

INTRODUCTION

- PONV is generally defined as nausea and/or vomiting in the 24-hour period following general anesthesia
- PONV affects approximately 30% of the general surgical population and up to 80% of high-risk patients (Gan et al., 2020)
- PONV can cause a wide range of complications including vital sign changes, increased cavity pressures, aspiration, bleeding, electrolyte/acid-base imbalances, suture dehiscence, evisceration, and failure to discharge in outpatient surgeries (Aubrun et al., 2019; Elsaid, et al., 2021; Shaikh et al., 2016; Sizemore et al., 2021)
- Due to CRNAs' advantageous position to both cause and prevent PONV, educating anesthesia providers about PONV and the endorsed guidelines is important to ensure prevention and management for patients
- The purpose of this scholarly project was to assess the CRNAs' knowledge, preferences, and practices for managing PONV, and whether they perceived the PONV quick reference guide as a useful tool for their practice to aid in identifying high-risk patients, managing baseline PONV risks, and selecting strategies for prophylaxis/rescue treatment

METHODS

- A single plan-do-study-act (PDSA) cycle, as utilized by the Institute for Healthcare Improvement (IHI, 2022) was used to structure this quality improvement project
- The educational PowerPoint, PONV Quick Reference Guide, and pre-/post- implementation surveys were created
- Participants were asked to complete the pre-implementation survey to assess their knowledge, preferences, and practices for managing PONV, and whether they believed a PONV Quick Reference Guide would be useful in their practice
- Participants were asked to view the educational PowerPoint and PONV Quick Reference Guide and to use them during the two-week implementation period
- After the two-week period was completed, participants were asked to complete a post-implementation survey to assess their knowledge, preferences, and practices for managing PONV, and whether they perceived a PONV Quick Reference Guide as a useful tool for their practice to aid in identifying high-risk patients, managing baseline PONV risks, and selecting strategies for prophylaxis/rescue treatment
- Changes in participants' perceptions were utilized as the measurable outcome for analysis

RESULTS

Figure 1

Perceptions of Percentage of HIGH-RISK Adult General Anesthesia Patients Experiencing PONV

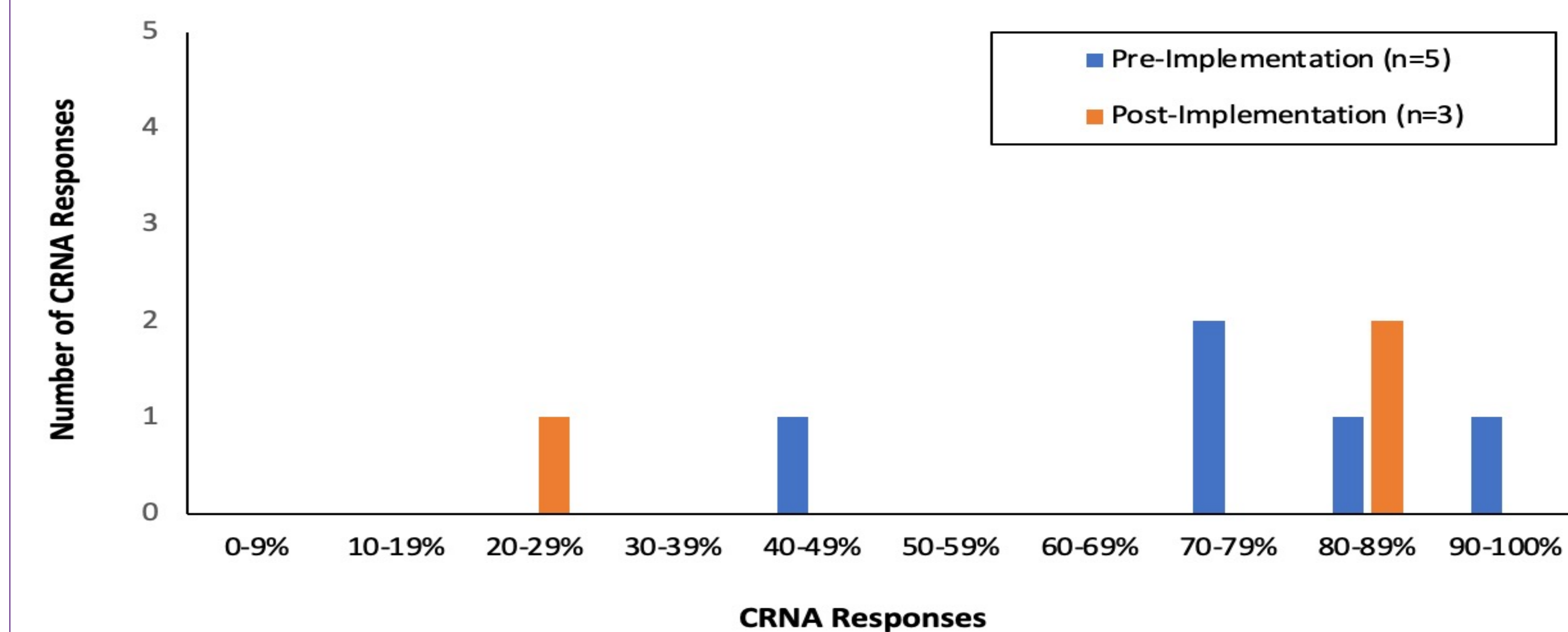


Figure 2

Familiarity with Using the Apfel Risk Assessment for PONV Risk Screening

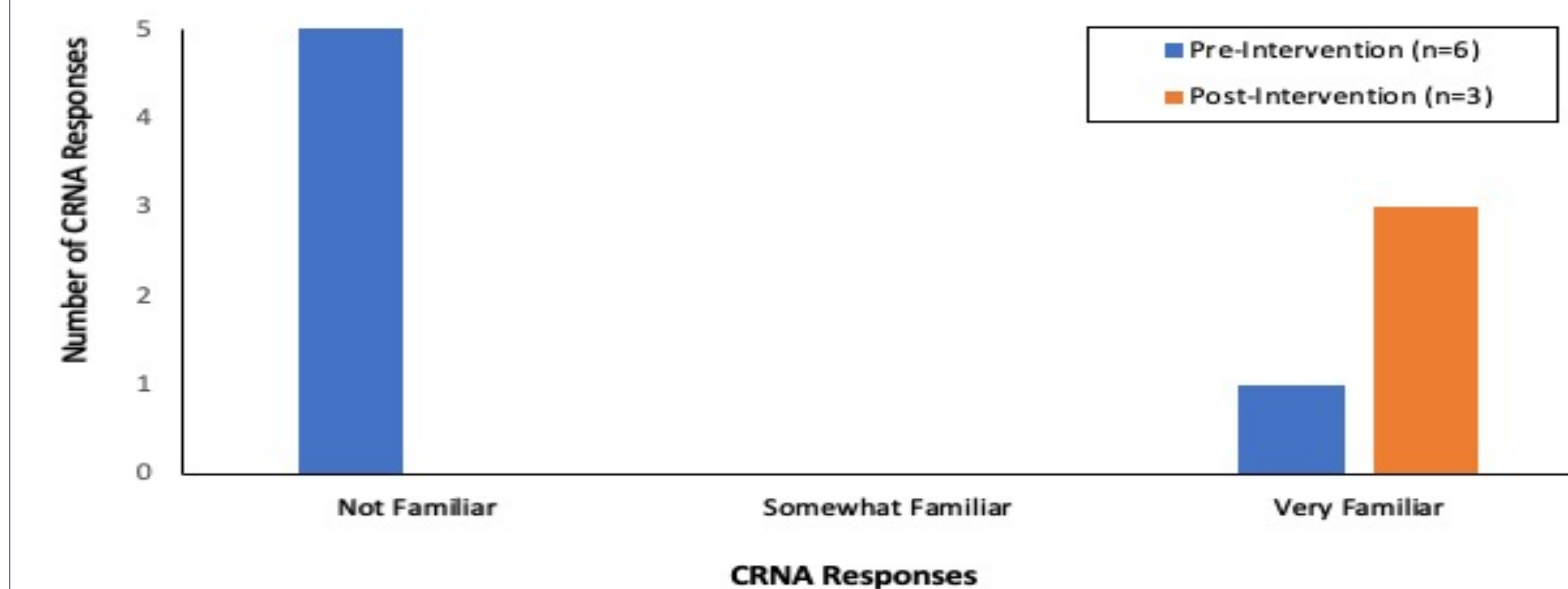
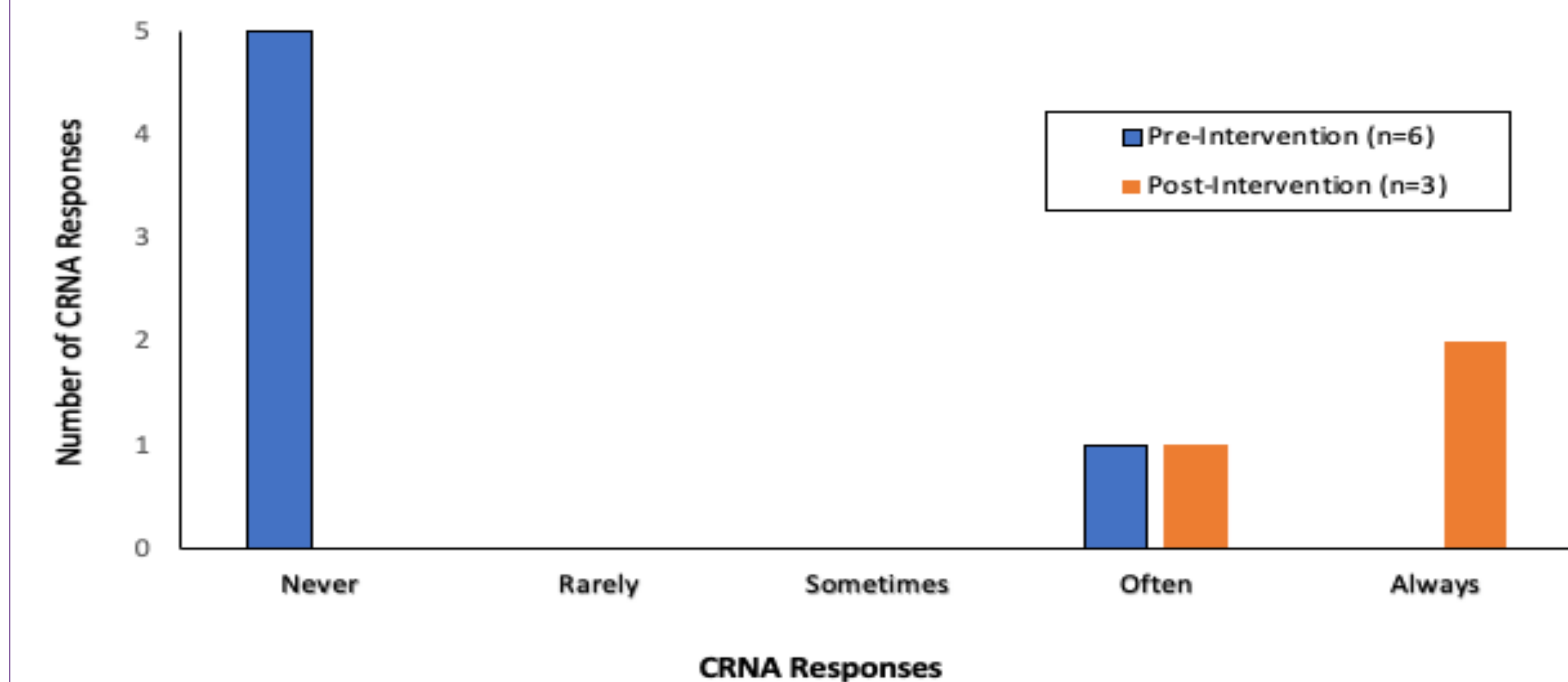


Figure 3

Use of the Apfel Risk Assessment to Screen for PONV Risk



DISCUSSION

- Prior to the intervention:
 - Most participants did not know if their department had a protocol for PONV management pre-implementation
- After the intervention:
 - Perceptions of PONV occurrence in adult and high-risk adult general anesthesia patients became more accurate
 - Reported perception of PONV prophylaxis cost became more accurate
 - Participants perceived themselves as more familiar with the Apfel risk assessment guide when screening for PONV
 - Participants perceived themselves as more likely to use the Apfel risk assessment guide when tailoring PONV prevention and management
 - Participants believed a protocol and/or the PONV Quick Reference Guide would be beneficial
 - Participants' consideration of PONV prophylaxis and treatment when planning for a case showed ultimately no change

CONCLUSIONS

- The positive outcomes seen in this quality improvement project suggest continuing education as well as implemented protocols are likely to improve participants' perceptions
- Major limitations were faced during the quality improvement project including:
 - Small sample size
 - High attrition rate of participation
 - Anonymity hindered analyzing provider-specific pre- and post-survey responses
 - Short time frame
- This project can be used as a foundation for future QI projects with the goal of reducing PONV and improving provider perceptions of PONV
- Recommendations for future projects:
 - Change education to a presentation
 - Make materials available in all lounges and workrooms
 - Condense the information presented to participants

REFERENCES

- Aubrun, F., Ecoffey, C., Benhamou, D., Jouffroy, L., Diemunsch, P., Skaare, K., Bosson, J. L., & Albaladejo, P. (2019). Perioperative pain and post-operative nausea and vomiting (PONV) management after day-case surgery: the SFAR-OPERA national study. *Anaesthesia, Critical Care & Pain Medicine*, 38(3), 223–229. <https://doi.org/10.1016/j.accpm.2018.08.004>
- Elsaid, R.M., Namrouti, A.S., Samara, A.M., Sadaeqa, W., & Zyoud, S.H. (2021) Assessment of pain and postoperative nausea and vomiting and their association in the early postoperative period: An observational study from Palestine. *BMC Surgery*, 22, 177. <https://doi.org/10.1186/s12893-021-01172-9>
- Gan, T., Belani, K., Bergese, S., Chung, F., Diemunsch, P., Habib, A., Jin, Z., Kovac, A., Meyer, T., Urman, R., Apfel, C., Ayad, S., Beagley, L., Candiotti, K., Englesakis, M., Hedrick, T., Kranke, P., Lee, S., Lipman, D., Minkowitz, H., ... Philip, B. K. (2020). Fourth Consensus guidelines for the management of postoperative nausea and vomiting. *Anesthesia and Analgesia*, 131(2), 411–448. <https://doi.org/10.1213/ANE.0000000000004833>
- Shaikh, S., Nagarekha, D., Hegade, G., & Marutheesh, M. (2016). Postoperative nausea and vomiting: A simple yet complex problem. *Anesthesia, Essays and Researches*, 10(3), 388–396. <https://doi.org/10.4103/0259-1162.179310>
- Sizemore, D. C., Singh, A., Dua, A., Singh, K., & Grose, B. W. (2021). Postoperative nausea. *StatPearls*. Retrieved September 9, 2022, from <https://www.ncbi.nlm.nih.gov/books/NBK500029/>