Increasing Magnetic Resonance Imaging (MRI) Completion Rates Using Aromatherapy

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Introduction

- 10% MRIs aborted annually in the U.S. due to anxiety/claustrophobia (Sadigh et al., 2017)
- Aborted MRIs =
  - ↑ delays & expenses
  - ↓ patient satisfaction & outcomes
- We perform 8500 MRIs annually and estimate over 800 are aborted every year based on 10% rate reported by Sadigh et al. (2017)
- 25-37% patients having MRIs have moderate to high anxiety (Mohsac et al. 1998)
- Aromatherapy (elequil aromatabs) increases MRI completion rates by reducing anxiety (Davis, 2016)

Purpose

This quality improvement project aimed to:

- ↑ MRI completion rates by using aromatherapy for patients with moderate to high anxiety
- ↓ delays & expenses

Approach

- The project team met and reviewed literature evidence supporting aromatherapy.
- We created uniform, evidence-based talking points (Fig. 1) to guide team members with the process.
- We had to get a stock of aromatherapy tabs ordered and available on the unit.
- Initiated the process October 1, 2021

Results

- Fig. 3. MRI completion rates increased 2.5% after starting to offer aromatherapy to anxious patients.

Cost Savings Analysis

Assumptions & Calculations:
- Registration (20 min @ $20/hour)
- Technologist (20 min @ $35/hour)
- IV placement (10 min @ $43/hour)
- Room Cleaning (10 min @ $35/hour)
- Total cost = (number of MRIs aborted/month * 530)

Insurance Reimbursement lost when MRI not completed:
- Assumed 10% of MRIs are aborted
- If MRI not completed:
  - Insurance Reimbursement lost = (number of MRIs aborted/month * 31.33)

Cost Reduction due to reducing aborted MRIs

- Fig. 4. Cost Reduction due to reducing aborted MRIs
  - Medicine (under $1 each)

Discussion

- Using aromatherapy seems to have helped increase MRI completion rates and reduce costs associated with aborted MRIs.
- The talking points flowchart and simple data collection sheets helped keep consistency and made training simple and fast. Data collection did require oversight to ensure quality control during the project.
- The aromatherapy tabs were simple to use, inexpensive (under $1 each), tolerated well by patients, and had no known side-effects.
- Patients stated they appreciated the aromatherapy as an option.
- Measuring patient satisfaction and patient outcomes relative to increasing MRI completion rates would be a good next step for this project.

Implications for Practice

- Addressing and reducing anxiety about MRIs can increase completion rates and reduce costs (and work for team members).
- Increasing MRI completion rates reduces costs, both financial and time.
- Measuring patient satisfaction and patient outcomes relative to increasing MRI completion rates would be a good next step for this project.

References


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