A Study of Nurse-Guided Distraction as a Method of Reducing Pain during Nasopharyngeal Endoscopy

Henedia V. Sirilan RN MSN
New York Eye & Ear Infirmary
Susan B. Fowler PhD RN CNRN FAHA
Walden University

Objectives
- Discuss the purpose, significance and background of the study of music distraction for nasopharyngeal endoscopy.
- Describe the methodology used to answer the research questions in the study of music distraction for nasopharyngeal endoscopy.
- Delineate implications for practice based on data analysis and findings.
- Participate in an interactive discussion on the use of music distraction for nasopharyngeal endoscopy.

Project Overview
- The aim of this research was to determine whether nurse guided distraction with music can be used as a method of reducing pain and discomfort experienced during nasopharyngeal endoscopy or to prove that distraction will cause less focus on the pain, and discomfort during nasopharyngeal endoscopy procedure.
- Based on previous research findings it was hypothesized that nurse-guided distraction with music is an effective method of limiting pain or discomfort during nasopharyngeal endoscopy.

Need for the Study
- This research project is very important to ENT discipline because patient cooperation during procedures is critical for safe care. In healthcare we strive for a positive patient experience.
- Studies have demonstrated that distraction, especially in the form of music, is effective in reducing pain and discomfort during health care procedures (Heiser, Chiles, Fudge, & Gray, 1997).

Problems
- Patients find procedures uncomfortable or painful which can make them uncooperative and decrease compliance with instructions.
- Increase length of time for procedure and patient dissatisfaction.
- Patient is unfamiliar with the invasive nature of the endoscopy procedure.
- Patient past traumatic experiences with invasive procedures may negatively impact procedure.
- Lack of knowledge or patients education about nasopharyngeal endoscopy procedure can contribute to fear and anxiety.

Background – Literature Review
- Focus on invasive procedures
  - Cardiac catheterization – Decreased anxiety (Taylor et al., 2002)
  - GI endoscopy – less or no sedation (Lee et al., 2002)
  - Bronchoscopy – less pain (Diette et al. 2003)
  - Radiology procedures – less sedation (Kulkam et al., 2012)
More Literature Review

- Transrectal biopsy – music headphones or noise cancelling headphones – less anxiety (Motvey et al., 2012)
- Sigmoidoscopy – less or no pain (Meeuse et al., 2010)
- Colonoscopy – no sedation (Lee et al., 2002)

Research Questions

- 1) Does the use of nurse guided distraction with music affect the patient’s perception of pain and discomfort?
- 2) Does the level of perceived pain and discomfort differ between the intervention groups?
- 3) Can nurse guided distractions using music be easily implemented routine care in a busy clinic setting?

Subjects

- The researcher recruited fifty-seven volunteers (19 per group based on power analysis)
- Inclusion criteria for subject selection included 1) >18 years of age, 2) English speaking and able to understand English, 3) ability to understand the informed consent process, 4) first time nasopharyngeal endoscopy procedure, and 5) no recent history of nasal surgery requiring post-operative evaluation. Patients were excluded if they had previous experience with this procedure.
- Informed consent was obtained following IRB approval.

Groups

- Experimental design – three groups
- Groups:
  - Nurse guided distraction using music.
  - Nurse guided distraction using music plus local anesthesia spray.
  - Standard of care with no distraction, only the use of local anesthetic spray.
- Subjects were randomized using an online randomization table which assigned one of the three groups to each of the fifty-seven patients who agreed to participate in the study.

Procedures (after informed consent)

- Subjects were queried about their history of chronic pain/discomfort and location
- When applicable, subjects were asked about their music preference and this selection was obtained from iTunes on an iPad
- Physicians were notified that the patient was ready for the procedure
- Anesthetic spray was administered in 2 groups and patients were allowed to rest for 2 minutes for the medication to take effect
- Music was started once the endoscope was being inserted with the iPad held 6-12 inches from the patient's right ear at medium volume (if identified hearing loss in the right ear, the left ear was used)
- When the endoscope was withdrawn, the music was stopped (if applicable)
- After one minute, subjects were asked to rate their level of pain/discomfort on a Likert scale ranging from 0 to 10 with 0 being no pain and 10 being the worse possible pain/discomfort – the nurse verbalized these words to aid in consistent interpretation

Intervention

- For nurse guided distraction, music was played at the same volume (medium) for each subject and the iPad held in the same position approximately 6-12 inches from the patient’s right ear. If the patient identified a hearing loss in the right ear, the left ear was used.
**Data Collection**

- The primary method of data collection was patient self-evaluation. This is on the basis that pain cannot be measured by any biomedical device. It can only be described by the one feeling it.
- Likert type scales have been proven to be valid and reliable.

**Results**

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<thead>
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<th>Group</th>
<th>Mean</th>
<th>Standard Deviation</th>
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<td>1.5</td>
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<td>3.6</td>
<td>1.4</td>
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<tr>
<td>音乐及安瑟剂组合</td>
<td>2.6</td>
<td>1.4</td>
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**Results**

- Subjects were allowed to rest for 1 minute after completion of the procedure, at which time pain perceptions were assessed. Subject rated their level of experienced pain and discomfort using a numerical, Likert-type scale with 0 anchored as no pain/discomfort and 10 as worse possible pain/discomfort.
Discussion

- Research question #1 – affect of music
  - Findings did not indicate a difference in perception of pain/discomfort during nasopharyngeal endoscopy between men and women. Although literature suggests that men and women experience pain differently in general (REF) there is limited research on this difference in minimally invasive endoscopic procedures without the use of conscious sedation.
  - Sixteen subjects reported a history of chronic pain. This potential confounding variable did not influence pain/discomfort scores.

Discussion

- Research question #2 - differences
  - There was no statistical difference in mean scores between the three treatment groups. The high number of subjects indicating no or zero pain/discomfort may have contributed to this finding. A lack of significance supports the premise that all three interventions are comparable and could be used in the clinical setting, depending on patient and provider preferences.

Limitations

- Convenience sample
- Did not track confounding variables except history chronic pain (presence of family, preferred distraction such as deep breathing exercises, history of local anesthetic)
- ≥1 ENT MD/PA
- ≥1 RN giving instruction despite training
- Environment itself (busy clinic vs. MD office)

Future Recommendations

- It is suggested that more comprehensive data be collected about the patient including history of other procedures that commonly use an anesthetic agent, use of distraction in other areas of life experiences, previous education on the procedure, and role of significant others during the procedure.
- To minimize variability in the approaches of the both the nurse and the physician, one nurse and one physician should be involved.

Implications

- Music as a distractor is a viable and easy to use moderately by nurses and other health care providers in a busy clinic setting to distract patients pain/discomfort during medical procedure.
- ENT procedures are a minimally pain/discomfort procedure but still require interventions that this feelings/perception modulates to decrease pain/discomfort have the ability to promote patients cooperation during procedure.
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