

# **The Effects of Music on Anxiety Levels in Surgical Waiting Rooms for Family and Friends**

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### **Abstract**

Preoperative anxiety has been proven to cause complications both during and after the procedure. These complications range from aggressive behavior to hemodynamic instability. One factor that may impact preoperative patient anxiety is the anxiety of the family members and friends who accompany the patient. Current literature shows a strong correlation between music and decreased anxiety in family members and friends. Therefore, this project is a quality improvement project to provide potential benefits of using music in waiting rooms and by measuring the different anxiety levels between the two groups. Advanced Aesthetics was chosen as the site for the scholarly project data collection. Working with the key players to identify possible limitations helped the researchers understand the background of the business and the environment involved in observation. Data was collected on 8 days, 4 days with music playing and 4 days without music playing. Each participant was asked to fill out a State Trait Anxiety Inventory (STAI). An independent two sample t-test was used for data analysis to compare the difference between the music group and the non-music group. Statistical analysis was completed on both the state anxiety scores and the trait anxiety scores between the music group and the non-music group. Low participation yielded results that were not statistically significant in the state anxiety scores when music was played versus when music was not played. Overall, the project was well received by both the facility where the study occurred as well as those that did participate. This study can be used for an evaluation of evidence-based recommendations on the use of music in waiting room and its effect on anxiety.

*Keywords:* Acute, anxiety, music, environment, feasibility

## Table of Contents

<i>The Effects of Music on Anxiety Levels in Surgical Waiting Rooms for Family and Friends...</i>	<i>1</i>
<i>Acknowledgements .....</i>	<i>2</i>
<i>Abstract .....</i>	<i>3</i>
<i>Tables and Figures .....</i>	<i>6</i>
Table 1 – Music Day Participant Scores .....	6
Table 2 – Non-Music Day Participant Scores .....	6
Table 3 – Descriptive Statistics for State Anxiety Scores .....	7
Table 4 – Descriptive Statistics for Trait Anxiety Scores .....	7
<i>Introduction .....</i>	<i>8</i>
<i>Section One: Problem and PICOT Questions .....</i>	<i>8</i>
Significance & Background of Clinical Problem .....	8
PICOT Search Format Questions .....	9
<i>Section Two: Literature Review .....</i>	<i>10</i>
Search Strategies .....	10
GRADE Criteria .....	10
Literature Review and Synthesis .....	11
Impact of Families and Friends on Patient Anxiety .....	11
Benefits of Music Use .....	12
Music Method and Style .....	12
<i>Section 3: Methodology .....</i>	<i>13</i>
Project Aims .....	13
Methods .....	13
Planning and Procedures .....	15
Planning .....	15
Implementation .....	16
Barriers and Facilitators .....	16
Procedures to Sustain .....	17
Timeline .....	17
<i>Section 4: Results .....</i>	<i>17</i>
<i>Section 5: Discussion &amp; Implications .....</i>	<i>18</i>
Discussion .....	18
Recommendations .....	19
Applicability to Practice/Contribution to Professional Growth .....	20
Limitations .....	20
Conclusion .....	21
<i>Section 6: Dissemination .....</i>	<i>21</i>

<i>References.....</i>	<i>22</i>
<i>Appendix A - State-Trait Anxiety Inventory.....</i>	<i>26</i>
<i>Appendix B – Matrix Tables .....</i>	<i>30</i>
<i>Appendix C - Participation Letter of Invitation .....</i>	<i>36</i>
<i>Appendix D - SRC Approval and IRB Determination .....</i>	<i>37</i>
<i>Appendix E - Final Scholarly Project Timeline .....</i>	<i>40</i>

## Tables and Figures

**Table 1 – Music Day Participant Scores**

<b>Music Days Participants</b>	<b>State Anxiety Score (Form Y-1)</b>	<b>Trait Anxiety Score (Form Y-2)</b>	<b>Age</b>
<b>1</b>	31	53	35
<b>2</b>	32	34	48
<b>3</b>	30	35	43
<b>4</b>	36	51	65
<b>5</b>	28	22	34
<b>6</b>	33	36	18
<b>7</b>	37	37	54
<b>8</b>	23	48	34

**Table 2 – Non-Music Day Participant Scores**

<b>Non-Music Day Participants</b>	<b>State Anxiety Score (Form Y-1)</b>	<b>Trait Anxiety Score (Form Y-2)</b>	<b>Age</b>
<b>1</b>	36	41	66
<b>2</b>	38	34	56
<b>3</b>	34	35	54
<b>4</b>	25	29	No Age Given
<b>5</b>	20	20	58
<b>6</b>	26	33	45
<b>7</b>	20	23	45
<b>8</b>	20	27	81
<b>9</b>	20	24	34

**Table 3 – Descriptive Statistics for State Anxiety Scores**

<i>Music Days</i>	<i>Column1</i>	<i>Non-music Days</i>	<i>Column2</i>
Mean	31.25	Mean	26.556
Standard Error	1.578	Standard Error	2.501
Median	31.5	Median	25
Mode	N/A	Mode	20
Standard Deviation	4.464	Standard Deviation	7.502
Sample Variance	19.929	Sample Variance	56.278
Kurtosis	0.589	Kurtosis	-1.563
Skewness	-0.631	Skewness	0.618
Range	14	Range	18
Minimum	23	Minimum	20
Maximum	37	Maximum	38
Sum	250	Sum	239
Count	8	Count	9

**Table 4 – Descriptive Statistics for Trait Anxiety Scores**

<i>Music Days (n=8)</i>	<i>Column1</i>	<i>Non-music Days (n=9)</i>	<i>Column2</i>
Mean	39.5	Mean	29.556
Standard Error	3.689	Standard Error	2.249
Median	36.5	Median	29
Mode	N/A	Mode	N/A
Standard Deviation	10.433	Standard Deviation	6.747
Sample Variance	108.857	Sample Variance	45.528
Kurtosis	-0.524	Kurtosis	-0.728
Skewness	-0.181	Skewness	0.234
Range	31	Range	21
Minimum	22	Minimum	20
Maximum	53	Maximum	41
Sum	316	Sum	266
Count	8	Count	9

## **Introduction**

A key part of caring for patients under anesthesia is continuously monitoring with a goal of sustaining physiologic homeostasis and hemodynamic stability (Falk & Fleisher, 2020).

Preoperative anxiety can alter hemodynamic stability in the postoperative period (Ali et al., 2014; Millett & Gooding, 2017). Patients that experience preoperative anxiety are at a greater risk of injuring themselves or staff, increased pain perception, and autonomic hyperactivity (Banchs & Lerman, 2014; Leske, 1998; Millett & Gooding, 2017). This leads to increased cost of care due to a prolonged length of stay (Banchs & Lerman, 2014; Leske, 1998; Millett & Gooding, 2017). The anxiety experienced by family members and friends can impact the patients' preoperative anxiety levels (Leske, 1998; Millett & Gooding, 2017). Music is a simple, cost-effective intervention that can be implemented to help decrease anxiety levels in family members and friends and, as a result, reduce anxiety in patients (Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997; Tilt et al., 2013).

### **Section One: Problem and PICOT Questions**

#### **Significance & Background of Clinical Problem**

The prevalence of preoperative anxiety among patients has been found to be between 51% and 90% (Akinsulore et al., 2015; Ebirim & Tobin, 2010; Kuzminskaite et al., 2019; Mulugeta et al., 2018). Preoperative anxiety has a number of postoperative complications for patients including aggressiveness upon recovery, increased perception of pain, and abnormal deviations of vital signs from baseline (Ali et al., 2014; Millett & Gooding, 2017; Mulugeta et al., 2018). While the most employed and effective intervention for preoperative anxiety involves pharmacological treatments, not all patients can receive these anxiety-reducing medications due to age, comorbidities, medical status, or medication interactions (Ali et al., 2014; Cooke et al.,



2005). Family members and friends have a significant influence on patient anxiety, as family member and friend anxiety and projection of fear greatly impacts the patient by adding to his or her already anxious state (Leske, 1998; Millett & Gooding, 2017). For these reasons, it is imperative to patient-centered care to utilize nonpharmacological interventions that can alleviate family member and friend anxiety levels (Ali et al., 2014; Leske, 1998; Millett & Gooding, 2017). In an effort to decrease family member and friend anxiety levels, creating a musical environment in waiting rooms can be implemented as a standard of care (Carmichael & Agre, 2002; Dimopoulos-Bick et al., 2019; Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997; Tilt et al., 2013). Music can be delivered via speakers evenly distributed in the room, provided through headphones, or performed by live musicians (Dimopoulos-Bick et al., 2019; Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997; Tilt et al., 2013). Key benefits of this intervention include its low-cost and the simplicity of standardization which can improve family member and friend experiences resulting in decreased anxiety levels (Carmichael & Agre, 2002; Dimopoulos-Bick et al., 2019; Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997; Tilt et al., 2013).

### **PICOT Search Format Questions**

Two questions in PICO format were used to look at the clinical problem and the clinical innovation. The first question addresses the clinical problem: Among family members and friends of patients undergoing outpatient procedures (P), does the use of music (I) make a difference in the reported anxiety levels (O)? The second question looks at the clinical innovation: In family members and friends of patients undergoing outpatient procedures at Advanced Aesthetics, (P) do those that listen to music (I), compared to those who do not (C), report a difference in anxiety levels (O)?

## Section Two: Literature Review

### Search Strategies

When conducting the search for this review, PubMed and Google Scholar were both used. The MeSH terms and combinations used were: *Music Therapy, Anxiety, Waiting Room, Family, Hospital, Professional-Family Relations, Music, Needs Assessment*. The MeSH combinations included *music therapy AND anxiety AND waiting room, music therapy AND anxiety AND family AND hospital, professional-family relations AND anxiety AND music, needs assessment AND family AND anxiety AND professional-family relations*. Search limiters included articles from 1990-present, articles written in the English language, and full text articles. Initially, 112 articles resulted from the search criteria. Article titles were reviewed for pertinence, reducing the usable articles to 54. The inclusion criteria included studies focusing on patient and family member preoperative anxiety. The exclusion criteria included palliative and hospice care, newborn intensive care unit, chronic pain, pregnancy, dementia, cancer, and chronic illness. Abstracts were then evaluated for relevancy which reduced the usable articles to 16.

### GRADE Criteria

The Grading of Recommendations, Assessment, Development and Evaluations (GRADE) criteria was used in rating the combined level of evidence in support of music therapy reducing the number of complications after surgery as a result of reducing preoperative anxiety within patients and family members and friends. The level of evidence was rated down by 2 points due to the risk of bias resulting from invalid instruments, carryover effects, and incomplete follow up. The evidence is undetected and strongly suspected, which decreased the quality rating by 1.

Overall, the GRADE level of evidence is low and correlates with the consistent dose response gradient in support of clinical practice recommendation.

### **Literature Review and Synthesis**

The effect of music on patients is well documented; however, patient support systems, such as family and friends, may also benefit from music provided in waiting rooms (Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997; Tilt et al., 2013; Thompson et al., 1996). This review has several focal points: for the impact of friends and families on patient anxiety; rationale behind music use and its benefits; and most beneficial styles of music for anxiety reduction. The literature on these topics is presented through different methods, yet they share the same concept of music being a successful intervention for family members' anxiety levels.

#### **Impact of Families and Friends on Patient Anxiety**

Family members and friends can have multiple impacts on patients and healthcare facilities alike (Leske, 1998; Routhieaux & Tansik, 1997). When visitors have less anxiety, they have a favorable influence on the patient's anxiety, leading to better patient outcomes (Leske, 1998; Millett & Gooding, 2107). However, a gap in the research has been identified when it comes to implementing interventions in regard to the anxiety levels in visitors of patients (Holm & Fitzmaurice, 2008; Leske, 1998; Tilt, et al., 2013). Exploring the impact of visitors on patient preoperative anxiety has the potential to impact postoperative pain control, which has been correlated with shorter lengths of stay (Boeke et al., 1991), and. shorter lengths of stay, in turn, result in decreased cost of care. These factors identified in the literature support further intervention analysis to improve quality of patient care by more intentionally considering the care of family and friends (Ali et al., 2014; Millett & Gooding, 2017; Mulugeta et al., 2018).

### **Benefits of Music Use**

The use of music has been shown to have positive impacts in many different areas of healthcare including oncology centers, surgical arenas, and intensive care units (Cooke et al., 2005; Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997; Tilt et al., 2013). Music is a successful intervention in reducing anxiety due to its influence on the autonomic nervous system, specifically the parasympathetic nervous system (Cooke et al., 2005; Routhieaux & Tansik, 1997). Music effectively distracts the brain and draws the awareness to other more pleasant and relaxing thoughts and experiences (Cooke et al., 2005; Routhieaux & Tansik, 1997). These findings support the reduction of anxiety levels through the use of music as opposed to relying solely on pharmacological interventions.

### **Music Method and Style**

One study focused on the use of personalized playlists, using Apple music and/or iTunes played through headphones (Dimopoulos-Bick et al., 2019). While personalized playlists may be the most effective intervention in reducing self-reported anxiety, there are limitations such as cost, cleanliness, and practicability (Dimopoulos-Bick et al., 2019; Tilt et al., 2013). Multiple authors agreed the most cost-effective, sanitary way to deliver music was by utilizing hidden portable speakers throughout the waiting room (Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997; Tilt et al., 2013). All studies that utilized music played through speakers aimed at a more relaxing style of music (classical music and piano sonatas) with tempos between 60 and 80 beats per minute (Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997). These studies all proved to be successful in decreasing visitor anxiety levels based on statistical analysis (Dimopoulos-Bick et al., 2019; Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997; Tilt et

al., 2013). However, while music has shown to be effective, the optimal genre or duration of music has not been determined.

### **Section 3: Methodology**

#### **Project Aims**

The primary aim of this project was to measure the anxiety levels of family and friends in a waiting room when music is played and when music is not played at Advanced Aesthetics in Orlando, Florida. The project objectives are delineated below.

1. Measure anxiety levels, using the State Trait Anxiety Inventory (STAI) validated tool, in family members and friends in the waiting room at Advanced Aesthetics while music is played over the course of 4 days in Spring of 2022.
2. Measure anxiety levels, using the STAI validated tool, in family and friends in the waiting room at Advanced Aesthetics while music is not played over the course of 4 days in Spring of 2022.
3. Determine the difference in the measured anxiety levels on the days when music is played versus the days when music is not played by August of 2022.
4. Make recommendations, based on data analysis, on the use of music in waiting rooms for family and friends of patients undergoing outpatient procedures by March of 2023.

#### **Methods**

This project is a quantitative quality improvement and quality assessment study design. This design aims to provide potential benefits in the process of waiting room environments. The scholarly project took place at Advanced Aesthetics in Orlando, Florida.

The project had a sample size of 17 participants. Participants were included while they were waiting in a waiting room for their loved one to have a procedure done and, also, those

patrons that were older than 18 years. Participants were unable to participate if they were listening to their own music through headphones and, also, anyone younger than 18 years of age. Sample size was impacted by the number of outpatient procedures scheduled during the times of data collection.

The State Trait Anxiety Inventory (STAI) validated tool was used in data collection for this project. This tool was created by Charles Spielberger with collaboration from R. L. Gorsuch and R. E. Lushene in 1966 and has since undergone a revision in 1983, and also has been translated into 48 languages (APA Staff, 2011; Butcher et al., 1998; Zsido et al., 2020). The STAI validated tool has been used in more than 16,000 studies since its creation and continues to provide consistent validity and reliability (APA Staff, 2011; Julian, 2011; Zsido et al., 2020). When interpreting the STAI scores, a higher score indicates more anxiety and a lower score indicates less anxiety (Julian, 2011; Kayikcioglu et al., 2017). To further categorize the scores, a common scale used includes the following: 20-37 indicating no or low anxiety, 38-44 indicating moderate anxiety, and 45-80 indicating severe anxiety (Kayikcioglu et al., 2017). The STAI was completed by paper and pencil by participants and includes 40 questions aimed at assessing trait and state anxiety (APA Staff, 2011). This tool was purchased from the current publisher, Mind Garden for use in this project. The STAI can be found in Appendix A at the end of this paper.

The implementation strategy of this project included staff at Advanced Aesthetics handing out the STAI tool on procedure days (Tuesday and Thursday) over the time period of a month. The owners of this project spent a day at Advanced Aesthetics training the staff on use of the STAI and the purpose of the project to ensure adequate data collection protocol. During half of the data collection period (4 days), relaxing music was played via speakers set to a volume approved by the office manager. On the other 4 days, no music was played. Once patrons had

been separated from their loved one for 30 minutes, they were approached to fill out the STAI for data collection. This 30-minute time period allowed for the variable to have an effect, as well as standardized the time the variable was implemented. The data collection was performed by the staff at Advanced Aesthetics, and all participation in this study have remained anonymous. There was no need to have any identification of the participants. Upon completion, the participants were instructed to return their completed STAI to a folder at the check-in desk to maintain anonymity. Upon entry of data into Excel for analysis, data has been stored on a password protected computer. Upon completion of the project, the data will be deleted on the hard drive and the paper copies will be shredded and disposed of.

Participation was completely voluntary, and risks and benefits were shared with the participants via a participation agreement form. No informed consent was necessary due to the nature of this project.

An independent two sample t-test was used for data analysis to compare the difference between the group who sat in a musical environment versus the group who did not. A p-value of less than 0.05 was used as an indicator of being significant when analyzing the data. The testing between these two groups allowed comparison to be quantified with the same variable, being the anxiety level. Limitations to this method include variability between human interaction, which is impossible to fully standardize. However, validity of the data remained consistent while respectfully interacting with project participants.

## **Planning and Procedures**

### **Planning**

When selecting two key players, it was important to understand the role they would play regarding our study. The key players chosen included Amanda, the front desk manager, and

Catalina, the front desk assistant manager at Advanced Aesthetics. They provided helpful insight on the environment of the waiting room and the day-to-day flow of operations at the facility.

Their knowledge and experience helped develop a feasible plan based on predicted limitations.

Laura, the office manager, was essential to the implementation of this scholarly project. All approvals for the study went through her and her expertise on day-to-day management was imperative while planning. She believes music can make a difference in the environment of the waiting room and she was instrumental in the support of the project. She has been an important asset to the project by contributing to the planning process and predicting what barriers and limitations may be encountered.

### **Implementation**

In the fall of 2020, a proposal including the problem and PICOT questions was submitted. Searches were performed for articles applicable to our topic and a literature review was completed. In the spring of 2021, the topic was approved by AHU faculty. In the summer of 2021, Advanced Aesthetics was contacted for the approval of use of their facility for data collection and key players were identified and interviewed. During this time, methods were also proposed to Dr. Lukman for data collect and statistical analysis. Proposals were submitted to the SRC and the IRB. Approval was obtained in December of 2021. Data collection occurred in March of 2022. This was followed by data analysis, and will end in recommendations and dissemination.

### **Barriers and Facilitators**

Facilitators for this project include the key players. These key players have been crucial to the implementation and success of the scholarly project. They helped guide the project while working at Advanced Aesthetics and provided helpful insight with data collection.



Barriers that were encountered included small sample sizes, willingness to participate, the use of personal headphones, and minimal time for data collection.

### **Procedures to Sustain**

When taking steps to create a project that would be sustainable, we aimed to work with a willing facility, use a tool that was easily understood by participants, and used multiple data collection days to optimize participation. After statistical analysis was completed, it is recommended that more studies be completed based on the effectiveness of music in waiting rooms and its effect on anxiety levels on family members and friends.

### **Timeline**

Please see Appendix E for a complete project timeline.

## **Section 4: Results**

Over the course of 8 days of data collection, the final number of participants was 17. Each of the participants completed both the State Anxiety Form and the Trait Anxiety Form. The project objectives 1 and 2 were met by measuring anxiety scores for both a music group and a non-music group. The scores for each participant in the music group can be found in Table 1 – Music Day Participant Scores. For this group, the mean State Anxiety Score was 31.25 with a sample variance of 19.929, a maximum score of 37, and a minimum score of 23. For this group, the mean Trait Anxiety Score was 39.5 with a sample variance of 108.875, a maximum score of 53, and minimum score of 22. The scores for each participant in the non-music group can be found in Table 2 – Non-Music Day Participant Scores. For this group, the mean State Anxiety Score was 26.556 with a sample variance of 56.278, a maximum score of 38, and a minimum score of 20. For this group, the mean Trait Anxiety Score was 29.556 with a sample variance of

45.528. See Table 3 – Descriptive Statistics for State Anxiety Scores and Table – 4 Descriptive Statistics for Trait Anxiety Scores.

Regarding objective 3 in determining the difference in the measured anxiety levels on music days versus non-music days, there was no statistically significant data in regard to the State Anxiety Scores due to low sample size. The only statistically significant data received from this study was that between the group of participants on music days versus non-music days, the Trait Anxiety Scores were not equal. This was depicted with a test statistic of 14, a critical value of 15, and an alpha value of 0.05.

## **Section 5: Discussion & Implications**

### **Discussion**

The effects of anxiety on a patient undergoing a procedure have been well documented in creating negative outcomes. Many times the patient's own anxiety is compounded by the anxiety of family members and friends waiting with them in the preoperative areas. Music has been shown to help decrease anxiety levels in these types of situations, contributing, overall, to better patient outcomes. For this reason, this project aimed to demonstrate the effects that music could have on anxiety levels of family members and friends waiting in a waiting room environment. Regarding objective 1, the mean State Anxiety Score for the music group was 31.25, while the mean Trait Anxiety Score for the music group was 39.5. The maximum State Anxiety Score for the music group was 37, and the minimum was 23. The maximum Trait Anxiety Score for the music group was 53 and the minimum was 22. Regarding objective 2, the mean State Anxiety Score for the non-music group was 26.556, while the mean Trait Anxiety Score for the non-music group was 29.556. The maximum State Anxiety Score for the non-music group was 38 and the minimum was 20. The maximum Trait Anxiety Score for the non-music group was 41

and the minimum was 20. In reference to the Anxiety Scores, State Anxiety Scores measured the current state of anxiety of the participant and Trait Anxiety Scores measured the participant's baseline anxiety in their everyday life. Regarding objective 3, when looking at the scores, it is interesting to acknowledge that the group of participants on the music days had a mean Trait Anxiety Score of 39.5 while the non-music group of participants had a mean Trait Anxiety Score of 29.556. Thus, at baseline, the music day participants were much more anxious in their day to day lives, potentially impacting the way that they scored their State Anxiety. Comparing the difference between the music and the non-music group, the music group had a difference between their mean Trait Anxiety Scores and their mean State Anxiety Scores of 8.25; while the non-music group only had a difference of 3.0. Thus lending one to believe that music impacted the anxiety levels of those present on music days. However, it must be acknowledged that a high baseline State Anxiety Score could impact these differences in an unknown manner. A larger sample size would be able to delineate this difference more clearly and give a more accurate depiction of any true difference between the music group and the non-music group.

### **Recommendations**

After reviewing the results and the data analysis of this project, more evidence is needed to provide a clear delineation on the difference between providing music and not providing music in a waiting room setting. The sample size was small for this project; however, with a larger sample size, it is believed that this difference would be more clearly depicted. Though there was a lack of statistically significant evidence, the project was supported and well-received by the staff at Advanced Aesthetics and they plan to continue offering live music on their procedural days in their waiting room environment. Despite the data analysis results, there is no real disadvantage to the continuation of using music in waiting room environments. The

challenge of lack of participation in this project could be solved by increasing the length of time data collection occurred, as well as collecting data at multiple different facilities where patients undergo outpatient procedures. This was, unfortunately, not feasible for this project; however, going forward, this could be implemented in a different study without time restraints.

### **Applicability to Practice/Contribution to Professional Growth**

Sufficient evidence exists to support researching this nonpharmacological intervention of music, but there is a lack of implementation research (Dimopoulos-Bick et al., 2019; Routhieaux & Tansik, 1997). While anxiety may be difficult to observe and diagnose, music has been demonstrated as a successful intervention in decreasing anxiety. Therefore, it is time to employ the simple, cost-effective, and non-pharmacological use of music in waiting rooms and determine whether this should be a standard of care to improve postoperative outcomes (Holm & Fitzmaurice, 2008; Routhieaux & Tansik, 1997; Tilt et al., 2013).

### **Limitations**

The number of surgeries performed in a day provided a limitation regarding sample size. When there was a low number of procedures scheduled on a procedural day, fewer family members and friends were in the waiting room, directly impacting the sample size. Also, after speaking with staff, not all family members or friends remained in the waiting room while their loved one's procedure is going on. Many time family members and friends left to eat or get a coffee and then came back, decreasing the amount of participants, thus reducing the sample size. Recruitment for participation in the scholarly project also encountered limitations due to people listening to their own music through headphones.

## **Conclusion**

For medical professionals, patient safety and patient outcomes are of the utmost importance. For this reason, this project aimed to target a non-pharmacological intervention that could further promote better patient outcomes. Continuing work on this project's topic should be done to give further evidence to the successful intervention of music and its impact on anxiety levels. This project helped in jump-starting a quality improvement process that benefits not only patients, but family members and friends as well. It is hopeful that continued research will be done on not only the effectiveness and benefits of music, but on the implementation of music use in the healthcare setting.

## **Section 6: Dissemination**

The findings of this scholarly project will be disseminated in the Spring of 2023 at AdventHealth University. It is required for a degree of Doctor of Nurse Anesthesia Practice that an oral and poster presentation be completed and presented based on the findings and recommendations after completion of this scholarly project. The results will also be shared with the scholarly project committee.

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## Appendix A - State-Trait Anxiety Inventory

### State-Trait Anxiety Inventory for Adults

#### Self-Evaluation Questionnaire STAI Form Y-1 and Form Y-2

**Developed by Charles D. Spielberger**

in collaboration with R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

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# SELF-EVALUATION QUESTIONNAIRE STAI Form Y-1

Please provide the following information:

Name \_\_\_\_\_ Date \_\_\_\_\_ S \_\_\_\_\_

Age \_\_\_\_\_ Gender (Circle) **M** **F** T \_\_\_\_\_

## DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

NOT AT ALL  
SOMEWHAT  
MODERATELY SO  
VERY MUCH SO

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I feel calm.....  | 1 | 2 | 3 | 4 |
| 2. I feel secure .....                                     | 1 | 2 | 3 | 4 |
| 3. I am tense .....  | 1 | 2 | 3 | 4 |
| 4. I feel strained .....                                   | 1 | 2 | 3 | 4 |
| 5. I feel at ease .....                                    | 1 | 2 | 3 | 4 |
| 6. I feel upset .....                                      | 1 | 2 | 3 | 4 |
| 7. I am presently worrying over possible misfortunes ..... | 1 | 2 | 3 | 4 |
| 8. I feel satisfied .....                                  | 1 | 2 | 3 | 4 |
| 9. I feel frightened .....                                 | 1 | 2 | 3 | 4 |
| 10. I feel comfortable .....                               | 1 | 2 | 3 | 4 |
| 11. I feel self-confident .....                            | 1 | 2 | 3 | 4 |
| 12. I feel nervous .....                                   | 1 | 2 | 3 | 4 |
| 13. I am jittery .....                                     | 1 | 2 | 3 | 4 |
| 14. I feel indecisive.....                                 | 1 | 2 | 3 | 4 |
| 15. I am relaxed .....                                     | 1 | 2 | 3 | 4 |
| 16. I feel content .....                                   | 1 | 2 | 3 | 4 |
| 17. I am worried .....                                     | 1 | 2 | 3 | 4 |
| 18. I feel confused.....                                   | 1 | 2 | 3 | 4 |
| 19. I feel steady.....                                     | 1 | 2 | 3 | 4 |
| 20. I feel pleasant.....                                   | 1 | 2 | 3 | 4 |

# SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

Name \_\_\_\_\_ Date \_\_\_\_\_

## DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

ALMOST NEVER  
SOMETIMES  
OFTEN  
ALMOST ALWAYS

- |  |   |   |   |   |
|--|---|---|---|---|
| 21. I feel pleasant.....   | 1 | 2 | 3 | 4 |
| 22. I feel nervous and restless .....  | 1 | 2 | 3 | 4 |
| 23. I feel satisfied with myself.....  | 1 | 2 | 3 | 4 |
| 24. I wish I could be as happy as others seem to be .....  | 1 | 2 | 3 | 4 |
| 25. I feel like a failure .....  | 1 | 2 | 3 | 4 |
| 26. I feel rested .....  | 1 | 2 | 3 | 4 |
| 27. I am "calm, cool, and collected" .....   | 1 | 2 | 3 | 4 |
| 28. I feel that difficulties are piling up so that I cannot overcome them.....                       | 1 | 2 | 3 | 4 |
| 29. I worry too much over something that really doesn't matter.....                                  | 1 | 2 | 3 | 4 |
| 30. I am happy .....   | 1 | 2 | 3 | 4 |
| 31. I have disturbing thoughts .....   | 1 | 2 | 3 | 4 |
| 32. I lack self-confidence.....  | 1 | 2 | 3 | 4 |
| 33. I feel secure .....  | 1 | 2 | 3 | 4 |
| 34. I make decisions easily .....  | 1 | 2 | 3 | 4 |
| 35. I feel inadequate.....   | 1 | 2 | 3 | 4 |
| 36. I am content .....   | 1 | 2 | 3 | 4 |
| 37. Some unimportant thought runs through my mind and bothers me .....                               | 1 | 2 | 3 | 4 |
| 38. I take disappointments so keenly that I can't put them out of my mind.....                       | 1 | 2 | 3 | 4 |
| 39. I am a steady person.....  | 1 | 2 | 3 | 4 |
| 40. I get in a state of tension or turmoil as I think over my recent concerns<br>and interests ..... | 1 | 2 | 3 | 4 |

# State-Trait Anxiety Inventory for Adults Scoring Key (Form Y-1, Y-2)

Developed by Charles D. Spielberger in collaboration with R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

To use this stencil, fold this sheet in half and line up with the appropriate test side, either Form Y-1 or Form Y-2. Simply total the scoring **weights** shown on the stencil for each response category. For example, for question # 1, if the respondent marked 3, then the **weight** would be 2. Refer to the manual for appropriate normative data.

Form Y-1	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO	Form Y-2	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
1.	4	3	2	1	21.	4	3	2	1
2.	4	3	2	1	22.	1	2	3	4
3.	1	2	3	4	23.	4	3	2	1
4.	1	2	3	4	24.	1	2	3	4
5.	4	3	2	1	25.	1	2	3	4
6.	1	2	3	4	26.	4	3	2	1
7.	1	2	3	4	27.	4	3	2	1
8.	4	3	2	1	28.	1	2	3	4
9.	1	2	3	4	29.	1	2	3	4
10.	4	3	2	1	30.	4	3	2	1
11.	4	3	2	1	31.	1	2	3	4
12.	1	2	3	4	32.	1	2	3	4
13.	1	2	3	4	33.	4	3	2	1
14.	1	2	3	4	34.	4	3	2	1
15.	4	3	2	1	35.	1	2	3	4
16.	4	3	2	1	36.	4	3	2	1
17.	1	2	3	4	37.	1	2	3	4
18.	1	2	3	4	38.	1	2	3	4
19.	4	3	2	1	39.	4	3	2	1
20.	4	3	2	1	40.	1	2	3	4

## Appendix B – Matrix Tables

<p>Tilt, A. C., Werner, P. D., Brown, D. F., Alam, H. B., Warshaw, A. L., Parry, B. A., Jazbar, B., Booker, A., Stangenberg, L., Fricchione, G. L., Benson, H., Lillemoe, K. D., &amp; Conrad, C. (2013). Low degree of formal education and musical experience predict degree of music-induced stress reduction in relatives and friends of patients: A single-center, randomized controlled trial. <i>Annals of Surgery</i>, 257(95), 834-838.</p> <p>Routhieaux, R. L. &amp; Tansik, David A. (1997). The benefits of music in hospital waiting rooms. <i>The Healthcare Supervisor</i>, 16(2), 31-40.</p>					
Purpose	Variables	Setting/Subjects	Measurement and Instruments	Results	Evidence Quality
<p><b>Study One:</b> Identify factors to help predict efficacy of music therapy relaxation.</p> <p><b>Study Two:</b> Impact of music playing in hospital waiting rooms.</p>	<p><b>Study One:</b> One hour of classical music in the background versus no music. Also consideration taken as to education levels.</p> <p><b>Study Two:</b> Stress levels and perception of customer service.</p>	<p><b>Study One:</b> 169 relatives and/or friends of a patient waiting in a waiting room</p> <p><b>Study Two:</b> 162 questionnaires of people in a waiting room in a hospital in the southwestern United States.</p>	<p><b>Study One:</b> Spielberger State-Trait Anxiety Inventory, Music Experience Questionnaire, and a demographic survey</p> <p><b>Study Two:</b> Questionnaire based on the Spielberger State-Trait Anxiety Inventory, demographics survey, and survey on perception of customer service.</p>	<p><b>Study One:</b> Music intervention experienced a 9.8% decrease in overall anxiety while control group had no change (P=0.001). Higher education was inversely correlated with music therapy effectiveness.</p> <p><b>Study Two:</b> Higher average stress measures found in non-music group. P&lt;.01</p>	<p>Methodological flaws:</p> <p><b>Study Two:</b> Inability to control the number of days people were present in the waiting room in a row. This may have skewed results as some days with music and some without.</p> <p>Inconsistency:</p> <p><b>Study One:</b> Variability in music preferences could affect results.</p> <p><b>Study Two:</b> Variability in music preferences as there was no choice in music listened to. Wait times also skewed data as they contributed to stress levels.</p> <p>Indirectness: None</p> <p>Imprecision: None</p> <p>Publication Bias: None</p>
Design				Implications	
<p><b>Study One:</b> Randomized Control Trial</p> <p><b>Study Two:</b> A Randomized Clinical Trial</p>				<p><b>Study One:</b> There was a decrease in anxiety with music playing, so that may be an effective intervention.</p> <p><b>Study Two:</b> Music therapy can be a positive intervention for stress reduction in waiting rooms.</p>	

Millet, C. R., & Gooding, L. F. (2017). Comparing Active and Passive Distraction-Based Music Therapy Intervention of Preoperative Anxiety in Pediatric Patients and Their Caregivers. *Journal of Music Therapy*, 54(4), 460-478.

Jarred, J. D. (2003). The effect of live music on anxiety levels of persons waiting in a surgical waiting room as measured by self-report.

Purpose	Variables	Setting/Subjects	Measurement and Instruments	Results	Evidence Quality
<p><b>Study One:</b> Effectiveness of distraction-based music therapy interventions on anxiety levels in pediatric patients and their caregivers.</p> <p><b>Study Two:</b> Effectiveness of live music on anxiety levels for people waiting in surgical waiting rooms.</p>	<p><b>Study One:</b> Active and Passive Music Therapy Interventions. Pediatric anxiety and caregiver anxiety.</p> <p><b>Study Two:</b> Direct music group in which the audience could request songs to be played. Indirect music group, in which they heard live music but had no ability to request songs. And a control group, in which there was no live music provided.</p>	<p><b>Study One:</b> Pediatric patients undergoing ambulatory surgery and their caregivers at a university-affiliated healthcare center.</p> <p><b>Study Two:</b> 192 participants aged 18 and older in the main surgical waiting room at Tallahassee Memorial HealthCare.</p>	<p><b>Study One:</b> Modified Yale Preoperative Anxiety Scale, The State-Trait Anxiety Inventory Y-6 Item.</p> <p><b>Study Two:</b> Self-report using a Visual Analog Scale. Post-test only design. ANOVA used to measure any statistical significance between groups.</p>	<p><b>Study One:</b> ANCOVA: Pediatric Patients P=0.303 Caregivers P=0.827 Pediatric pre versus post music therapy intervention on anxiety levels P = 0.001 Caregivers pre versus post music therapy intervention on anxiety P = 0.000</p> <p><b>Study Two:</b> No significant difference in anxiety scores, P = 0.27. No significant difference in stress scores, P=0.277. No significant difference in worry scores, P=0.578. Significant difference was found in relaxation scores, P&lt;.05.</p>	<p>Methodological flaws: <b>Study One:</b> Small sample size, poor generalizability. Timing issues with minimal time to actually test hypothesis. <b>Study Two:</b> Imposing negative connotations on participants based on how the questionnaire was written.</p> <p>Inconsistency: <b>Study One:</b> the lack of a no-contact control group, medical staff expertise, and the use of sedative premedication</p> <p>Indirectness: None</p> <p>Imprecision: <b>Study One:</b> Imprecise implementation between the active and passive interventions. <b>Study Two:</b> None</p> <p>Publication Bias: None</p>
Design				Implications	
<p><b>Study One:</b> Case Study</p> <p><b>Study Two:</b> Randomized Control Study</p>				<p><b>Study One:</b> Music therapy can be a positive intervention for children and caregiver's anxiety.</p> <p><b>Study Two:</b> Participation in music selections in the waiting room can decrease worry.</p>	

Holm, L. & Fitzmaurice, L. (2008). Emergency department waiting room stress: Can music or aromatherapy improve anxiety scores? <i>Pediatric Emergency Care</i> , 24 (12), 836-838					
Hartling, L., Newton, A. S., Liang, Y., Jou, H., Hewson, K., Klassen, T. P., & Curtis, S. (2013). Music to reduce pain and distress in the pediatric emergency department: A randomized clinical trial. <i>JAMA Pediatrics</i> , 167(9), 826-835.					
Purpose	Variables	Setting/Subjects	Measurement and Instruments	Results	Evidence Quality
<p><b>Study One:</b> Effects of music, aromatherapy, and a combination on anxiety levels of adults in a pediatric emergency department waiting room.</p> <p><b>Study Two:</b> Managing pain and distress with music compared with standard care</p>	<p><b>Study One:</b> Music, Aromatherapy, a combination of music and aromatherapy, and no interventions.</p> <p><b>Study Two:</b> Primary Outcomes: measuring behavioral distress</p> <p>Secondary Outcomes: child-reported pain, heart rate, parent and healthcare provider satisfaction, ease of performing the procedure, and parental anxiety</p>	<p><b>Study One:</b> A waiting room for adults bringing children into a pediatric emergency department</p> <p><b>Study Two:</b> 42 children ages 3-11 years old in a pediatric emergency department</p>	<p><b>Study One:</b> Spielberger state anxiety inventory as well as survey questions on recognition on aromatherapy and/or music.</p> <p><b>Study Two:</b> Observational Scale of Behavioral Distress-Revised</p>	<p><b>Study One:</b> Decrease in anxiety with music playing: <math>P = 0.017</math></p> <p>No difference in anxiety levels with aromatherapy: <math>P = 0.347</math></p> <p><b>Study Two:</b> <math>P &lt; .05</math> for less increase in distress in music group Pain scores increased in standard group and stayed same in music group. <math>P = .04</math></p>	<p>Methodological flaws:</p> <p><b>Study One:</b> None</p> <p><b>Study Two:</b> Unable to blind children, parents, and healthcare providers. Contamination between study groups</p> <p>Inconsistency:</p> <p><b>Study One:</b> Differences in wait times could have an impact on reported anxiety levels. Also, variability in music preferences could affect results.</p> <p><b>Study Two:</b> Variability in music preferences as there was no choice in music listened to.</p> <p>Indirectness: None</p> <p>Imprecision:</p> <p><b>Study One:</b> Imprecise application of aromatherapy</p> <p><b>Study Two:</b> None</p> <p>Publication Bias: None</p>
Design				Implications	
<p><b>Study One:</b> Randomized Control Trial</p> <p><b>Study Two:</b> A Randomized Clinical Trial</p>				<p><b>Study One:</b> There was a decrease in anxiety with music playing, so that may be an effective intervention. While aromatherapy had no effect and may not be effective.</p> <p><b>Study Two:</b> Music therapy can be a positive intervention for children and parent's distress and anxiety.</p>	



Thompson, N., Irwin, M. G., Gunawardene, W. M. S., & Chan, L. (1996). Pre-operative parental anxiety. <i>Anaesthesia</i> , 51(11), 1008-1012.					
Dimopoulos-Bick, T., Clowes, K. E., Conciatore, K., Haertsch, M., Verma, R., & Levesques, J. (2019). Barriers and facilitators to implementing playlists as a novel personalised music intervention in public healthcare settings in New South Wales, Australia. <i>Australian Journal of Primary Health</i> , 25(1), 31-36.					
Purpose	Variables	Setting/Subjects	Measurement and Instruments	Results	Evidence Quality
<p><b>Study One:</b> Identify causes of parental anxiety, as well as factors that increase and decrease that anxiety.</p> <p><b>Study Two:</b> Identify barriers and facilitators when incorporating the use of personalized playlists in public healthcare systems on a large scale.</p>	<p><b>Study One:</b> Age of child, presence of siblings, extent of surgery, previous exposure to anesthesia, parental occupation, parental education, monthly family income</p> <p><b>Study Two:</b> Personalized playlists, music available, cost associated with music and equipment, anxiety levels.</p>	<p><b>Study One:</b> 100 parents with children of 13 years old or less admitted for elective general orthopedic or dental surgery, at the Duchess of Kent Children's Hospital in Hong Kong.</p> <p><b>Study Two:</b> Study completed at 21 acute, sub-acute and primary healthcare settings in New South Wales, Australia in the year between June 2016 and June 2017. There were surveys with patients, family members, and staff (153), as well as focus groups with staff (21), and also document analysis of 37 documents.</p>	<p><b>Study One:</b> Leeds scale for self-assessment of anxiety</p> <p><b>Study Two:</b> Closed questions and Likert-type scale for responses. Focus groups containing staff members to gather opinions about facilitators and barriers to the use of personalized playlists.</p>	<p><b>Study One:</b> The Leeds scale identified diagnosable anxiety levels in 47% of parents.</p> <p><b>Study Two:</b> 75% of patients reported personalized playlists as a positive impact on experience. 41% of family members reported a difference in regards to the intervention.</p>	<p>Methodological flaws:</p> <p><b>Study One:</b> The Leeds questionnaire was developed and assessed in a Western population, so could be differences in culture.</p> <p><b>Study Two:</b> The cost of intervention was covered by the study, but would not continue funding after the study completion</p> <p>Inconsistency:</p> <p><b>Study One:</b> Measurements taken before formal pre-operative checks. Could sway anxiety levels if asking when they are waiting without their child.</p> <p>Indirectness: None</p> <p>Imprecision:</p> <p><b>Study Two:</b> Staff turnover was a barrier and caused delays in setting up equipment and helping volunteers.</p> <p>Publication Bias: None</p>
Design				Implications	
<p><b>Study One:</b> Case Study</p> <p><b>Study Two:</b> Randomized Control Study, Focus Group, and Document Analysis</p>				<p><b>Study One:</b> There is a need to educate and integrate interventions to help decrease anxiety levels in surgical waiting rooms.</p> <p><b>Study Two:</b> Even though positive outcomes are apparent with personalized playlists, there is the issue of cost and equipment for healthcare facilities to worry about.</p>	

Belland, L., Rivera-Reyes, L., & Hwang, U. (2017). Using music to reduce anxiety among older adults in the emergency department: A randomized pilot study. *Journal of Integrative Medicine*, 15(6), 450-455.

Cooke, M., Chaboyer, W., & Hiratos, M. A. (2005). Music and its effect on anxiety in short waiting periods: A critical appraisal. *Journal of Clinical Nursing*, 14(2), 145-155.

Purpose	Variables	Setting/Subjects	Measurement and Instruments	Results	Evidence Quality
<p><b>Study One:</b> Effectiveness of music therapy on anxiety levels of older ED patients.</p> <p><b>Study Two:</b> Looks at the methods and identifies issues with studies that examine the effect of music therapy on anxiety levels in short-term waiting rooms.</p>	<p><b>Study One:</b> Control group with routine care and no music. Study group received up to 60 minutes of music listening with routine care.</p> <p><b>Study Two:</b> Setting, research questions, design and sample, instruments, interventions and findings.</p>	<p><b>Study One:</b> Geriatric ED in an urban academic tertiary medical center with 32 study subjects over the age of 65.</p> <p><b>Study Two:</b> This study analyzed previous studies completed about the use of music therapy in decreasing anxiety in surgical waiting rooms.</p>	<p><b>Study One:</b> State-trait anxiety inventory at enrollment and one hour later.</p> <p><b>Study Two:</b> Critical appraisal of 12 studies that focus on the effect of music on anxiety waiting for procedures in short-stay settings conducted primarily in the United States, with four based in Hong Kong and one in Poland.</p>	<p><b>Study One:</b> No significant differences in enrollment STAI scores, <math>P=0.57</math>. STAI scores after an hour of music therapy compared to the control group were reduced, <math>P = 0.03</math></p> <p><b>Study Two:</b> Recommendations to use a more detailed approach as well as using more diverse populations.</p>	<p>Methodological flaws: <b>Study One:</b> Small sample size. A tablet was used for music listening, this could contribute to anxiety levels in subjects in that age group. The sole researcher was not blinded to randomization which could have led to bias in the second STAI survey administration.</p>
<p><b>Design</b></p> <p><b>Study One:</b> Randomized Pilot Study</p> <p><b>Study Two:</b> Critical Appraisal</p>				<p><b>Implications</b></p> <p><b>Study One:</b> Music intervention may be a successful intervention in reducing anxiety among older adults in the ED. <b>Study Two:</b> There are ways to strengthen the research conducted. Recommendations include using more detail in methods and results, and use more diversity in procedures and cultural groups.</p>	

Munafo, M. R. & Stevenson, J. (2001). Anxiety and surgical recovery reinterpreting the literature. <i>Journal of Psychosomatic Research</i> , 51, 589-596.					
Choy, Y. (2019). Acute procedure anxiety in adults: Epidemiology, clinical manifestations, and course. <i>Wolters Kluwer</i>					
Purpose:	Variables	Setting/Subjects	Measurement and Instruments	Results	Evidence Quality
<p><b>Study One:</b> This study focuses on screening, identifying, and trial and error fixes pertaining to acute procedural anxiety.</p> <p><b>Study Two:</b> Evaluate and interpret the association of preoperative anxiety and postoperative complications</p>	<p><b>Study One:</b> Gender, phobia, clinic, screening, treatment, surgery</p> <p><b>Study Two:</b> Psychological factors, mostly anxiety, and surgical recovery related to duration and quality of recovery</p>	<p><b>Study One:</b> Phlebotomy outpatient clinic with 5235 adults; 1275 diabetic patients from the Netherlands, and 43,093 adults self-reporting screening questionnaires.</p> <p><b>Study Two:</b> The literature reviewed included adults admitted for inpatient elective surgeries. 27 studies were reviewed.</p>	<p><b>Study One:</b> Dental phobias were measured with</p> <p>DSM-5 criteria. Change in Anxiety Levels, Measured by the State Trait Anxiety Inventory at enrollment and one hour later.</p> <p>Demographic data involving age of child in months, siblings, extent of surgery, previous anesthesia, parental occupation, parental education, and monthly income.</p> <p><b>Study Two:</b> Social Science Citation Index, Science Citation Index, Medline and Psychological Abstracts (PsycInfo) databases were used to find studies published. Observational studies that used the STAI index were used.</p>	<p><b>Study One:</b> Community-based studies estimate about 2- 5% of the population in the U.S. has either dental procedure anxiety or blood-injected-injury phobias.</p> <p><b>Study Two:</b> Self-reported preoperative state anxiety is positively correlated with self-reported postoperative pain with correlation coefficients of .18-.41.</p>	<p>Methodological flaws:</p> <p><b>Study One:</b> Self-reported phobias</p> <p><b>Study Two:</b> Self-reported anxiety and pain levels.</p> <p>Inconsistency:</p> <p><b>Study One:</b> Age or procedure.</p> <p><b>Study Two:</b> Populations or surgical procedure studied.</p> <p>Indirectness:</p> <p><b>Study One:</b> Variables, amount of participants, and study methods vary.</p> <p><b>Study Two:</b> None</p> <p>Imprecision</p> <p><b>Study One:</b> Screening questionnaires, statistical analysis from broad population in the Netherlands.</p> <p><b>Study Two:</b> None</p> <p>Publication Bias: None</p>
<b>Design</b>				<b>Implications</b>	
<p><b>Study One:</b> Review of Literature</p> <p><b>Study Two:</b> Review of Literature</p>				<p><b>Study One:</b> Further research required to identify preoperative anxiety, treatment options that could be standardized with consistency. <b>Study Two:</b></p> <p>Further research required to declare preoperative anxiety leads to poor postoperative outcomes.</p>	

### **Appendix C - Participation Letter of Invitation**

Dear Potential Participants,

Hello, we are student registered nurse anesthetists (SRNAs) at AdventHealth University in Orlando, Florida. We are asking for a few minutes of your time to participate in our scholarly project by using a brief self-reported instrument. The purpose of this project is to evaluate if there is a difference in anxiety levels with music versus without music when played in a waiting room for family members and friends of patients undergoing outpatient procedures. Anxiety levels will be measured with a single survey called the State Trait Anxiety Inventory (STAI).

Upon agreeing to participate in this scholarly project, you will be given the self-evaluation instrument. You may stop participating in this project at any point, should you choose to. There are no risks for you or your loved one if you choose to participate. This brief survey will be given to you 30 minutes after separating from your loved one when they are picked up by the preoperative nurse.

No personal information will be collected during your participation in this project. The benefit in participating in this project is contributing to quality improvement processes that help decrease anxiety levels of family members and friends during surgery. The alternative action is to not participate in this scholarly project and no further questions will be asked.

If you have any questions regarding this scholarly project, please contact us at the number provided below. Your time and consideration on this important matter is very appreciated.

Very Respectfully,

**Steven Fowler, BSN, RN, DNP, CRNA**

**Alexandra Gullledge, BSN, RN, CCRN, SRNA, (561) 348-4876**

**Brittney Wolford, BSN, RN, SRNA, (419)-467-1604**

Nurse Anesthesia Department

AdventHealth University Orlando, FL

## Appendix D - SRC Approval and IRB Determination



**Date:** December 28, 2021

**To:** Dr. Steven Fowler

**Re: NAP6121:** The Effects of Music on Anxiety Levels in Surgical Waiting Rooms for Family and Friends

The Scientific Review Committee has reviewed your research application and voted on the following decision:

- ☐ Approved as submitted
- ☒ Approved with recommendation(s)
- ☐ Approved pending required change(s)
- ☐ Change(s) required for resubmission

**Comments:**

**General:**

- This is a nice project. It is well planned and presented.
- We believe that this study has merit with potential for interesting findings, but we do not believe that the findings will be as helpful as they could be if the levels of anxiety prior to exposure to the music were factored in (such as with a pre-/post-music exposure survey). We also think that using more than one location would help improve the generalizability of the results.

**Data collection:**

- Specifically, who will be collecting data?
- Was a power analysis completed to determine how many subjects are needed to meet significance? If not, that should be considered.

**Study Design:**

- Will anyone with headphones on or otherwise distracted by electronic devices or telephone calls be excluded from participation in the study or just those listening to other music with headphones.

**Ethical considerations:**

- The sentence in the "letter of invitation" that states: "Should you have any concerns regarding your rights as a participant in this scholarly project, you may contact the AdventHealth Orlando Institutional Review Board at [AH.irm.general@adventhealth.com](mailto:AH.irm.general@adventhealth.com)" must be removed before beginning the study. The AH IRB has only made a determination that this project is not research. No approval process has taken place and there won't be any oversight of the project by the IRB. Therefore, it can't be mentioned in any project related documents.



**Stakeholders:** It is not completely clear who will be approaching individuals to be invited to take the questionnaire, the students or the office front desk personnel. How easy/feasible will be to assess if 30 minutes have passed since family members got separated from their loved ones?

Should there be anything else that we can do to assist you for a successful completion of your project, please let us know.

Sincerely,

*Lynn Rowe*

Lynn Rowe, PhD, RN  
Chair, Scientific Review Committee

cc: Leana Araujo, Ph.D., Research Officer



Institutional Review Board  
 800 N. Magnolia Avenue  
 Suite 500  
 Orlando, FL 32803  
 Telephone: (407) 200-2677  
 FWA: 00002060

October 18, 2021

To: Steven Fowler, DNP, CRNA

On October 18, 2021 the IRB determined the following is not research:

Review Type:	Administrative Review
Title:	Music Use in Waiting Rooms for Family Members and Friends
Principal Investigator:	Steven Fowler, DNP, CRNA
IRB number:	1826482-1
Documents reviewed:	<ul style="list-style-type: none"> <li>Other - Gullledge_Wolford Determination of QIQA vs Research Form (1).docx (UPDATED: 10/18/2021)</li> </ul>

If you have any questions, please contact the AdventHealth Orlando IRB at 407-200-2677 or [AH.IRB.general@AdventHealth.com](mailto:AH.IRB.general@AdventHealth.com). Please include your project title and IRBNet ID number in all correspondence with this office.

Sincerely,

IRB Office

## Appendix E - Final Scholarly Project Timeline

# Project Timeline

