received any education about TAAE's.
- Educational session covering identification and nursing interventions for TAAEs
- Four to 8 weeks later, attended simulation of patient experiencing a TAAE.
- Random assignment to either checklist group (CG) or no checklist group (NCG). The CG participants given a TAAE checklist to refer to during simulation; The NCG did not receive checklist.
- Time to identification of a TAAE and NASA-TXL were measured.
- To avoid bias, participants were blinded to the purpose of the study

Results

- Significant difference in time between the CG and NCG to identify TAAE across both universities. (figure 1)
- 60% in NCG (n=18) did not identify TAAE, compared to 15.63% in CG (n=5) (p <0.001).
- Significantly lower mean NASA-TLX score for Mental Demand and Effort in CG compared to NCG; (\pm SD) Mental Demand score 56.9 (\pm 25.1) for CG; NCG score 68.8 (\pm 17.5) (p= 0.035). (figure 2)
- Despite presence of instruction on the checklist to contact the blood bank, only one participant did so in the CG, while no one in the NCG did so.

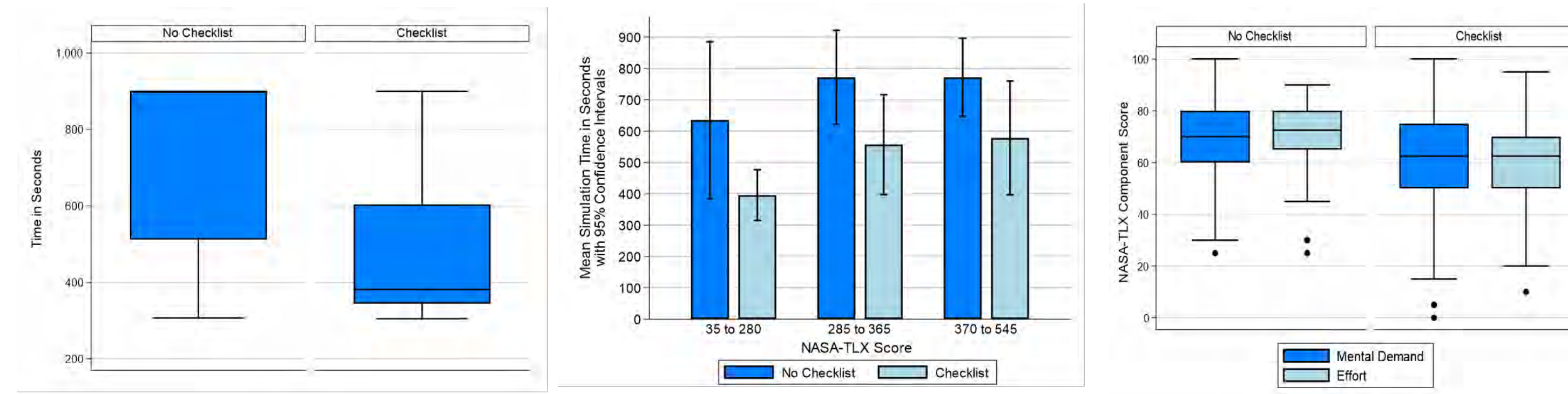


Figure 1

Figure 2

Figure 3

Discussion

- Prelicensure nurses using a validated checklist were able to identify a TAAE significantly sooner than those not using the checklist. This suggests that the TAAE checklist may improve patient safety by helping in the identification of TAAE's by prelicensure nurses.
- Impact of the checklist on the NASA-TLX suggest that the checklist decreased mental demand and effort during the simulation
- Participants with the lowest NASA-TLX also had the shortest simulation time suggesting that use of the checklist assisted participants in the problem solving process.

Future Research

Replicating of this study with licensed registered nurses and with other care providers who administer transfusions, will further validate our findings

References

- Agency for Healthcare, Research & Quality. (2019) *Checklists*. <https://psnet.ahrq.gov/primer/checklists>
- Andrzejewski, C., McGirr, J., Henneman, E. A. (2021) Hemotherapy Bedside biovigilance and nursing surveillance in the recognition, reporting, and management of transfusion associated adverse event. In Kopko, P. (Ed) *Transfusion Reactions* 5th ed. Pp. 541-579. AABB press Bethesda MD.
- El, Boghdady, M., Tang, B., Tait, I., & Alijani, A. (2016). the effect of a simple intraprocedural checklist on the task performance of laparoscopic novices. *American Journal of Surgery*, 214(2), 373-377. doi:10.1016/j.amjsurg.2016.07.01
- Gawande, A. (2010). *The Checklist Manifesto: how to get things right*. New York, New York: Metropolitan Books.