



VESSELS OF KNOWLEDGE

A STUDENT CLUB'S INITIATIVE TO MODERNIZE NURSING EDUCATION WITH ULTRASOUND GUIDED PERIPHERAL INTRAVENOUS INSERTION WORKSHOPS



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INTRODUCTION

- Ultrasound-guided peripheral intravenous (USG-PIV) insertion is an emerging technology that has proven effective in establishing vascular access in patients with difficult intravenous access (DIVA) (Amick et al., 2022).
- Despite its effectiveness, there is limited evidence on optimal USG-PIV training techniques for pre-licensure undergraduate nursing students (Amick et al., 2022).
- To address this gap, the McGill Ingram School of Nursing (ISoN) Vascular Access Student Club (VASC) led workshops on USG-PIV insertion to improve student knowledge in assessing and managing DIVA.
- This project describes the impact of training on student knowledge and confidence in USG-PIV insertion for DIVA.



METHOD

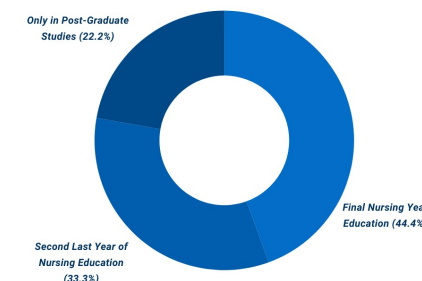
- ISoN VASC partnered with clinical educators from Nipro Canada, B Braun of Canada, and FUJIFILM Sonosite.
- Four USG-PIV workshops were conducted over two years with over 50 nursing students.
- Pre and post-event surveys measured knowledge and confidence regarding USG-PIV.
- Data was compiled and analysed from all workshops to determine the impact on student learning.



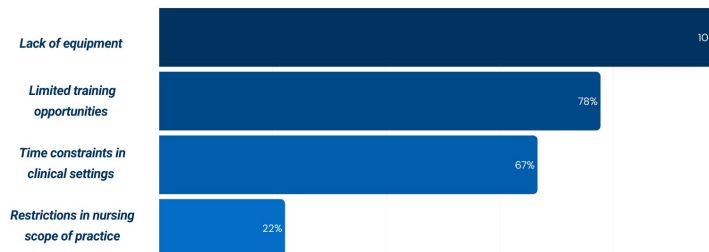
RESULTS

- Survey results revealed that 77.8% of respondents had previously encountered patients who could have benefitted from USG-PIV.
- 100% of respondents agreed that USG-PIV insertion improves PIV success rates, reduces reinsertion attempts, and minimizes pain and trauma in DIVA patients.
- The demand for formal training was strong:
 - 100% would enroll if USG-PIV training was offered in nursing programs.
 - 66.7% recommended final year integration of USG-PIV insertion, while 22.2% suggested it be introduced in the second year after basic PIV training.
- 88.9% rated the workshop as very beneficial, reporting increased confidence, with most scoring their improvement between 3 and 4 on a 5-point scale.

NEED FOR USG-PIV TRAINING FROM STUDENT PERSPECTIVE



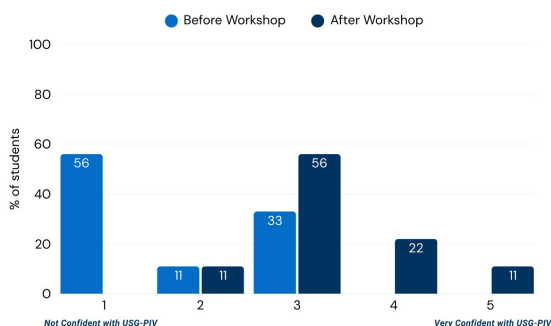
STUDENT-IDENTIFIED BARRIERS TO USGPIV EDUCATION AND CLINICAL IMPLEMENTATION



ANALYSIS

- Survey data highlights strong student demand for USG-PIV insertion training.
- Participants recognized its benefits in improving PIV success rates, reducing reinsertion attempts, and minimizing patient discomfort or pain.
- Widespread adoption of USG-PIV insertion training remains limited due to equipment availability, time constraints, inadequate training opportunities, and institutional restrictions.
- Early exposure, particularly in the final year of nursing school, is important for building competency and confidence.
- Expanding training programs and improving access to ultrasound equipment in nursing schools introduces students to best practices prior to licensure.
- These findings support the need to integrate USG-PIV training into the nursing curricula, expand hands-on learning opportunities, and improve access to ultrasound equipment.

CONFIDENCE IMPROVEMENT IN USG-PIV AFTER WORKSHOP



“88.9% FOUND THE WORKSHOP VERY BENEFICIAL, WITH CONFIDENCE SCORES RISING TO 3-4 ON A 5-POINT SCALE”

CONCLUSION & NEXT STEPS

- The findings from this project highlight the value of USG-PIV insertion training for nursing students in addressing DIVA.
- The positive impact on student confidence, knowledge, and understanding of the importance of USG-PIV demonstrates the need for formal integration into nursing school curriculum.
- Addressing barriers such as limited access to affordable training equipment, insufficient training opportunities, and institutional restrictions, would support wider adoption in schools (Stone et al., 2023).
- Incorporating USG-PIV training in Canadian nursing schools can better prepare students for clinical requirements. While students do not become certified to insert PIVs using US through these sessions alone, it allows them to advocate for improving access to USG-PIV technology and training in their new workplaces.

ACKNOWLEDGEMENTS



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