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### The Effect of Music on Anxiety of the Endoscopic Client in a Private Hospital in Ho Chi Minh City Vietnam

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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

THE EFFECT OF MUSIC ON ANXIETY OF THE ENDOSCOPIC  
CLIENT IN A PRIVATE HOSPITAL IN  
HO CHI MINH CITY, VIETNAM

A Thesis Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Master of Science

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College of Nature and Health Sciences  
School of Nursing  
Advanced Nurse Generalist

May 2020

This Thesis by Nguyen Thi Hong Hanh

Entitled: *The Effect of Music on Anxiety of the Endoscopic Client in a Private Hospital in Ho Chi Minh City, Vietnam*

Has been approved as meeting the requirement for the Degree of Master of Science in College of Natural and Health Sciences in the School of Nursing, Advanced Nurse Generalist Program

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## ABSTRACT

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Gastrointestinal tract cancer is one of the fifth most common cancers in Vietnam and has a high mortality rate in Vietnamese people based on the Centers for Disease Control and Prevention (2018) global cancer statistics. One-third of adults aged 50 or older, the age group at greatest risk of developing colorectal cancer, have not been screened because endoscopy is considered a stressful procedure. The endoscopic patient sometimes refuses to have the procedure. Therefore, using music to ease the anxiety of endoscopic clients has been examined in various studies but the results have been inconclusive.

The aim of this study was to examine the effect of music therapy on the anxiety of Vietnamese endoscopic clients in a district private hospital. The quasi-experimental research evaluated changes in vital signs, pain scores, and anxiety levels before and after the endoscopic procedure among participants who listened to music and those who did not.

Forty patients participated: 18 who listened to music before and during the procedure and 22 who served as the control group. The Statistical Package for the Social Science (SPSS) version 20 was used to analyze data. There was a significant difference among the anxiety levels of those who chose to listen to music and those who did not listen at  $p < .000$ . Those who listened to music appeared to have lower anxiety scores

pre, peri, and post procedure. No significant differences in perceived pain were found between groups.

In conclusion, while music did not result in shortened procedure times or doses of sedative medications utilized, it did reduce blood pressure and heart rate among patients undergoing endoscopy. Additionally, most of the endoscopic clients were willing to repeat an endoscopic procedure in the future.

Limitations of this study included a small sample size and since only one hospital was utilized, data might not be representative of the whole endoscopic patient population in Vietnam. Future studies should expand to include more patients at multiple facilities.

Key words: Endoscopy, music therapy, nursing, pain, anxiety

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## **CHAPTER I**

### **INTRODUCTION**

This chapter introduces the study, which focuses on nurses providing music to clients in the endoscopy department in a private hospital in Vietnam in an effort to decrease anxiety and pain. Chapter I describes the background and statement of the general and specific problems, the significance of the study, as well as the scope and limitations of the study.

#### **Background and Significance of the Problem**

The Vietnamese population was 96,491,142 people in 2018; there were 164,671 new cases of cancers and the number of deaths from cancer was 114,871. The number of new cases in both genders in all ages was 17,527 (10.6%); stomach and colorectum cancers (14,733; 8.9%) were in the top five most frequent cancers excluding non-melanoma skin cancer (Global Cancer Observatory, 2018).

Screening tests via endoscopy help to find precancerous polyps (abnormal growths) so they can be removed before they have a chance to turn into cancer. This endoscopic procedure prevents the spread of cancer and decreases mortality. Screening also can find this gastrointestinal cancer at an early stage, when treatment is most effective (Centers for Disease Control and Prevention [CDC], 2018).

However, about one-third of adults aged 50 or older (about 22 million people)—the age group at greatest risk of developing colorectal cancer—have not been screened as recommended (CDC, 2018). Endoscopy is often stressful for clients because of the fear

of cancer with a terrible prognosis and clients who have had screening indeterminately experienced some negative psychological effects (Byrne, Weissfeld, & Roberts, 2008). Therefore, sedative drugs are often administered prior to conducting the endoscopy. However, the use of sedative drugs during a colonoscopy has some risk and costs, such as perforation, hemorrhage, abdominal pain, and stroke. Therefore, one of the non-pharmacological methods for reducing the client's stress and fear is music. Music therapy has historically been suggested to relax the client in many fields of medicine such as cardiology, neurology, and psychiatry; alleviates stress, discomfort, and anxiety; and reduces high blood pressure and heart rate caused by stress perioperatively in day surgery (Lin, Hsieh, Hsu, Fetzer, & Hsu, 2011). Many researchers have used music therapy in endoscopic procedures such as bronchoscopy (Tam, Lo, & Hui, 2015), gastroscopy (Padam et al., 2017), and colonoscopy (Bechtold, 2006).

### **Statement of the Problem**

The hospital environment is not a part of normal life. It can easily elicit fear and anxiety. If clients come to the hospital for an invasive procedure, they will have increased anxiety, increased heart rate, and sometimes they will cancel the procedure. There are many ways to reduce the anxiety of a client, i.e., providing information, distraction, visualization, therapeutic touch, aromatherapy, or listening to music.

Vietnam is a developing country and welcomes new practices in endoscopic diagnosis or treatment, however, Vietnam has not yet become a member of the American Music Therapy Association (2019). Music therapy is fortunately easily adaptable for the Vietnamese client. Recent meta-analyses demonstrated beneficial effects from music on pain and anxiety levels (Bechtold et al., 2009; Rudin, Kiss, Wetz, & Sottile, 2007).

Although potential benefits have been suggested (Leung, 2008), no clear recommendations regarding the use of music have been made so far. In the absence of clear recommendations, however, the hospital aims to be more comfortable and more satisfying for patients who receive services there.

### **Study Purpose**

The purpose of this study was to examine the effect of music on the endoscopic client in Vietnam. Allowing clients to listen to music is a potential way to treat anxiety in persons undergoing invasive procedures when compared to standard care with no music.

### **Need for the Study**

Music therapy for endoscopy procedures is not being used at medical clinics or endoscopic departments in Vietnam. Although 83 criteria for the quality of hospital services have focused on the client's satisfaction, services are not standardized to put the patient in the center of the service. Hospital quality control criteria are primarily used annually by inspection teams. Two relevant criteria related to service quality are A1.3—Improve the process of medical examination and A4.6—the hospital conducts surveys, assesses patient satisfaction, and conducts intervention measures (Ministry of Health, 2013). This project was developed to address client satisfaction in the endoscopy department by applying music therapy.

### **Research Questions and Hypotheses**

#### **Research Questions**

The following research questions guided this research study:

- Q1 Does music help to decrease anxiety during endoscopy?
- Q2 Does music help to decrease pain during endoscopy?

## Hypotheses

- H01 There will be no difference in pre, peri and post anxiety score among patients who choose to listen to music and those who do not.
- H1 There will be at least one difference in the pre, peri and post anxiety score among the patients who choose to listen to music and those who do not.

## Objective of the Project

Results of this study might be used by Vietnamese endoscopic nurses to better care for their clients who experience anxiety and pain. Additionally, listening to music has been found to reduce pain and anxiety, which might have an effect on procedure times or volume of narcotic drugs used for sedation.

## Definition of Terms

**Anxiety.** A state of apprehension, uncertainty, and fear resulting from the anticipation of a realistic or fantasized threatening event or situation, often impairing physical and psychological functioning (Anxiety, 2019).

**Colonoscopy.** A medical procedure where a long, flexible, tubular instrument called the colonoscope is used to view the entire inner lining of the colon (the large intestine and the rectum; Colonoscopy, 2019).

**Gastroscopy.** Direct visual examination of the inside of the stomach. This is done when a barium X-ray reveals an ulcer so that malignancy can be excluded by biopsy. The healing of ulcers can also be confirmed by gastroscopy. Various treatments can also be performed by gastroscopy such as injection of adrenaline around a bleeding ulcer to constrict the blood vessels (Gastroscopy, 2019).

**Music.** Music always involves combinations of pitch, timbre, rhythm, dynamics, tempo, texture, melody and harmony, which create an overall structure.

**Music therapy.** Music used in a therapeutic manner to address physical, emotional, cognitive, and social needs of individuals. After assessing the strengths and needs of each client, the qualified music therapist provides the indicated treatment including creating, singing, moving to, and/or listening to music. Through musical involvement in the therapeutic context, clients' abilities are strengthened and transferred to other areas of their lives (American Music Therapy Association, 2019).

**Rectoscopy/proctoscopy.** Inspection of the rectum with a proctoscope. The examination is usually done prior to rectal surgery and might be a part of the physical examination of a patient with hemorrhoids, rectal bleeding, or other symptoms of a rectal disorder (Rectoscopy, 2019).

## **CHAPTER II**

### **LITERATURE REVIEW**

#### **Introduction**

This chapter briefly examines available literature and studies conducted relevant to this research. The chapter illuminates the problem to create a better understanding of discussed issues. It starts with a short description of the terms used in this chapter such as anxiety, music, and sedative in relation to utilizing music with endoscopic patients.

Key terms used in the search for relevant literature were “music therapy,” “musical therapy” AND “music intervention,” and “endoscopy” AND “anxiety.” Databases such as PubMed, CINAHL, EBSCO, and Cochrane were searched for sources from 2016 to 2018. As illustrated in Table 1, the first search found 4,457 for “Music therapy” AND “Anxiety” and 267 studies were found for “Gastroscopy” AND “Colonoscopy.” Of these, 64 articles met the inclusion criteria and eight studies were available as full-text articles.

Table 1

*Search Results of Databases before Scanning for Relevance*

Keywords	Search A “Music therapy” AND “Anxiety”	Search B “Gastroscopy” AND “Colonoscopy”
CINAHL	873	14
Cochrane Database of Systematic Reviews	644	19
ERIC	18	0
Medline and EBSCO host	2,849	11
PubMed	76	20

The search then focused on research on decreasing anxiety using music therapy in endoscopic clients when doing the procedure, specifically on gastroscopy, colonoscopy, bronchoscopy, and cystoscopy procedures done in Vietnam (see Table 2).

Table 2

*Articles Found by Databases*

Database Searched	Date of Search	Search Strategy & Limiters	Number and Type of Articles Found	Number of Relevant Articles
Cumulative Index to Nursing and Allied Health Literature (CINAHL)	Published 2000-2017	Keyword Full text English	13	11
Cochrane Database of Systematic Review	Published 2016-2018	Keyword Full text English	42	1
Medline	Published 2016-2018	Keyword Full text English	20	17
PMC	Published 2016-2018	Keyword Full text English	69	7

## **Anxiety**

There are many different anxiety disorders. Those with generalized anxiety disorder suffer from excessive, unrealistic worry that lasts six months. Behavioral indicators of anxiety could present as restlessness, shortness of breath, fatigue, muscle tension, and fearful facial expression, while physiological responses could include increased blood pressure, heart rate, respiratory rate, and metabolism (Robb, Nichols, Rutan, Bishop, & Parker, 1995). Anxiety could lead to patient refusal of treatments and elevated medication administration (Pettravage & Swedberg, 1988); it might also decrease a patient's cooperation with treatment regimens (Mahajan, Johnson, & Marshall, 1997). Anxiety has been shown to be associated with adverse consequences such as failure to continue a colonoscopy (Wang et al., 2014) or refusal of colon cancer screening (Bechtold, 2006). Kartin et al. (2017) wrote that anxiety is a common issue in patients who are exposed to invasive procedures. Colonoscopy is a procedure that can cause anxiety in patients (Sargin et al., 2016). Standard medical treatment for anxiety includes psychotherapy, cognitive behavioral therapy, therapeutic communication, information, visualization, aromatherapy, therapeutic touch, drug intervention, and pertinent to this study—listening to music.

## **Music and Anxiety**

Music has been used by several medical disciplines including radiology (Slifer, Penn-Jones, Cataldo, Conner, & Zerhouni, 1991), cardiology (Guzetta, 1989), and respiratory therapy (Dubois, Bartter, & Pratter, 1995). One of the major reasons music therapy is so effective is it can shift a person's focus away from a stressful or uncomfortable event to something pleasant and soothing (Clark, 2018). In that way, it

serves as a distraction from anxiety. But music therapy does more than just that; music can help to reduce stress and anxiety through multiple pathways. It affects physiological factors like heart rate and hormone levels, modulates the nervous system, and has psychological effects as well. Music therapy can suppress the sympathetic nervous system, which is involved with the “flight-or-flight” stress response of the body. Music also triggers the brain to release endorphins, increases the levels of dopamine, and blocks pain pathways, all of which could help to enhance a sense of well-being. Music can even modulate the immune system as research shows music therapy can increase the production of immune cells produced (Clark, 2018).

### **Applying Music in Endoscopy Procedures**

Recent studies have examined the effect of music on endoscopic procedures including colonoscopy (Bechtold et al., 2009), and bronchoscopy (Tam et al., 2015). A meta-analysis indicated contradictory results and small studies, which make it difficult to form conclusions (Rudin et al., 2007).

### **Synthesis of the Literature**

Music and healing have been intertwined throughout history. Magicians have used music in healing since primitive times. Greek philosophers Plato and Aristotle wrote about how to use music to influence health and behavior and music has continued to be associated with healing throughout medieval times and afterwards. Music has been used to treat physical and mental problems in the United States in the past century and a half (Bonny, 2002).

Bechtold (2006) found patients undergoing outpatient colonoscopy who listened to music had more satisfaction but did not have a decrease in procedure time or quantity

of sedative medication used. He conducted a randomized controlled trial with over 167 adults and found 96.3% of patients who listened to music would have a colonoscopy again.

A meta-analysis including eight randomized control trials confirmed music played during colonoscopy did not decrease pain scores, medication doses, or procedure times. It was, however, found that patient experience and willingness to have another procedure were significantly increased (Bechtold et al., 2009).

In Italy, Costa et al. (2010) conducted a single blind study of listening to music during an endoscopy. The patient wore headphones with or without music for three minutes before their colonoscopy and five minutes post procedure. They found wearing headphones with no music made patients more anxious.

Wang et al. (2014) reviewed over 200 sources about the effect of music on patients undergoing various endoscopic procedures. This study recorded the pain score, anxiety level, heart rate, blood pressure, satisfaction, and duration time of endoscopy. This study suggested music might offer benefits for patients undergoing endoscopy, except in bronchoscopy. Pain score was measured on a linear analog scale from 0 (no pain) to 10 (severe pain) or visual analog scale from 0 (maximal pain) to 100 (no pain; Wang et al., 2014).

Another meta-analysis included 13 English studies and 14 Chinese studies (Tam et al., 2015). Many different measurement tools were used including the State-Trait Inventory, Zung's Self-Rating Anxiety scale, and a self-developed three-level anxiety tool. The results showed the combined mean differences in blood pressure for systolic and diastolic blood pressure were -11.99 and -4.84 mmHg, respectively, and the mean

heart rate difference was -10.57 beats per minute. This meta-analysis confirmed listening to music reduced blood pressure and heart rate among patients undergoing bronchoscopy.

A randomized control trial studied 199 patients divided into three groups: 67 listened to pre-recorded Vedic chants for 10 minutes, 66 patients listened to Indian classical instrumental music for 10 minutes, and 66 controls remained seated for the same period in the same environment (Padam et al., 2017). The results showed the anxiety state score decreased significantly from  $40.4 \pm 8.9$  to  $38.5 \pm 10.7$  for the Vedic chants group and decreased  $41.8 \pm 9.9$  to  $38.0 \pm 8.6$  for the Indian music group. A significant decrease in systolic and diastolic blood pressure and increase in saturation of peripheral oxygen (SpO<sub>2</sub>) was found. The study explained the cut-off point of the State-Trait Inventory was 39-40. The data showed benefits for music therapy on alleviating anxiety. The study was done at a single health institution. Padam et al. (2017) needed participants in all healthcare systems. This research explained how music decreased blood pressure and heart rate but increased the SpO<sub>2</sub> after intervention.

### **Theoretical Underpinnings**

The theory of unpleasant symptoms (TOUS; see Figure 1) is a middle range theory that explains the causation and cyclical relationship of multiple symptoms simultaneously experienced by individuals. The TOUS posits that not only might one symptom lead to the development of another but also the treatment of one symptom might alleviate other symptoms. The purpose of this theory was to aid in the design of interventions to prevent or lessen the effect of unpleasant symptoms. The desire to decrease the effect of unpleasant symptoms was the focus of this theory and developing interventions for individuals or populations of patients was the overall goal (McCaffrey,

2012). The TOUS has three major components: (a) the symptom(s) the individual is experiencing, (b) the influencing factors that produced or affected the symptom experience, and (c) the performance outcomes (Nguyen, Haas, & Pugh, 2017). The symptoms can be physiological, psychological, or situational and can be observable or not observable. These factors might work alone or together to produce unpleasant symptoms. Four symptom variables that can be measured are intensity, timing, distress level, and quality (McCaffrey, 2012). As an example, endoscopic clients could have anxiety about local anesthetic procedures and thus postpone treatment, which might prevent discovering if they have cancer, leading to many complications. They could be worried about finances, diseases, and hospitalization or that nobody would be available to care for their house, their children, or their pets in their absence. The signs of anxiety and pain might be localized or might occur in multiple sites. A nurse might assess the patient's pain onset, duration, intensity, quality and region, radiation, alleviating and aggravating factors, and degree of impairment to quality of life. A nurse should assess the endoscopic client's pain pre-procedure. Following the theory, the client's anxiety and physiological pain might be controlled by medications. However, the psychological anxiety or pain requires a different solution and music therapy could be that treatment.

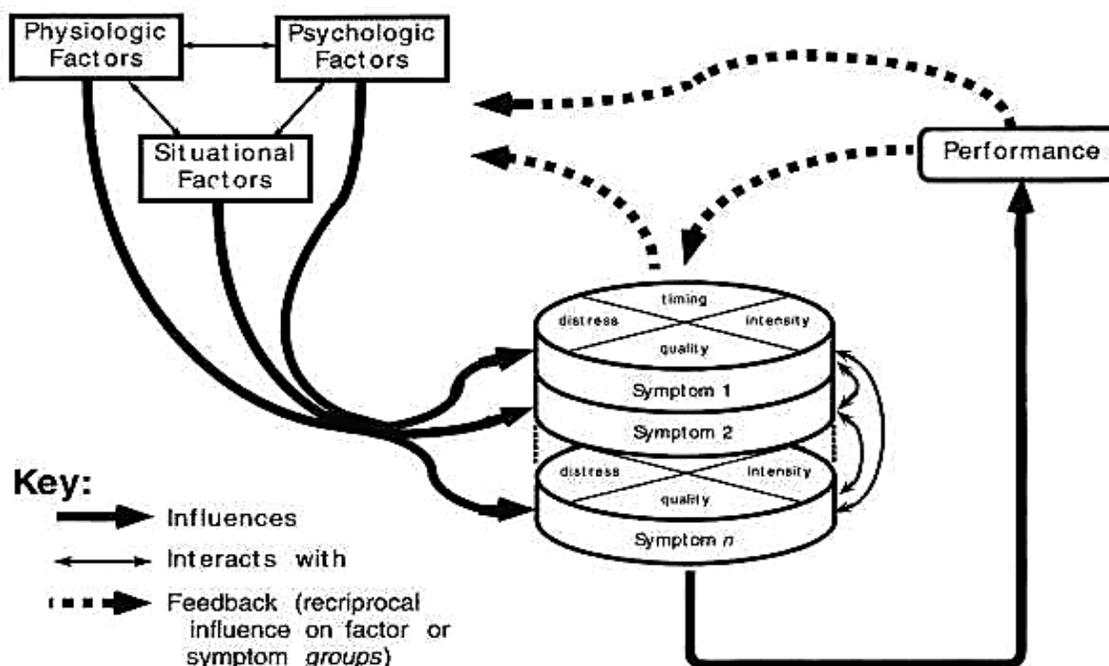


Figure 1. The middle-range theory of unpleasant symptoms (Nguyen et al., 2017).

### The Endoscopic Procedure

At the City International Hospital in Vietnam, gastroscopy and bronchoscopy are done using local or sedative medications, whereas colonoscopy and cystoscopy are done under sedation. The procedural team includes two endoscopists, six nurses, a healthcare assistant, and a nurse manager. There are 11 patient bays and two recovery bays with a nursing call system. Twenty to 30 procedures can be done in an eight-hour work shift. Endoscopic nurses have to ensure patients have fasted for six hours. Patients are taken to a bay and shown how to change clothes and use the nursing call system. The patient completes the pre-endoscopy checklist. The nurse then takes vital signs and assesses pain, fall risks, medical history, and allergies. The endoscopist and anesthetist then examine the client and explain the procedure and risks involved and have the patient sign a consent form (see Appendix A). The nurse then puts in an IV line with 0.9% normal

saline. Afterwards, the client waits until a procedure room is ready. There, the endoscopic nurse performs a time-out to ensure the correct patient, correct procedure, correct doctor, and allergies are involved. The nurse also monitors vital signs, puts the patient in the right position, or follows the endoscopist's orders. The doctor then puts a scope with a camera through the anus to the cecum in colonoscopy and through the mouth to the first part of the small intestine (duodenum) in gastroscopy. The client is sedated during the 5-60 minutes of the procedure; if the client is relaxed, the procedure is quicker. The time inserting the scope is around five to seven minutes for gastroscopy and 20-60 minutes for a colonoscopy.

## **CHAPTER III**

### **METHODOLOGY**

#### **Design**

This research study was a quasi-experiment with two groups (music group and control group). Each day, the researcher received a schedule of clients undergoing a colonoscopy the following day. During a routine, standardized phone call, patients were invited to participate in the study. If a patient decided not to participate, he/she received his/her endoscopy under standard procedures. A convenience sample of 40 patients was obtained. All clients were able to decline participation even after verbal consent was obtained.

#### **Participants**

All patients undergoing a gastro-colonoscopy procedure done under monitored sedative anesthesia were eligible to participate. Only Vietnamese-speaking persons aged 18-65 with an American Society of Anesthesiology Classification of I (no systematic disease), II (mild to moderate disease who are medically stable) or III (severe systematic disease not incapacitating) were eligible to participate. Clients with profound mental illness, developmental disability, significant hearing loss (where music would not be heard from ear-phones), and those currently taking narcotics were excluded from the research. Sixty patients were invited; however, 10 declined and 10 participants were removed from the study due to anticoagulants use (one), being converted to general

anesthetic (four), and canceling the endoscopy (five). The result was a convenience sample of 40 participants.

### **Procedure and Materials**

Participants who were in the music listening group listened using earphones with an iPod or iPhone. Music was played in non-stop mode in the client's bay before moving to the endoscopic room, during the procedure, and after the procedure in the recovery bay. All participants listened to the same Zen music recording. Participants in the non-listening music group were prepared using standard procedures.

### **Measures**

Client anxiety was measured three times using levels from 1 to 5 (from no anxiety to extreme anxiety) and some anxiety symptoms were measured on the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983). The questionnaire (see Appendix B) was completed by the endoscopy staff at identified time intervals. Pain was measured on a linear analogue scale from 0 to 10 (see Appendix C).

### **Data Analysis**

Baseline clinical and demographic characteristics of the participants were summarized. The main outcomes for this analysis were changes in pain and anxiety pre-procedure, peri-procedure and post-endoscopy. The primary comparisons of interest were to compare the music listening group's scores to the control group's scores. Data analysis was conducted using SPSS 20. In addition to descriptive statistics, Pearson correlations and Friedman's analysis of variance (ANOVA) tests were used to evaluate relationships between variables and differences between groups.

### **Duration of the Study**

This study was conducted at the City International Hospital in the endoscopy department from August 6, 2019 to August 20, 2019.

### **Ethical Considerations**

Approval was obtained from the board of director and the committee of the City International Hospital (see Appendix D for approval). Permission was also obtained from the head of the Endoscopy department. The study was approved by the Institutional Review Board at the University of Northern Colorado (see Appendix E). The purpose of the study was explained to eligible patients and verbal consent was obtained. Study participants were informed their participation was voluntary and refusal to participate would not jeopardize the care and treatment they received. No names or other identifying information was obtained.

### **Limitations**

Limitations of this study were the inclusion of a single, small, private hospital and a two-week data collection window. The sample size is also quite small so it was potentially not representative of the population of interest.

## **CHAPTER IV**

### **DATA ANALYSIS AND RESULTS**

The findings of this study are presented in the following separate sections. The data were collected through the use of the Questionnaire for Nurse (see Appendix B). The first section is a brief description of the demographic data from the study sample followed by comparisons between the two groups. Data analysis for this study was completed using the Statistical Package for Social Sciences (SPSS) software. Significance was set at  $p < 0.05$  for all tests.

#### **Description of the Sample**

The study sample included 40 patients who were over the age of 18 and voluntarily participated in the study. Ages of the participants ranged from 24 to 58 years-old with a mean age of 44.4 years and a median of 46 years of age. Twenty-nine (72.5%) of the participants were female and 11 (27.5%) were male (see Table 3). Twenty-six (65%) of the participants had experienced a previous endoscopy and 14 (35%) had not. Twenty-seven (67.5 %) were scheduled for a gastroscopy, nine (22.5%) were scheduled for both a gastroscopy and a colonscopy, and four (10.0%) were scheduled for a rectoscopy.

Table 3

*Patient Demographics*

Characteristic	<i>n</i>	%
Gender		
Male	11	27.5
Female	29	72.5
Experience with Endoscopy		
Yes	26	65.0
No	14	35.0
Procedure		
Gastroscopy	27	67.5
Rectoscopy	4	10.0
Gastroscopy/Colonscopy	9	22.5
Pre-Diagnosis		
Check up	9	22.5
Irritable bowel syndrome with Polyps	1	2.5
Gastro-esophageal reflux disease	5	12.5
Gastritis, unspecified	19	47.5
Gastritis with diarrhea	1	2.5
Gastritis with irritable bowel syndrome	2	5.0
Polyp Cancer	1	2.5
Esophageal reflux and Gastritis	1	2.5
Irritable bowel syndrome without diarrhea	1	2.5

*N* = 40

### **Pre-Endoscopy Patient Evaluation**

The 40 patients in this study underwent a pre-endoscopy patient evaluation. This evaluation included the listing of the type of anesthesia, behavior at interview, vital signs, and patient self-assessment of anxiety and pain. Additionally, each study participant was asked if he/she would like to listen to music to relax. Three patients (7.5%) had local anesthesia ordered and 37 (92.5%) had sedative ordered. The behaviors were noted to be varied. The anxiety scale reported pre-procedure varied from not present to severe. The

pain scores reported pre-procedure varied from no report to severe. Of interest was of the 40 participant patients, 18 responded yes to listening to music and 22 responded no. The results of the pre-endoscopy patient evaluation are provided in Tables 4 and 5.

Table 4

*Pre-Endoscopy Patient Characteristics*

Characteristics	<i>n</i>	%
<b>Anesthesia Ordered</b>		
Local Anesthesia	3	7.5
Sedative	37	92.5
<b>Behaviors</b>		
None	4	10.0
Tremor of hands	1	2.5
Unsteady voice	4	10.0
Furrowed brow	21	52.5
Sighing or rapid respiration	8	20.0
Nausea	2	5.0
<b>Anxiety Scale</b>		
Non present	7	17.5
Mild	17	42.5
Moderate	13	32.5
Severe	3	7.5
Very Severe	0	0
<b>Pain Scores</b>		
0	29	72.5
No Pain	9	22.5
Mild	1	2.5
Severe	1	2.5
<b>Chose to Listen to Music</b>		
Yes	18	45.0
No	22	55.0

*N* = 40

Table 5

*Pre-Endoscopy Assessment Data*

Pre-Procedure	Range	Minimum	Maximum	<i>M</i>	<i>SD</i>
Anxiety scale	3	0	3	1.3	0.853
Pain scores	4	0	4	0.38	0.774
Pulse	56	54	110	75.13	11.543
Respiration rate	10	16	26	19	2.196
Systolic BP	70	100	170	124.77	15.62
Diastolic BP	56	54	110	77.1	14.787
SpO2	2	98	100	99.33	0.694

**Peri-Endoscopy Patient Evaluation**

The patients in this study underwent a peri-endoscopy patient evaluation. The results of the peri-endoscopy evaluation are provided in Tables 6 and 7. This evaluation was done before the endoscopy in the endoscopy room. Table 6 includes anxiety scale results and pain scores. Table 7 includes generalized descriptive results of the vital signs.

Table 6

*Peri-Endoscopy Patient Characteristics*

Characteristic	<i>n</i>	%
Anxiety Scale –		
No present	5	12.5
Mild	17	42.5
Moderate	15	37.5
Severe	3	7.5
Pain Scores		
0	26	65.0
No Pain	12	30.0
Mild	2	5.0
Severe	0	0

*N* = 40

Table 7

*Peri-Endoscopy Assessment Data*

Peri-Procedure	Range	Minimum	Maximum	<i>M</i>	<i>SD</i>
Anxiety scale	3	0	3	1.4	0.81
Pain scores	2	0	2	0.4	0.591
Pulse	56	54	110	78.38	12.085
Respiration rate	6	16	22	19.08	1.328
Systolic BP	90	79	169	121.52	17.304
Diastolic BP	68	47	115	75.88	14.162
SpO2	39	61	100	98.75	6.151

*N* = 40

### Post-Endoscopy Patient Evaluation

The patients in this study were evaluated post-endoscopy once awake. This evaluation included a patient self-assessment of anxiety and pain. Vital signs were evaluated; the diagnosis after procedure and the time of the endoscopic procedure were also recorded. Additionally, the patient was asked if he/she would be willing to do another endoscopic procedure if the doctor requested it in the future. The results of the post-endoscopy evaluation are provided in Table 8. Table 9 includes generalized descriptive results of post-endoscopy vital signs.

Table 8

#### *Post-Endoscopy Patient Characteristics*

Characteristics	<i>n</i>	%
Anxiety Scale –		
Not present	24	60.0
Mild	13	32.5
Moderate	3	7.5
Severe	0	0
Pain Scores		
0	30	75.0
No Pain	8	20.0
Mild	2	5.0
Severe	0	0

*N* = 40

Table 9

*Post-Endoscopy Assessment Data*

Post-Procedure	Range	Minimum	Maximum	<i>M</i>	<i>SD</i>
Anxiety scale	2	0	2	0.49	0.64
Pain scores	2	0	2	0.3	0.564
Pulse	49	51	100	74.5	10.801
Respiration rate	6	16	22	17.9	1.194
Systolic BP	44	99	143	114.4	10.112
Diastolic BP	43	55	98	69.95	8.61
SpO2	2	98	100	99.58	0.747

---

*N* = 40

Table 10 provides the time for endoscopy (in minutes) for the study sample of 40 patients. The time for the endoscopy for a majority of the patients was 10 minutes ( $n = 22$ ; 55 %). Thirty-seven patients (92.5%) reported they would agree to do an endoscopy if needed in the future. Three patients (7.5%) reported they would not agree to do an endoscopy if needed in the future.

Table 10

*Endoscopy in Minutes*

Minutes	Frequency	%	Valid %	Cumulative %
10	22	55	55	55
15	8	20	20	75
20	5	12.5	12.5	87.5
30	3	7.5	7.5	95
45	1	2.5	2.5	97.5
110	1	2.5	2.5	100
Total	10	100	100	

### **Exploratory Correlation of Variables**

The Pearson correlation is a measure of the extent to which the variation in one variable is related to the variation in another variable. This variation could indicate which variables should undergo further analyses. In Table 11, some correlations existed among the results (note those with \* or \*\* by value). Positive relationships were found between the age and perception of pain post procedure, gender and the experience variable, and among anxiety levels pre, peri, and post endoscopy. There was also a negative correlation between the gender and pain scores at peri-endoscopy and the choice of music and anxiety level post procedure.

Table 11

*Pearson Correlation of Variables*

Pearson Correlation		Age	Gender	Experience	Anxiety Pre	Pain Pre	Music	Anxiety Peri	Pain Peri	Anxiety Post	Pain Post	Time endo
Age	P.C.	1	-0.18	-0.16	-0.12	0.22	0.00	-0.08	0.22	0.04	0.32*	0.00
	Sig.(2-tailed)		0.26	0.30	0.44	0.17	0.99	0.62	0.15	0.76	0.04	0.97
Gender	P.C.	-0.18	1	0.33*	0.28	-0.28	0.11	0.30	-0.34*	0.10	-0.17	0.02
	Sig.(2-tailed)	0.26		0.03	0.07	0.07	0.46	0.05	0.02	0.50	0.29	0.86
Experience	P.C.	-0.16	0.33*	1	0.05	-0.08	0.13	0.28	-0.14	-0.3	-0.11	-0.09
	Sig.(2-tailed)	0.30	0.03		0.76	0.59	0.39	0.07	0.37	0.06	0.48	0.56
Anxiety Pre	P.C.	-0.12	0.28	0.05	1	0.29	-0.09	0.34*	0.11	0.24	0.07	-0.05
	Sig.(2-tailed)	0.44	0.07	0.76		0.06	0.55	0.03	0.49	0.12	0.64	0.78
Pain Pre	P.C.	0.22	-0.28	-0.08	0.29	1	-0.21	-0.16	0.84**	0.20	0.49**	0.16
	Sig.(2-tailed)	0.17	0.07	0.59	0.06		0.18	0.31	0	0.21	0.00	0.31
Choice music	P.C.	0.00	0.11	0.13	-0.09	-0.21	1	0.26	-0.06	-0.43**	-0.14	0.02
	Sig.(2-tailed)	0.99	0.46	0.39	0.55	0.18		0.1	0.67	0.00	0.37	0.87
Anxiety Peri	P.C.	-0.08	0.30	0.28	0.34*	-0.16	0.26	1	-0.07	-0.08	-0.1	-0.09
	Sig.(2-tailed)	0.62	0.05	0.07	0.03	0.31	0.1		0.64	0.62	0.53	0.57
Pain Peri	P.C.	0.22	-0.34*	-0.14	0.11	0.84*	-0.06	-0.07	1	0.09	0.55*	0.19
	Sig.(2-tailed)	0.15	0.02	0.37	0.49	0	0.67	0.64		0.56	0	0.22
Anxiety Post	P.C.	0.04	0.10	-0.30	0.24	0.20	0.43**	-0.07	0.09	1	0.16	-0.16
	Sig.(2-tailed)	0.76	0.50	0.05	0.12	0.21	0.00	0.62	0.56		0.31	0.33
Pain Post	P.C.	0.32	-0.17	-0.11	0.07	0.49**	-0.14	-0.10	0.55**	0.16	1	0.29
	Sig.(2-tailed)	0.04	0.29	0.48	0.64	0.00	0.37	0.53	0	0.31		0.06
Time endo	P.C.	0.00	0.02	-0.09	-0.04	0.16	0.02	-0.09	0.19	-0.16	0.29	1
	Sig.(2-tailed)	0.97	0.86	-0.56	0.78	0.31	0.87	0.57	0.22	0.33	0.06	

\* Correlation is significant at the 0.05 level \*\* Correlation is significant at the 0.01 level

### **Comparison of Pre, Peri, and Post Endoscopy Anxiety and Pain Scores**

Nonparametric statistical tests were employed for analysis based on the normality of the distribution of the data. Distributions of those who listened to music and those who did not for the anxiety scale pre, peri, and post procedure were not the same. There was a significant difference between the anxiety levels of those who chose to listen to music and those who did not at  $p < .000$  by the Friedman's ANOVA. Those who listened to music appeared to have lower anxiety scores for pre, peri, and post procedure. A significant difference did not exist in the pain scores of the patients who chose to listen to music and those who did not throughout the pre, peri, and post procedure timeframe.

#### **Summary**

Although significant amounts of data were collected for this study, not all of the data could be used realistically for analyses more than those of a descriptive nature. However, data provided this study by the 40 patients revealed an excellent view of the demographic data of the study population at one medical facility. This "snapshot" of the demographic data will provide a useful foundation for future studies related to this topic. Only those variables that met selected criteria were analyzed beyond the basic description of the data point. For example, only selected variables were entered into a correlation procedure. Of note, due to the distribution of the anxiety and pain scores of this study population, these scores were analyzed through the use of nonparametric analysis procedures.

## CHAPTER V

### DISCUSSION

The purpose of this study was to evaluate the effects of music listening on anxiety and perceptions of pain during endoscopy. It was theorized that patients exposed to music while waiting and during the procedure would have less anxiety and perceived pain than those not exposed to the music. The mean anxiety level in the pre-endoscopy was  $1.3 \pm 0.85$ ; peri-endoscopy, it was  $1.4 \pm 0.81$ ; and post-endoscopy, it was  $0.49 \pm 0.64$  ( $1.52 \pm 0.71$ ). Pain scores for pre, peri, and post procedure were  $0.38 \pm 0.77$ ,  $0.4 \pm 0.59$ , and  $0.3 \pm 0.56$ , respectively. Both pain scores and anxiety levels increased slightly peri endoscopy and decreased post procedure.

The pain scores of participants in this study did not decrease, which was consistent with a recent meta-analysis including eight randomized control trails that failed to show a significant effect of music on pain during procedure ( $-0.46$ ; CI from  $-0.98$  to  $0.07$ ; Costa et al., 2010). The endoscopic nurses just interviewed the client to determine whether he/she experienced pain. If the client was in pain, the nurse would ask the level of pain and recorded the patient's pain score.

In the study, the time for the endoscopy for a majority of the patients was 10 minutes ( $n = 22$ ; 55 %). This was equivalent to the time of a gastroscopy ( $n = 27$ ; 67.5%). According to previous research by Kartin et al. (2017), the time for a colonoscopy was  $14.03 \pm 7.91$  minutes in the study group and  $14.86 \pm 6.81$  minutes for control group.

In this study, 92.5% of clients were willing to do the procedure again in the future and 7.5% answered no, which indicated the client's overall experience, satisfaction, and acceptability of the procedures. Bechtold (2006) had similar results.

No significant differences were noted between the experimental and control groups in this study. Pre endoscopy data for the hospital anxiety and depression scales indicated the two groups were nearly similar and there was no statistical difference in the anxiety level of both groups.

One pulse rate was indicated to be differentially low (60 beats per minute) in the pretest experimental group ( $M = 71.61 \pm 9.97$ ), which could have been an error on part of the pulse records.

### **Study Limitations**

To the best of this researcher's knowledge, this is the first quasi-experiment to estimate the effect of music listening on anxiety and pain among Vietnamese endoscopy patients. In this study, participants were able to choose which group they would be assigned to— music listening or control. This study also relied on a convenience sample at a single site. Limitations of this study included a lack of randomization, the small sample size, and recruitment at a single endoscopy center.

### **Implications for Practice and Research**

In future studies, pre, peri, or post procedure data should be collected by one using a single instrument, which would increase validity and reliability. It is important to note that even though significant differences were not found, all measured parameters showed a treatment response in the expected direction. While not statistically significant, the case was strengthened for using music to reduce patient discomfort during endoscopy.

## **Conclusion**

In conclusion, the results indicated the effect of music on anxiety and pain scales was not clear. The benefit of music therapy was modest. However, this was pilot information that could be used to inform additional or larger studies to validate the results. It is suggested that music should be offered to clients undergoing endoscopy with sedation on an on-demand basis.

## REFERENCES

- American Music Therapy Association. (2019). *What is music therapy?* Retrieved from <https://www.musictherapy.org/about/musictherapy/>
- Anxiety. (2019). In *Merriam-Webster's dictionary*. Retrieved from <https://www.merriam-webster.com/dictionary/anxiety>
- Bechtold, M. (2006). Effect of music on patients undergoing outpatient colonoscopy. *World Journal of Gastroenterology, 12*(45), 7309-7312.
- Bechtold, M. L., Puli, S. R., Othman, M. O., Bartalos, C. R., Marshall, J. B., & Roy, P. K. (2009). Effect of music on patients undergoing colonoscopy: A meta-analysis of randomized controlled trials. *Digestive Diseases and Sciences, 54*(1), 19-24. doi:10.1007/s10620-008-0312-0
- Bonny, H. (2002). *Music consciousness: The evolution of guided imagery and music*. Gilsum, NH: Barcelona Publishers.
- Byrne, M., Weissfeld, J., & Roberts, M. (2008). Anxiety, fear of cancer, and perceived risk of cancer following lung cancer screening. *Medical Decision Making, 28*(6), 917-925.
- Centers for Disease Control and Prevention. (2018). *What is colorectal cancer?* Retrieved from [https://www.cdc.gov/cancer/colorectal/basic\\_info/what-is-colorectal-cancer.htm](https://www.cdc.gov/cancer/colorectal/basic_info/what-is-colorectal-cancer.htm)

- Clark, C. (2018). Music therapy can provide natural anxiety relief and treat depression. *University Health News*. Retrieved from <https://universityhealthnews.com/daily/depression/what-is-music-therapy-find-natural-anxiety-relief-fight-depression-reduce-blood-pressure-and-more-with-this-alternative-approach/>
- Colonoscopy. (2019). In *Free Dictionary*. Retrieved from <https://www.thefreedictionary.com/colonoscopy>
- Costa, A., Montalbano, L. M., Orlando, A., Ingoglia, C., Linea, C., Giunta, M., & D'Amico, G. (2010). Music for colonoscopy: A single-blind randomized controlled trial. *Digestive and Liver Disease*, *42*(12), 871-876.  
doi:10.1016/j.dld.2010.03.016
- Dubois, J., Bartter, T., & Pratter, M. (1995). Music improves patient comfort level during outpatient bronchoscopy. *Chest*, *108*(1), 129-130.
- Gastroscopy. (2019). In *Free Dictionary*. Retrieved from <http://www.thefreedictionary.com/>
- Global Cancer Observatory. (2018). *Viet Nam*. Retrieved from <http://gco.iarc.fr/today/data/factsheets/populations/704-viet-nam-fact-sheets.pdf>
- Guzetta, C. (1989). Effects of relaxation and music therapy on patients in a coronary care unit with presumptive acute myocardial infarction. *Heart & Lung*, *18*(6), 609-616.
- Kartin, P., Bulut, F., Ceyhan, O., Tasci, S., Gursoy, S., Karakas, H., & Isik, N. (2017). The effect of meditation and music listening on the anxiety level, operation tolerance and pain perception in people who were performed colonoscopy. *Internationak Journal of Caring Sciences*, *10*(3), 1587-1594.

- Leung, F. (2008). Methods of reducing discomfort during colonoscopy. *Digestive Diseases and Sciences*, 53(6), 1462-1468.
- Lin, M., Hsieh, Y., Hsu, Y., Fetzer, S., & Hsu, M. (2011). A randomized controlled trial of the effect of music therapy and verbal relaxation on chemotherapy induced anxiety. *Journal of Clinical Nursing*, 20(7-8), 988-99.
- Mahajan, R., Johnson, J., & Marshall, J. (1997). Predictors of patient cooperation during gastrointestinal endoscopy. *Journal of Clinical Gastroenterology*, 24(4), 220-223.
- Ministry of Health. (2013). *Documents and official documents related to quality control and safety*. Retrieved from <http://chatluongbenhvien.vn/>
- McCaffrey, R. (2012). *Doctor of nursing practice: Enhancing professional development*. Philadelphia: F.A Davis Company.
- Nguyen, J., Haas, R., & Pugh, L. (2017). The application of the theory of unpleasant symptoms to the education and practice of nurse anesthetists. *Nursing & Healthcare International Journal*, 1(4). Retrieved from <https://medwinpublishers.com/NHIJ/NHIJ16000120.pdf>
- Padam, A., Sharma, N., Sastri, O. S. K. S., Mahajan, S., Sharma, R., & Sharma, D. (2017). Effect of listening to Vedic chants and Indian classical instrumental music on patients undergoing upper gastrointestinal endoscopy: A randomized control trial. *Indian Journal of Psychiatry*, 59(2), 214.  
doi:10.4103/psychiatry.IndianJPsychiatry\_314\_16
- Petravage, J., & Swedberg, J. (1988). Patient response to sigmoidoscopy recommendations via mailed reminders. *The Journal of Family Practice*, 27(4), 387-389.

- Rectoscopy. (2019). In *Free Dictionary*. Retrieved from <https://www.thefreedictionary.com/rectoscopy>
- Robb, S., Nichols, R. J., Rutan, R. L., Bishop, B. L., & Parker, J. C. (1995). The effects of music assisted relaxation on preoperative anxiety. *Journal of Music Therapy*, 32(1), 2-21. doi.org/10.1093/jmt/32.1.2
- Rudin, D., Kiss, A., Wetz, R. V., & Sottile, V. M. (2007). Music in the endoscopy suite: A meta-analysis of randomized controlled studies. *Endoscopy*, 39(6), 507.
- Sargin, M., Uluer, M. S., Aydogan, E., Hanedan, B., Tepe, M. I., Eryilmaz, M. A., ... Ozmen, S. (2016). Anxiety levels in patients undergoing sedation for elective upper gastrointestinal endoscopy and Colonoscopy. *Medical Archives*, 70(2), 112-115. doi:10.5455/medarh.2016.70.112-115
- Slifer, K., Penn-Jones, K., Cataldo, M., Conner, R., & Zerhouni, E. (1991). Music enhances patient's comfort during MR imaging. *American Journal of Roentgenology*, 56(2), 403.
- Tam, W. W. S., Lo, K. K. H., & Hui, D. S. C. (2015). The effect of music during bronchoscopy: A meta-analysis. *Heart & Lung: The Journal of Acute and Critical Care*, 45(2), 86-94. doi:10.1016/j.hrtlng.2015.12.004
- Wang, M. C., Zhang, L. Y., Zhang, Y. L., Zhang, Y. W., Xu, X. D., & Zhang, Y. C. (2014). Effect of music in endoscopy procedures: Systematic review and meta-analysis of randomized controlled trials. *Pain Medicine*, 15(10), 1786-1794. doi:10.1111/pme.12514
- Zigmond, A. S., & Snaith, R. P. (1983). Hospital anxiety and depression scale. *Acta Psychiatrica Scandinavia*, 67(6), 361-370.

**APPENDIX A**

**CONSENT FORM FOR HUMAN PARTICIPANTS  
IN RESEARCH: VIETNAMESE AND ENGLISH**



Institutional Review Board

## THÔNG TIN ĐỒNG Ý NGƯỜI THAM GIA NGHIÊN CỨU

TRƯỜNG ĐẠI HỌC BẮC COLORADO

**Tên đề tài:** Ảnh hưởng âm nhạc trên lo lắng căng thẳng cho khách trước nội soi tại bệnh viện tư nhân tại Thành phố Hồ Chí Minh ở Việt Nam.

**Nghiên cứu sinh:** Nguyễn Thị Hồng Hạnh

**Cố vấn viên:** Darcy Copeland, Điều dưỡng, Tiến sĩ, Phó giáo sư trường Điều dưỡng.

Quý vị được đề nghị tham gia một đề tài nghiên cứu ảnh hưởng của âm nhạc với sự lo lắng của khách nội soi. Tôi đề nghị bạn vì bạn là khách nội soi. Vui lòng đọc kỹ mẫu đơn và hỏi bất cứ câu hỏi nào mà Quý vị còn băn khoăn trước khi đồng ý tham gia nghiên cứu

**Mục đích:** Tìm hiểu ảnh hưởng của âm nhạc với lo lắng của khách nội soi tại Việt Nam. Nghe nhạc là phương pháp hữu hiệu trị liệu chứng lo âu ở những người đối diện với thủ thuật xâm lấn so với chăm sóc chuẩn không có âm nhạc. Nếu kết quả nghiên cứu có ý nghĩa sẽ là cơ sở y học chứng cứ áp dụng trong thực hành điều dưỡng can thiệp lo lắng của người bệnh trước nội soi.

**Mục tiêu:** Đề tài được xây dựng để:

- Điều dưỡng Nội soi có thêm một cách can thiệp không dùng thuốc cho người bệnh Nội soi khi lo lắng.
- Âm nhạc làm giảm sự lo lắng, nhịp tim, huyết áp như thế nào.
- Rút ngắn thời gian thủ thuật soi và giảm liều thuốc an thần.

**Những gì chúng tôi yêu cầu Quý vị làm:** Quý vị trả lời điều dưỡng mức độ lo lắng, mức độ đau trước và sau nội soi. Điều dưỡng sẽ hỗ trợ bạn tai nghe và máy nghe nhạc, nhạc Thiên được phát 40-60 nhịp mỗi phút. Chúng tôi sẽ theo dõi nhịp tim, nhịp thở, huyết áp, mức độ oxy trong máu

**Rủi ro và lợi ích:** Tôi không lường trước bất kỳ rủi ro nào khi bạn tham gia vào nghiên cứu này ngoài những rủi ro gặp phải trong cuộc sống. Có thể có cảm thấy khó chịu hoặc nhức tai do đeo tai nghe lâu. Nếu có Quý vị có thể báo điều dưỡng gỡ bỏ tai nghe ra.

**Bồi thường:** Không có bất kỳ bồi thường cho việc tham gia.

**Bảo mật:** Các hồ sơ của nghiên cứu này sẽ được giữ kín. Trong bất kỳ báo cáo nào chúng tôi công khai, chúng tôi sẽ không bao gồm thông tin nhận dạng của Quý vị. Tất cả dữ liệu và thông tin nghiên cứu sẽ được lưu giữ trên ổ đĩa được cất vào ngăn kéo trong tủ có khóa. Không có rủi ro nào dự đoán cho việc tham gia khảo sát này.

**Tham gia là tự nguyện.** Bạn có thể quyết định không tham gia nghiên cứu này và nếu bạn bắt đầu tham gia, bạn vẫn có thể dừng và không vào bất cứ thời điểm nào. Quyết định của Quý vị luôn được tôn trọng và không ảnh hưởng đến mối quan hệ hiện tại hoặc tương lai của Quý vị với bệnh viện hoặc thủ thuật của Quý vị

**Nếu bạn có câu hỏi:** Nghiên cứu sinh Nguyễn Thị Hồng Hạnh Cử nhân điều dưỡng. Vui lòng đọc phần trên và hỏi ngay bất cứ câu hỏi nào, vui lòng ký tên bên dưới nếu Quý vị muốn tham gia nghiên cứu. Nếu bạn có bất kỳ mối quan tâm cho việc chọn lựa hay điều trị như một người tham gia nghiên cứu, vui lòng liên hệ Cơ Quan Nghiên Cứu, Kepner Hall, Trường Đại Học Northern Colorado Greeley, CO 80639; 970-351-1910.

**Thông tin liên lạc của hội đồng:**

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Người tham gia ký tên \_\_\_\_\_ Ngày tham gia \_\_\_\_\_

Ghi họ tên \_\_\_\_\_

*Phiếu đồng ý này được nhà nghiên cứu lưu ít nhất ba năm sau khi kết thúc nghiên cứu và được hội đồng y đức IRB phê duyệt ngày [Ngày06/08/2019]*



Institutional Review Board

## CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

### UNIVERSITY OF NORTHERN COLORADO

**Project Title:** The effect of music on anxiety of the endoscopic clients in a private hospital in Ho Chi Minh City, Vietnam.

**Student Researcher:** Nguyen Thi Hong Hanh.

**Research Advisor:** Darcy Copeland, RN, PhD, Associate Professor, School of Nursing. You are being asked to take part in a project how effect of music on anxiety of the endoscopic clients. I am asking you to take part because you are an endoscopic client. Please read this form carefully and ask any question you may have before agreeing to take in the research.

**Purpose:** To learn the effective of music to endoscopic client in Vietnam, preferred music is a valid means of treating anxiety in persons facing invasive procedure when compared to standard care without music. If the research results are meaningful, it will be the evidence-based medical basis to apply in nursing practice to interfere with the patients' anxiety before intervention at endoscopy department.

**Objective:** This project sets to:

1. Vietnamese endoscopic nurse know how care client with anxiety.
2. How music decrease the anxiety, heart rate, blood pressure
3. Shorten procedure time and decrease volumne of narcotic drugs in sedative.

**What we will ask you to do:** You will answer nurse level of anxiety and pain before, during and after procedure. The nurse will give an earphone to listen Zen music before procedure around 30 minutes if you choice listening music. This music is at 40-60 beats per minutes. We monitor your heart rate, blood pressure and oxygen level.

**Risks and benefits:** I do not anticipate any risks to you participating in this study other than those encountered in day-to-day life. There may be discomfort or pain your ear due to wearing earphone for a long time. If yes, you can inform your nurse to remove the earphone. The benefit of the participant is listened music in waiting procedure. The nurse will support you the mp3-player, earphone.

**Compensation:** There is no compensation for participation.

**Confidential:** The records of this study will be kept private. In any sort of report we make public we will not include any information that will make it possible to identify you. Research records will be kept in a locked file; only the researchers will have access to the records.

**Participation is voluntary.** You may decide not to participate in this study and if you decide to take part, you may still decide to stop and withdraw at any time. Your decision

will be respected. It does not affect your current or future relationship with hospital or procedure.

**If you have question:** The researcher conducting this study are Nguyen Thi Hong Hanh RN, BSN. Please read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Research, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

**Committee Contact information:**

Student Researcher: Nguyen Thi Hong Hanh, Master's -student

Research Advisor: Darcy Copeland, RN, PhD, Associate Professor, School of Nursing

Email: [Darcy.copeland@unco.edu](mailto:Darcy.copeland@unco.edu)

Phone: Gunter Hall 3250 / 970-351-1930

Statement of Consent: I have read the above information, and have received answers to any question I asked. I consent to take part in the research.

Your Signature Name \_\_\_\_\_ Date \_\_\_\_\_

Your Print Name \_\_\_\_\_

*This consent form will be kept by the researcher for at least three years beyond the end of the research and was approved by the IBR on [6 August 2019]*

**APPENDIX B**  
**QUESTIONNAIRE**

<p><b>QUESTIONNAIRES FOR NURSE</b></p> <p><b><i>BẢNG CÂU HỎI CHO ĐIỀU DƯỠNG</i></b></p>	<p>Patient label</p>
-----------------------------------------------------------------------------------------	----------------------

After the client signed the consent form and opted to study the effect of the music on the anxiety of the endoscopic client. Endoscopic nurses will ask and fill the questionnaires.

Thanks you to nurses to support in the study.

*Sau khi khách đã ký giấy chấp thuận và chọn tham gia nghiên cứu ảnh hưởng của âm nhạc với lo lắng của khách Nội soi. Điều dưỡng sẽ hỏi khách soi và điền bảng câu hỏi.*

*Cám ơn sự hỗ trợ của Anh Chị đồng nghiệp trong nghiên cứu này.*

**A- Pre-endoscopy/: Preparation time before Endoscopy at the client's bay.**

***Trước soi: Thời gian chuẩn bị trước Nội soi tại khu theo dõi của khách.***

- 1- How old are your clients? *Khách bao nhiêu tuổi:.....*
- 2- Gender of your client? *Giới tính của khách: Male/Nam  Female/Nữ*
- 3- The client had an endoscopy before? *Khách từng Nội soi chưa? Yes/Có  No/Không*
- 4- The diagnosis pre-endoscopy/ *Chẩn đoán trước s*  
.....
- 5- The procedure of endoscopy/ *Thủ thuật Nội soi:*
  - a. Gastroscopy / *Nội soi dạ dày*
  - b. Rectoscopy / *Nội soi trực tràng*
  - c. Sigmoidscopy / *Nội soi đại tràng sigma*
  - d. Colonoscopy / *Nội soi đại tràng*
  - e. Gastroscopy and Colonoscopy / *Nội soi dạ dày đại tràng*
- 6- The anesthesia / *Phương pháp vô cảm: Local anesthesia/Gây tê  Sedative/An thần*
- 7- The behavior at interview /*Thái độ khi phỏng vấn:*
  - a- Tremor of hands, twitching, myoclonic jerks, easily crying / *Rung tay, co giật, giật cơ, dễ rơi nước mắt*

- b- Unsteady voice, grinding of teeth, dry mouth, swallowing / *Giọng nói không ổn định, nghiến răng, khô miệng, nuốt*
- c- Furrowed brow, strained face, flushing, pallor / *Cau mày, căng thẳng, đỏ ửng, xanh xao*
- d- Sighing or rapid respiration / *Thở dài hoặc hô hấp nhanh*
- e- Nausia, feeling butterflies in the stomach / *Buồn nôn, cồn cào trong bụng*
- f- Fidgeting, feeling restless and having to be on the move / *Lo lắng, cảm thấy bồn chồn và kích động*

8- The anxiety scale of the client before procedure/ *Mức độ lo lắng trước thủ thuật*

No present <i>Không lo</i>	Mild <i>Lo lắng ít</i>	Moderate <i>Lo vừa</i>	Severe <i>Nhiều</i>	Very severe <i>Rất nhiều</i>
0	1	2	3	4

9- The pain scores/ *Điểm đau:* /10. The position / *Vị trí* :.....

10- The vital signs of the client/ *Dấu hiệu sinh tồn của khách:*

- a. The pulse / *Mạch*.....bpm/ *nhịp trong phút.*
- b. The respiration rate / *Nhịp thở*..... bpm/ *nhịp trong phút.*
- c. The systolic blood pressure / *Huyết áp tâm thu*:..... mmHg
- d. The diastolic blood pressure / *Huyết áp tâm trương*:..... mmHg
- e. The saturation of peripheral oxygen (SpO2) / *Độ bão hòa oxy máu ngoại vi*: .....%

11-The client would like to listening music for relax? *Khách có muốn nghe nhạc để thư giãn?*

Yes / *Có*  No / *Không* .

If yes the client will be supplied with hear-phone to hear the music in 30 minutes.

*Nếu khách chọn "có", khách sẽ được cấp tai nghe nhạc không lời trong 30 phút.*

**B- Peri-endoscopy: The client sprayed local anesthetic in preparation time (gastroscopy) before endoscopy in the endoscopy room.**

**Trong soi: Khách được xịt thuốc tê thời gian chuẩn bị trước Nội soi (dạ dày) tại phòng thủ thuật.**

1-The anxiety scale of the client before procedure/*Mức độ lo lắng của khách trước thủ thuật*

No present <i>Không lo</i>	Mild <i>Lo lắng ít</i>	Moderate <i>Lo vừa</i>	Severe <i>Nhiều</i>	Very severe <i>Rất nhiều</i>
0	1	2	3	4

2-The pain scores/ *Điểm đau: ..... /10. The position / Vị trí :.....*

3-The vital signs of the client/ *Dấu hiệu sinh tồn của khách:*

- a- The pulse / *Mạch: ..... bpm / nhịp trong phút*
- b- The respiration rate / *Nhịp thở..... bpm/ nhịp trong phút.*
- c- The systolic blood pressure / *Huyết áp tâm thu:..... mmHg*
- d- The diastolic blood pressure / *Huyết áp tâm trương:.....mmHg*
- e- The Saturation of peripheral oxygen (SpO2) / *Độ bão hòa oxy máu ngoại vi:.....%*

**C- Post-endoscopy: The client awake, Aldrete cores over 9 points.**

**Sau soi: Khách tỉnh táo, điểm Aldrete hơn hay bằng 9 điểm.**

1-The anxiety scale of the client before procedure/*Mức độ lo lắng của khách trước thủ thuật*

No present <i>Không lo</i>	Mild <i>Lo lắng ít</i>	Moderate <i>Lo vừa</i>	Severe <i>Nhiều</i>	Very severe <i>Rất nhiều</i>
0	1	2	3	4

2-The pain scores/ *Điểm đau: /10. The position / Vị trí :.....*

3-The vital signs of the client/ *Dấu hiệu sinh tồn của khách:*

- a. The pulse / *Mạch: ..... bpm / nhịp trong phút*
- b. The respiration rate / *Nhịp thở..... bpm/ nhịp trong phút.*

- c. The systolic blood pressure / *Huyết áp tâm thu*: ..... mmHg
- d. The diastolic blood pressure / *Huyết áp tâm trương*: .....mmHg
- e. The Saturation of peripheral oxygen (SpO2) / *Độ bão hòa oxy máu ngoại vi*: .....%

4- The diagnosis after procedure / *Chẩn đoán sau thủ thuật*: .....

.....  
 ...

5- The time for endoscopic procedure / *Thời gian cho thủ thuật Nội soi*: .....

6- The client is willing to do another endoscopic procedure as doctor requests in the future. *Khách sẵn sàng thực hiện lại thủ thuật nội soi trong tương lai nếu bác sĩ kiến nghị.*

Yes/Có  No/Không .

7- Sedative medication / *Thuốc an thần*:

- a. Midazolam 5mg/1ml: .....mg
- b. Fentanyl 100mg/2ml: .....mg
- c. Propofol 200mcg/20ml: .....mcg

**APPENDIX C**

**PAIN SCALE**

## Pain Scale

0	1	2	3	4	5	6	7	8	9-10
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**APPENDIX D**

**APPROVAL LETTER FROM CITY  
INTERNATIONAL HOSPITAL**



Thư đồng ý

20/5/2019

Chào chị Nguyễn Thị Hồng Hạnh,

Dự án nghiên cứu của chị "Ảnh hưởng âm nhạc trị liệu đến sự lo lắng căng thẳng và giảm đau cho khách nội soi can thiệp tại bệnh viện tư nhân ở Việt Nam" được phê duyệt vào giai đoạn đầu vào ngày 20/5/2019.

Xin vui lòng cung cấp thêm đầy đủ thông tin của nghiên cứu để hoàn tất việc đánh giá.

Nếu có thay đổi bất kỳ kế hoạch nào của nghiên cứu, liên quan đến chủ đề con người hay nguyên tắc đạo đức, cần gửi lại phê duyệt như một nghiên cứu mới.



Thầy Giáo sư Bác sĩ Nguyễn Tấn Cường

Giám đốc y khoa

Bệnh viện Quốc tế City

Số 3, Đường 17A, Phường Bình Trị Đông B

Quận Bình Tân District, Thành phố Hồ Chí Minh City, Viet Nam

Điện thoại: 84-8 6283 1111 nhánh 8422 / 84 9 13 903 170

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201 Nguyễn Thị Minh Khai St., HCMC  
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*Putting Patients*  
**FIRST**



Letter of Approval

May 20<sup>th</sup>, 2019,

Dear Ms Nguyen Thi Hong Hanh,

Your project "The effective music to anxiety of the endoscopic client in a private hospital in Ho Chi Minh city, Vietnam" was approved as a first stage of study on May 20<sup>th</sup>, 2019.

Please provide further information of study for final assessment.

If any changes of research's plan that related to human subject or ethic principle, the new research plan must be submitted for approval.



Nguyen Tan Cuong, Assoc. Professor

Medical Director

City International Hospital

No.3, 17A, street, Binh Tri Dong B Ward

Binh Tan District, Ho Chi Minh City, Viet Nam

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*Partner Hospitals*  
**FIRST**

**APPENDIX E**  
**INSTITUTIONAL REVIEW BOARD APPROVAL**



*Institutional Review Board*

**DATE:** August 6, 2019

**TO:** Hanh Nguyen, BN

**FROM:** University of Northern Colorado (UNCO) IRB

**PROJECT TITLE:** [1443914-2] The effect of music on anxiety of the endoscopic client in a private hospital in Ho Chi Minh city, in Vietnam.

**SUBMISSION TYPE:** Amendment/Modification

**ACTION:** APPROVAL/VERIFICATION OF EXEMPT STATUS

**DECISION DATE:** August 6, 2019

**EXPIRATION DATE:** August 6, 2023

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Nicole Morse at 970-351-1910 or [nicole.morse@unco.edu](mailto:nicole.morse@unco.edu). Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.