Early Identification of Anxiety in Patients Undergoing an MRI Scan

Jacquelyn Kelly BSN, RN
Lehigh Valley Health Network, jacquelyn_d.kelly@lvhn.org

Megan McCue BSN, RN
Lehigh Valley Health Network, megan.mccue@lvhn.org

Samnang Proum BSN, RN
Lehigh Valley Health Network, samnang.proum@lvhn.org

Published In/Presented At

Kelly, J., McCue, M., & Proum, S. (2106, March 16). *Early Identification of Anxiety in Patients Undergoing an MRI Scan.* Poster presented at LVHN Vizient/AACN Nurse Residency Program Graduation, Lehigh Valley Health Network, Allentown, PA.

Early Identification of Anxiety in Patients Undergoing an MRI Scan

Jacquelyn Kelly, BSN, RN, Megan McCue, BSN, RN, and Samnang Proum, BSN, RN

Lehigh Valley Health Network, Allentown, Pennsylvania

BACKGROUND

- 2 million scans worldwide cannot be performed either due to premature termination or refusal (Munn, Moola, Lisy, Ritano, & Murphy, 2015).
- Approximately 25-37% of patients experience moderate to severe anxiety during scanning, preventing 2% of scans to be completed (Dewey, Schink, & Dewey, 2007).
- Missed scans impact the ability to accurately diagnose a patient and represent a significant resource cost to health systems.

PICO QUESTION

In patients who are undergoing MRI testing, will implementing education about the MRI scan increase RN recognition of claustrophobia/anxiety prior to the scan?

EVIDENCE

- By using specifaically designed questionnaires researchers were able to predict anxiety levels. (Thorpe, Salkovskis, & Dittner, 2008).
- Interventions to decrease anxiety include additional education related to scan and its anxiety provoking aspects, cognitive therapy and prior use of non functioning scanner for simulation purposes (Thorpe, Salkovskis, & Dittner, 2008).
- Specific techniques that have been shown to decrease anxiety include quick removal, alerting technicians immediately of anxiety, adjusting environment to show patient's they are not entrapped and anxiolytics (Howse, 2012).
- Education prior to MRI haS been shown to improve scan completion and decrease anxiety. (Bossen, Hagerman, 2013).
- In a randomized controlled study, the study group received standard information of MRI pre imaging and was communicated with every two minutes during the test via intercom, while the control group had no interventions. The study group had 6% lower cortisol levels post scan than the control group whose levels increased by 18%. The findings suggest that MRI anxiety can be reduced with information and communication (Etcioglu, Taxegul, Tuney, Yildiz, F. & Yildiz, R., 2014).
- Sensitivity to the individual patient can frequently resolve problems associated with MRI. Patients highly valued a pre scan interview and it may be the most effective intervention in reducing unnecessary anxiety (1998).

IMPLEMENTATION

- Prior to implementation an interview was conducted with the MRI department in LVH-Cedar Crest campus seeking how often anxiety affects testing completion.
  - Approximately 3-5 patients are affected per week that attempt the MRI and are unable to complete their exam.
  - Nurses are called for medication about 12-15 times per week, causing a delay with testing and having the primary nurse off the unit to administer the medication (Fowler-Blatt, Lynne, personal communication, November 20, 2015).
- A pre survey was conducted with all RNs on 5B/5CP.
- 5B and 5CP RNs were provided an MRI fact sheet that had a small description of MRI information, directions on how to participate in the pilot, and an insert of an example on how to approach the patient prior to the exam. There were clear instructions listed for nurses to first ask patients the questions listed on LVH's current MRI checklist and then to provide education using the MRI fact sheet provided and the descriptive example.
  - Education included asking descriptive/comparative questions like how does a patient react to vacuum cleaner noise, being alone, loud noises like thunder, sirens, sudden noises, being in an elevator, encloses spaces, and journeys on an airplane (Van Minde, Klamin, &Weda, 2014).
- RNs were asked to fill a post survey which asked if the patient stated they were anxious, did the patient's answer change after receiving education, did education help assist the nurse in recognizing patient needs, and was the patient able to complete the full MRI study.

Table 1: Pre Survey Results

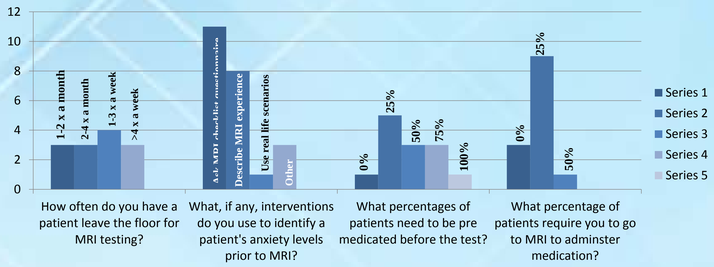
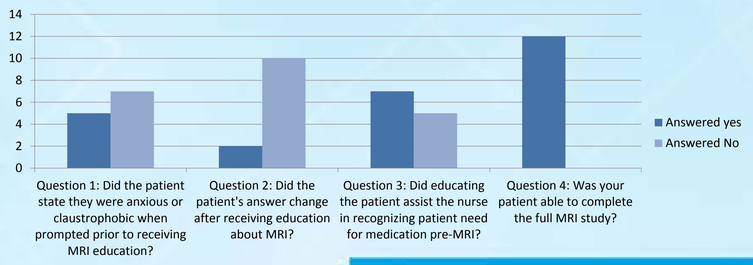


Table 2: Post Survey Results



OUTCOMES

- Pre-Survey results, a total of 13 nurses provided input.
  - Based on the gathered results there were common results when it came to how often patients go for MRI testing, 23% in all 3 categories of 1-2 times a month, 2-4 times a month and greater than 4 times a week; 31% of nurses stated patients left the unit for testing 1-3 times a week.
  - A great majority of nurses, 85%, stated they ask only the MRI checklist.
  - While approximately 38% of nurses stated 25% of their patients were identified as being highly claustrophobic/anxious, and 50-75% was tied with 23% of RN votes.
  - 68% of RNs stated that about 25% of the time they had to leave the floor to administer medication.
- Post survey results, a total of 12 nurses provided input.
  - 58% of RNs answered "no" when asked if the patient stated they were anxious or claustrophobic when prompted prior to receiving MRI.
  - 16% of RNs stated the patients answer changed when asked about claustrophobia after receiving education about MRI.
  - 58% of RNs stated that educating the patient assisted in recognizing patient need for medication pre-MRI.
  - 100% of RNs stated that the patient was able to complete the full MRI exam.

DISSEMINATION

- A greater emphasis needs to be placed to prepare patients for testing including:
  - Education on what to expect (e.g. noise level, small space)
  - Assessing anxiety levels to ensure proper interventions are met (can they follow instructions, are they able to sit still for at least 2 hours, the use of descriptive comparisons like vacuum cleaner noise, being in an elevator or airplane)
- Re-education and reinforcement to enhance patient understanding of MRI testing at an 8th grade level.
- Communication is key to ensure that the proper education is provided and that questions are answered. Therefore creating a smoother process by enabling the RN to recognize any problems that may occur and to ensure the right interventions are met prior to scanning. In hopes that the patient will be able to complete the scan and if not, than the physician is made aware of the situation.

REFERENCES

Bossen, H. (2013). Does rewording MRI reports improve patient understanding and emotional response to a clinical report?, *Clinical Orthopaedics and Related Research. 471*(11), 3637-44. doi: 10.1007/s11999-013-3100-x

Dewey, M., Schink, T., & Dewey, C. F. (2007). Claustrophobia during magnetic resonance imaging: Cohort study in over 55,000 patients, *Journal of Magnetic Resonance Imaging, 26*, 1322-7. doi: 10.1002/jmri.21147

Etcioglu, E., Tazegul, G., Tuney, D., Yildiz, F., & Yildiz, R. (2014). Can MRI related patient anxiety be prevented?

Howse, L. Helping Claustrophobic Patients through an Exam, ASRT Scanner, 2012

Lynne Fowler-Blatt, Personal Communication, November 20,2015.

Munn/ Jordan, Interventions to reduce anxiety, distress, and the need for sedation in adult patients undergoing MRI. International Journal of Evidence-Based Healthcare. 2013.

Munn, Z., Moola, S., Lisy, K., Riitano, D., & Murphy, F. (2015). Claustrophobia in magnetic resonance imaging: A systematic review and meta-analysis. *Radiography*, *21*(2), e59-63. doi: 10.1016/j.radi.2014.12.004

O'Connor, G., & Cotter, S. (1998). Value of interpersonal encounter endorsed by patients as intervention in magnetic resonance imaging. *Radiography*, *4*(2), 101-105. doi: 10.1016/S1078-8174(98)90004-9

Selim, M. A. (2001). Effect of pre-instruction on pre-anxiety levels of patients undergoing magnetic resonance imaging examination, *Eastern Mediterranean Health Journal*, *7*(3), 519-25.

Van Minde, D., Klaming, L., & Weda, H., Pinpointing Moments of High Anxiety During an MRI Examination, International Journal of Behavioral Medicine, 2014