This nurse-driven research study explored time, cost, and resources for intravenous access to determine if a biomedical device, VeinViewer® Vision, would facilitate improvements in pediatric access” McNeely et al (2018).

Abstract:

PURPOSE: Vascular access in pediatric patients can be challenging even with the currently available technological resources. This nurse-driven research study explored time, cost, and resources for intravenous access to determine if a biomedical device, VeinViewer® Vision, would facilitate improvements in pediatric access. In addition, this study looked at nurse perceptions of skills and confidence around intravenous insertion and if the use of the VeinViewer® impacted these perceptions. Literature examining pediatric intravenous access success rates compared with nurse perceived skills and confidence is lacking.

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DESIGN: Nonblinded randomized control trial of pediatric nurses working in an acute care hospital setting.

METHODS: A preliminary needs assessment solicited feedback from nurses regarding their practice, perceived skills, and confidence with placing peripheral intravenous catheters (PIVs). Due to the results of the preliminary needs assessment, a research study was designed and 40 nurses were recruited to participate. The nurses were randomized into either a VeinViewer® or standard practice group. Nurse participants placed intravenous catheters on hospitalized pediatric patients using established procedures while tracking data for the study.

RESULTS: Needs assessment showed a majority of nurses felt a biomedical device would be helpful in building their intravenous insertion skills and their confidence. The study results did not demonstrate any clinically significant differences between VeinViewer® use and standard practice for intravenous catheter insertion in pediatric patients for success of
VeinViewer® to assist with peripheral intravenous catheter insertion

placement, number of attempts, or overall cost. In addition, no difference was noted between nurses in either group on perceived skills or confidence with insertion of PIVs.

PRACTICE IMPLICATIONS: The ongoing need for resources focused on building nurse skills and confidence for PIV insertion was highlighted and organizations should continue to direct efforts toward developing skills and competency for staff that are responsible for pediatric vascular access. This study illustrates the importance of data-driven decision-making for expensive hospital-funded equipment purchases. This nursing led research study highlights how perceptions do not always align with outcomes. The lessons gleaned from this study may aid in decision-making around pediatric intravenous access practice.

Reference:


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