Use of Music to Minimize Preoperative Patient Anxiety

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Capstone Project

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ABSTRACT

Problem: Patients undergoing surgery are subject to multiple environmental and psychosocial factors that contribute to anxiety.¹ Perioperative care providers are responsible for taking a multifaceted approach, including both Western techniques and holistic care measures, to attenuate the autonomic and emotional strains related to the surgical process.⁵,²⁴ This project sought to produce a music therapy pilot implementation process at St. Francis Health System in Tulsa, Oklahoma.

Findings: Analysis of current literature indicates that music is a beneficial intervention to alleviate preoperative patient anxiety.¹ Music is safe, economical, easy, and effective in relieving preoperative anxiety and promoting relaxation to individuals awaiting surgery¹⁷. The intervention of music within the preoperative holding area has the potential to minimize provider interventions, promote patient relaxation, and enhance overall subjective patient outcomes.¹

Methodology: Music was offered to 20 conveniently selected female patients who were scheduled for outpatient gynecological surgery. Anxiety of each patient was evaluated utilizing a pre and post-survey analysis. All participants were allowed to listen to a provided database of music via individual MP3 players. After 20 minutes, patients were given post surveys to reassess their level of anxiety. Staff perceptions of music therapy were assessed via a questionnaire.

Outcome: Eleven out of twenty patients agreed to participate and completed the pre-survey. Two withdrew. In the pre-survey, 55% of patients thought music would be helpful; 78% felt that listening to music helped relieve anxiety on the post-survey. Eighty nine percent recommended that music be available to all patients.

¹ 1-4,6,9-14,16,18,19,21-23,26,30
Conclusion: All of the preoperative nurses agreed that anxiety affects patients’ responses to surgery. Evaluation of the use of music therapy could lead to an evidence based change in the current routine.

INTRODUCTION

Research shows that music therapy is beneficial as an adjunct to pharmacological interventions to decrease anxiety, normalize hemodynamic parameters, and improve overall subjective surgical outcomes. The constant pressure to minimize medical expenditures directs attention towards the utilization of therapeutic interventions that effectively alleviate adverse patient states, yet maintain fiscal feasibility. Patient selected music as an anxiolytic intervention is safe, economical, easy, and effective in relieving preoperative apprehension and promoting relaxation and comfort to individuals awaiting surgery.

OVERVIEW

A review of literature was conducted with keywords: anxiety, stress, surgery, music/musical, and preoperative, entered into MEDLINE, CINAHL, GOOGLE Scholar, Science Direct, and Academic Search Complete databases. Research documents pertaining to adult populations with ages ranging from 16 to 85 were included. A variety of surgical procedures were evaluated including ambulatory surgery, or those with only one night of expected hospitalization. Surgeries included in the literature were facilitated under general, regional, or monitored anesthesia care (MAC) and included: genitourinary, gastrointestinal, maxillofacial, ophthalmological, endoscopic, gynecological, cardiovascular, and orthopedic cases. A focus on

† 1-4,6,9-14,16,18,19,21-23,26,30
music as an intervention in the preoperative phase of the surgical theatre was stressed. Literature published since 1990 was of primary concern to maintain current practice standards and applicability. Research studies were excluded for reasons such as pediatric sampling or a lack of musical intervention during the preoperative phase. Four studies were excluded due to difficulty of attainment.

Adhering to the above criteria, 27 out of 31 research studies were utilized to evaluate the implications of music as an anxiolytic intervention in the preoperative arena. Each manuscript was appraised for comprehension, validity, and applicability. A Level of Evidence rating was also given to illustrate the variable strengths associated with each article, with Level I being the strongest and Level VII the weakest. Elements that were considered essential to the rating process were 1) Was the purpose clearly stated? 2) Did the authors include a comprehensive description of the framework of the study including a method that could be duplicated? 3) Was there utilization of appropriate statistical analyses? 4) Did the authors incorporate all possible extraneous variables or bias associated with the process? and lastly 5) What was the overall depth of synthesis and applicability of recommendations?. See Table 1 for a list of evaluation guidelines (see appendix ii). Two documents were congruent with a Level of Evidence (LOE) rating of I, one of which consisted of a comprehensive evaluation of 34 research studies with a total sample size of N=3754, and the second being a random control trial (RCT) with sample size N= 60. Seventeen research texts were designated with a LOE rating of II, all of which were RCTs, except for one article which was a comprehensive literature review. Three RCTs had a LOE rating of III, a theoretical review was given a LOE rating of IV, two literature

\[\text{(1)}\ 2,4,6,8-11,13,15-21,23\]
reviews received a LOE rating of V,\textsuperscript{5,7} and two qualitative studies with LOE ratings of VI were also included.\textsuperscript{14,30} Table 2 illustrates the LOE rating for each article (see Appendix iii-v).

Review of literature strongly suggests music therapy as a beneficial intervention to alleviate preoperative patient anxiety. A strategy based upon the Ace Star Model\textsuperscript{31} was constructed to implement a pilot intervention of music therapy within the preoperative holding area at the outpatient Natalie surgical center at St. Francis Health System in Tulsa, Oklahoma. The environment consisted of a 15 bed unit which provides preoperative interventions to 50 individuals on average per day. Details regarding the implementation process, evaluation, and overall conclusions are discussed.

**BACKGROUND**

Changes in one’s environment or daily routine can elicit both physical and emotional aspects of anxiety.\textsuperscript{1} Research suggests that anxiety related to anticipation of a surgical procedure is due to many factors such as, “pain, disfigurement, and dependency.”\textsuperscript{2} Waiting during the preoperative phase, not being able to eat or drink, lack of procedural information, fear of anesthetics, possible complications, and recovery are primary factors that provoke anxiety.\textsuperscript{1} Higher levels of anxiety are demonstrated in females and those with no prior surgical experience.\textsuperscript{1} The most significant factor associated with anxiety according to Mitchell was individual temperament.\textsuperscript{1} Those with a personality prone to anxiety required higher amounts of anesthetic and incurred a greater amount of complications associated with anxiety.\textsuperscript{1} Furthermore, patients waiting to undergo surgery were concerned with issues that were specific to the type of procedure they were to have, and the possibility of discovering more severe disease states.\textsuperscript{3}
There is strong evidence that supports the association of patient stress and anxiety with invasive and non-invasive medical procedures. Anxiety is a response that is frequently associated with emotional characteristics such as uneasiness, worry, anticipation, and irritability. Aside from the unpleasant subjective symptoms, physiological attributes of anxiety are also elicited. Anxiety promotes excitation of the sympathetic nervous system and associated noradrenergic responses, characterized by fluctuations in respiratory rate, heart rate and blood pressure. Anxiety provokes adrenaline release which is associated with hypokalemia, potentially resulting in cardiac dysrhythmias during surgical procedures. On the same note, there is speculation that preoperative anxiety levels can lead to elevated amounts of endogenous cortisol and natural killer lymphocytes. Studies have shown that highly anxious patients require more provider attention and care interventions, as well as necessitate increased anesthetic dosages. Stress may adversely affect sleep, appetite, immune system and other factors necessary for healing and quick recovery. The overall effects of stress and anxiety can amplify costs associated with delayed healing, prolonged recovery, and increased use of resources; more importantly, such outcomes can result in negative experiences for patients.

LITERATURE REVIEW

Listening to music induces relaxation, limiting sympathetic mediated responses associated with anxiety. Thirty Chinese men awaiting transurethral resection of the prostate (TURP) procedures displayed significant reductions in blood pressure levels after listening to music; however, heart rate increased for both the music and control groups. A pilot study of 9 Chinese inpatients reported significant decreases in blood pressure after listening to music. Similarly, significant decreases in blood pressure were noted in the music group of a study.
evaluating 30 patients undergoing cerebral angioplasty.\textsuperscript{11} Twenty women that listened to music while awaiting breast biopsy were shown to have significantly decreased respiratory rates, yet no significant differences were noted in blood pressure nor heart rate parameters.\textsuperscript{12} Augustin and Hains found significant decreases in blood pressure, heart rate, and respiratory rates in the music group of 42 patients awaiting ambulatory day surgery.\textsuperscript{13} Synthesis from Alexander further suggests that music decreases physiological parameters in patients awaiting invasive procedures.\textsuperscript{14} In contrast, observations of 167 patients given music therapy for pain management after intestinal surgery did not indicate significant reductions in respiratory or heart rate.\textsuperscript{15} Of 62 female patients awaiting gynecological procedures, no changes in heart rate or blood pressure were observed in the music group.\textsuperscript{16} Lastly, five studies with a total sample sizes N=435 indicated no significant hemodynamic parameter changes.\textsuperscript{2,9,17-19} The discrepancies associated with variable study outcomes suggest that definitive cause and effect regarding decreased hemodynamic values as a result of music cannot be made at this time.

Music has been associated with minimizing endogenous production of cortisol that parallels stress reactions.\textsuperscript{6,8} A study evaluating the effects of music on 60 day surgery patients noted a significant decrease in cortisol levels in the music group during the immediate post-op period.\textsuperscript{6} However, a rise in cortisol levels was observed over time in the provider selected music group while the patient selected music group continued to have decreased cortisol levels.\textsuperscript{6} Variation between the patient selected versus the provider selected music groups suggests that the element of patient selection is significant.\textsuperscript{6} Schneider et al. evaluated cortisol levels in 30 patients and failed to find significant changes associated with music therapy.\textsuperscript{11}

A reduction in pain and depression has been reported in multiple studies with at total sample size N=347.\textsuperscript{13-15,17,20} In a study conducted by Good and Anderson, 96% of patients stated
music therapy helped to minimize post-op pain, and 86% of patients recommended that music be made available to all patients.\textsuperscript{15} Reductions in post-op nausea and vomiting and a decrease in recovery time has also been associated with music therapy.\textsuperscript{13} Further investigation is necessary to validate the exact mechanism of analgesia; Kemper et al. suggest the reduction in pain is related to the effects of music at the mu-opiate receptors, and associated alterations in morphine-6 glucuronide and interleukin-6 levels.\textsuperscript{8} Only one study conducted by Leardi et al. with a sample size N=60 failed to provide evidence of the adjuvant analgesic effects of music.\textsuperscript{6}

Music has also been shown to decrease the dosage requirements of pre-operative sedatives.\textsuperscript{1,21} According to Mitchell, there was a positive correlation between high levels of anxiety and increased anesthetic requirements during surgery.\textsuperscript{1} One study of 50 adults undergoing spinal anesthesia while listening to personally selected music resulted in a decrease in midazolam requirements.\textsuperscript{21} Similar outcomes were reported by Koch et al., sample size N=34, in which music decreased the dose of propofol during MAC needed to produce adequate sedation.\textsuperscript{17} A study of similar sample size (N=54) evaluated induction dosages of propofol for patients listening to music and scheduled to undergo rhinoplasty. The study results showed clinically significant versed and propofol dosage decreases with patients more deeply sedated as indicated by decreased Bispectral Index (BIS) levels.\textsuperscript{22} The potentiated sedative effects indicate that music therapy can reduce anesthetic requirements, produce deeper sedation, and potentially decrease resource expenditures.\textsuperscript{21}

\textbf{LITERATURE SYNTHESIS}

Music can potentiate deeper sedation in conjunction with preoperative medications, provide for individual autonomy, and improve subjective reports of anxiety. While certain
Music Therapy for Preoperative Anxiety

studies support music as a single technique to reduce anxiety\(^3\-6,8\)-\(^{15,20}\) others recommend the use of music as an effective adjunct to pharmacological measures. \(^1\),\(^{13,16,18,19,21-24}\) All except one\(^25\) of the RCTs included in this study with a total experimental sample N=1,387 reported significant decreases in subjective anxiety levels.\(^5\) Decreases in anxiety were noted primarily from evaluation of the State-Trait Anxiety Inventory (STAI) anxiety tool,\(^27\) with two studies utilizing the Observer Assessment of Alertness/Sedation Scales (OAAS)\(^28\) and Visual Analog Scale (VAS)\(^29\) measurement tools. The STAI is a tool that has been extensively tested and used in a variety of research studies; thus it is considered a highly reliable determinant of patient anxiety levels.\(^4,27\) Significant decreases in STAI scores were noted in the music group of every study evaluated indicating that music decreases subjective reports of preoperative anxiety. In a study of 50 patients that were given the option of listening to music, 100% stated that music is beneficial during preop, intraop, and postop periods; in addition, 92% illustrated a positive response to music stating that it helped them relax, feel less anxious, and be more comfortable.\(^16,23\) On another note, 67% of staff indicated that music therapy would be a beneficial intervention to improve patients’ experiences and outcomes.\(^23\)

Hyde et al.\(^30\) questioned 184 individuals to examine how patients prefer to spend time awaiting surgery. The results indicated that patients preferred to be slightly sleepy (72%) and also elected to listen to music (57.1%) or read (56.8%).\(^30\) A similar study conducted by Cunningham et al. indicated that 80% of patients prefer to listen to music before, 50% during, and 86% after surgery.\(^23\) This data supports the use of pharmacological interventions in conjunction with music therapy to treat preoperative anxiety.\(^1\),\(^3\)

\(^{2,4,6,9-13,15-19,21-23,26}\)
The inclusion of music within healthcare practice has the ability to promote patient autonomy, and it is evident that patient selected music is an essential element of music therapy. Literature strongly suggests that the element of autonomy may be a major factor associated with altering anxiety levels. Allowing patients the option to choose how to spend their time waiting for a procedure can give them a sense of control or personal involvement within their own care.

Subjective reports of decreased anxiety, minimization of pain, enhanced sedative effects, decreased anesthetic dosage requirements, and blunted adrenergic excitation are all factors that support the use of music therapy as an anxiolytic intervention. When patients choose their own music, the element of autonomy can be provided for, resulting in additional therapeutic effects. The musical options however, are important. Literature has shown that “classical” and “new-age” music decrease tension, promote relaxation, decrease hostility, increase clarity of mind, and promote a positive affect. In contrast, “Grunge-rock” has been associated with having the opposite effects, ultimately yielding anxiety states even when patients state that they enjoy such music. One study of 30 patients undergoing cerebral angiography reported that the most selected type of music was “international pop” followed by “oldies.” The variable response obtained from listening to different genres of music indicates that the type of music is important in achieving relaxation in patients. Providing a large variety of music, but eliminating certain anxiety-provoking genres, such as “grunge-rock,” would be the best option.

INTERVENTION

\[1-4,6,8,13,14,16,20-22,30\]
Stress and anxiety can have significant clinical implications throughout the perioperative arena.\textsuperscript{1,6,7} Comprehensive assessment and the use of available anxiety measurement tools, such as the STAI, can provide insight into patients’ emotional status.\textsuperscript{27} The incorporation of the STAI could assist the clinician in diagnosing patients with higher levels of anxiety and adjusting care appropriately. A dual approach to reduce preoperative anxiety should be utilized, that includes pharmacologic sedation, midazolam for example,\textsuperscript{1,3,6,17,21} in addition to music therapy of the patient’s choice.\textsuperscript{1-8,10-16,19,21-23,26,30} As the type of music can influence anxiety states,\textsuperscript{8} it is beneficial to provide a variety of music that is not anxiety provoking, but still amiable to patients’ preferences.\textsuperscript{20} Maintenance of a relaxing therapeutic environment that is adaptable to individual patient needs will serve to increase subjective reports of patient satisfaction and improve the surgical experience.\textsuperscript{2}

LITERATURE-BASED RECOMMENDATION

After conducting a comprehensive literature review the primary intervention was as follows:

Provide the patient with the option of listening to various genres of music of their preference, via facility supplied MP3 Players as a means to alleviate anxiety and promote comfort, relaxation, and sedation.

IMPLEMENTATION PLAN

Music therapy as an anxiolytic intervention in the preoperative area was implemented in at the Natalie outpatient surgery center of St. Francis Health System, in Tulsa, Oklahoma. Approval was obtained from Texas Christian University and the IREB at St. Francis Health System (See appendix vii). Evidence regarding the benefits of music therapy was presented to
the RRNA Clinical Coordinator of St. Francis and the Supervisor of the Natalie outpatient surgery center preoperative unit. Upon evaluation of the proposed intervention, a framework for implementation guided by the Ace Star Model\textsuperscript{31} was devised. Music players with head phones were obtained. To provide a variety of music genres, MP3 players were utilized which decreased storage of music libraries; this allowed every patient equal opportunity to listen to the same database of available music. Playlists were created on each player that consisted of the following music genres: easy listening, pop, classical, country, alternative, R&B, classic rock, and oldies. Each player was coded with a number and a check-out sheet was utilized to track the device and minimize loss. (See Appendix xv).

A pre-informational questionnaire (see appendix xii) evaluating staff perceptions of music therapy within the preoperative arena was administered to 10 staff members, followed by a brief 5-10 minute presentation of overall benefits and recommendations for music therapy. Details regarding the proposed pilot implementation, participant recruitment, and instructions for operation of music players were included.

Collaboration with the preoperative clinic staff allowed for the development of a convenient sample recruitment strategy that ensured individual confidentiality. Guidelines for patient selection were as follows: (1) Female at least 18 years of age; (2) ASA class 1 or 2; (3) Scheduled for outpatient/ambulatory gynecological surgery in the Natalie Surgery Center; (4) Scheduled to undergo general anesthesia. Patients were excluded if they did not meet the above criteria, or if they were given preoperative sedatives in the holding area.

A convenience sample totaling 11 out of 20 screened candidates was obtained via the following process: on the day of implementation, (1) Preoperative nursing staff was asked to determine which of their assigned patients met the study criteria; (2) The nurse would then
inquire whether the patient was interested in participating in a music therapy trial implementation; (3) Upon agreeing to participate, the investigator approached the patient to explain the process further, and answer any questions or concerns. The patients that agreed to participate were sequentially assigned a number that was used as an identifier on all surveys and assessment forms.

Anxiety of each patient was evaluated utilizing pre and post-survey analysis. All participants were initially given a survey to assess baseline anxiety levels (see appendix xiii). Patients were then allowed to select and listen to a provided database of music playlists via individual Mp3 players. After 20 minutes, patients were given post surveys to reassess their affect (See appendix xiv). Patients were allowed to continue to listen to music until they were taken back to the operating room.

Evaluation of the project was facilitated through examination of anxiety scores obtained from patient surveys and post-op visits. Staff was encouraged to provide insight with regards to the project, and submit suggestions directly to the primary investigator throughout the implementation process.

FRAMEWORK/IMPLEMENTATION MODEL

The Ace Star Model of Knowledge Transformation was selected to guide implementation of music therapy within the preoperative area at St. Francis Health System. The framework supports five categories as guidelines from which an implementation strategy should be based; such categories are: (1) Discovery, (2) Summary, (3) Translation, (4) Integration, (5) Evaluation (See Appendix vi).
Discovery

As outlined in the overview section of this manuscript, an exhaustive search of current literature was conducted in order to create a comprehensive database of information on music therapy from which conclusions could be made. Articles utilized ranged from individual random controlled trials (RCTs) to systematic reviews of multiple RCTs, and literature reviews. As previously described, each article was evaluated for strength of content and analysis, and rated according to the Level of Evidence Scale.32 (See appendix ii)

Summary

Current literature recommends the use of music as an intervention to relieve patient anxiety.1-24,26,30 All of the RCTs included in the literature review, with a total experimental sample N=1387, reported significant decreases in subjective anxiety levels. The inclusion of music within healthcare practice has the ability to promote patient autonomy and enhance patients’ surgical outcomes.14,20

Translation

The focus of this section is to provide further insight into the recommended intervention of music therapy as a means to minimize preoperative anxiety. The steps outlined below are congruent with the Ace Star Model clinical practice guidelines (CPGs).31

First, it is important to adequately assess and treat preoperative patient anxiety.1 Assessment of individual psychological status has a high element of subjectivity, thus the use of standardized tools is a key element to reduce discrepancies among care providers.1,27-29 Multiple tools are available such as the STAI, VAS, and OAAS scales that have been clinically proven to
accurately assess the level of anxiety in patients.\textsuperscript{27-29} While it is recommended to use proven evaluation tools, specific patient surveys were created and utilized for this pilot intervention (see appendix xiii-xiv).

Second, it is beneficial to provide a variety of music that is not anxiety provoking, yet amiable to patients’ preferences.\textsuperscript{8} To gain perspective on the effects of music as a single care measure, those that received preoperative anxiolytic medication were excluded from the process.

Third, by allowing patients to choose their music, the element of autonomy can be provided for, resulting in additional therapeutic effects.\textsuperscript{5} Of the patients that chose to listen to music, all of them indicated that music selection was an important factor with regards to effectiveness of relaxation overall. The variables regarding this topic will be further discussed in the results and conclusions section.

Fourth, assessing staff members’ perceptions and encouraging participation is a key element to the success of the implementation process. Promoting informal communication will ensure that suggestions are provided and changes can be made to streamline the overall process.\textsuperscript{31}

Fifth, the risk for equipment malfunction and maintenance of an adequate music database necessitates a designated task leader to ensure patient safety and continuity of the intervention. During the pilot implementation of music therapy, there were no reports of equipment malfunction.

Sixth, the appropriate start up equipment such as players, head phones, and cleaning supplies must be obtained. The initial costs associated with implementing music therapy would be those associated with purchasing the players and downloading the appropriate music. Costs

\textsuperscript{1,4,8,9,11,13,14,16-18}
may also be incurred with regards to storing the music players and music. The type of device chosen was based upon the current available resources at St. Francis Health System. Wireless internet was available, but due to security threats, wireless music databases were not accessible. MP3 players were utilized and downloaded with a variety of music playlists. This minimized storage space and accommodated individual preferences among patients. Because music is a commonality among the general population, staff required very little education on the use of the players. The costs associated with implementation of the pilot intervention were approximately $45.00 per player, $10.00 per set of head phones, and $250.00 per year for new music.

Integration

According to the Ace Star Model, appropriate communication both through “formal and informal” channels is essential for proper integration of new procedures. Partaking in formal communication by gaining administrative approval for the proposed intervention of music therapy within the preoperative arena is the first step to solidifying it as a facility based intervention.

Informal communication occurred by obtaining baseline assessment of staff via pre implementation surveys which determined aptitude for participation in music therapy within the preoperative arena. Following initial assessment of staff, a brief overview of the literature review and recommended intervention of music therapy was given. In addition, nurses were asked to assist with the pilot implementation by screening potential candidates who met the aforementioned convenience sample criteria (see appendix xvi). The purpose of the nurses’ initial screening was to ensure patient privacy. The preoperative staff had a 100% (10/10) participation rate. If patients displayed interest, the primary investigator presented the initial
survey and music to them as previously described in the implementation plan (see appendix xviii and xiii).

RESULTS

Out of 20 possible candidates, 11 elected to participate and listen to music. All 11 individuals completed the initial patient survey. Two out of the 11 music participants opted to stop listening to music for the following reasons: (1) The patient wished to speak to a friend that was along with her; (2) The patient had a child who required her attention while waiting. The remaining 9 individuals listened to music for 20 minutes and then completed the second patient survey (see appendix xiv). If the patients had more time to wait before they were taken back to the OR, they were allowed to continue listening. Eight of the 9 patients elected to continue to listen up until the OR staff came to take them for their procedure. Music was not continued beyond the preoperative area. Participant assessment was completed with subjective patient evaluations during postoperative visits in the discharge area (see appendix xvii). Subjective comments obtained from the postoperative visits solicited no negative suggestions or opinions with regards to music therapy.

Evaluation of the 11 pre-music surveys indicated high levels of initial anxiety, with 91% of patients reporting feeling anxious. Four participants stated that they would describe themselves as being anxious individuals. Of the total sample (N=11) only three individuals indicated that this was their first surgery; thus, it seems that previous surgical experience doesn’t alleviate preoperative anxiety. All patients (100%) indicated that they found the preoperative atmosphere to be enjoyable. Some patients reported being scared to have surgery (55%), yet 91% of participants felt comfortable and confident with their care providers. Initially only 55% of
patients felt that music would help to alleviate some of their anxiety; however, post music, 78% of patients indicated that music helped, and that they would prefer to continue to listen in the future. After listening to music, 89% of participants would recommend that it be made available to all patients, and 78% of the total sample indicated that music selection is important. Changes suggested from patients were related to the type of music available, with two requests for Christian music, and another request to notify patients that they can bring their own music prior to the surgery.

Ten out of ten staff members agreed that anxiety affects patients’ responses to surgery and that anxiety is important to treat and alleviate prior to surgery. Ninety percent of staff members felt that patients with elevated levels of anxiety were prone to more negative outcomes. Current anxiolytic measures are sufficient according to 70% of nurses, with two individuals indicating indifference and one person expressing a need for improvement. The majority of nurses (70%) were undecided with regards to the effects of music on patient anxiety; the remaining 30% felt that music would be beneficial. Seven out of ten nurses felt that giving patients the option to listen to music and allowing them to choose the genre would improve individual autonomy. Of all staff members assessed, 100% reported improved job satisfaction when patient outcomes were optimized. Staff suggested allowing all individuals the option of listening to music, not just female gynecological patients. In addition, preoperative nurses felt that music would benefit those who were waiting alone.

**EVALUATION**

Continuous evaluation is essential to sustain the use of music therapy. Pre-intervention anxiety analysis served as a baseline from which post intervention results could be measured.
The goal of providing music to patients was to improve subjective and objective patient outcomes, in addition to optimize staffs’ ability to care for their patients. By utilizing the survey scores in conjunction with post-op assessments, the unit was able to observe direct improvements.

The implementation process of music therapy was elicited in an efficient and successful manner. Bias was associated with patient data collection in that the primary investigator was aware the patient would fill out the survey and listen to music. The presence of the primary investigator, patient family members, and health care associates may have swayed patient responses on the questionnaires. Furthermore, the presence of the investigator may have put pressure on the patient to rush through the surveys or respond to questions differently. It was noted that two surveys appeared to have contradictory answers, which were assumed to be from either a lack of understanding the survey format, or haste.

As previously mentioned, standardized anxiety assessment tools should be utilized on each patient. The surveys used in this pilot intervention have not been previously tested for validity, thus results may not be as accurate as those obtained from validated other tools.

There was a 55% participation rate was noted, indicating that not all patients wanted to listen to music. Many of these individuals had others with them in the room and would rather socialize. None of the patients reported negative feelings regarding the environment or the staff. Results indicated that previous surgical experience had minimal effect on preoperative anxiety rates; thus, individual preference seemed to dictate aptitude for participation.

Overall subjective evaluation of staff indicated that they were open to music therapy as another option to minimize preoperative anxiety. Positive feedback will keep staff motivated to use music alone or as an adjunctive intervention. A continuous evaluation process that includes
staff and patient input will ensure that the project is sustained. Ideally, for this pilot implementation, a second evaluation of staff approximately six months post initial assessment would be conducted to monitor for changes in perceptions.

**IMPLICATIONS**

Issues related to the implementation process arose primarily from obtaining initial approval for the pilot intervention. It was assumed that approval would be gained within 2-3 months; however, the time frame was exceeded by 3 more months resulting in a 6 month delay.

Because the pilot was only implemented for three days, the implementation process was not solidified within the unit. A music therapy policy should be created based upon a framework devised as a result of a continuation of the intervention for a longer period of time. This would allow for certain barriers of implementation to arise and be worked out prior to constructing a concrete process.

Overall, the framework allowed for a smooth transition of evidence-based clinical recommendations to actual nursing practice. Because of the short time frame of implementation, no alterations in the initial process are suggested. At this time music therapy is not currently available in the Natalie Outpatient Surgery Center, but the implementation strategy utilized for this pilot implementation could be believed to result in the addition of an intervention that can successfully alleviate patient anxiety and improve overall patient satisfaction. Music therapy is a simple and cost effective intervention that can positively affect patients’ surgical experience and enhance staff satisfaction.

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Music Therapy for Preoperative Anxiety


