

Music therapy in reducing preoperative anxiety related to cardiac patient

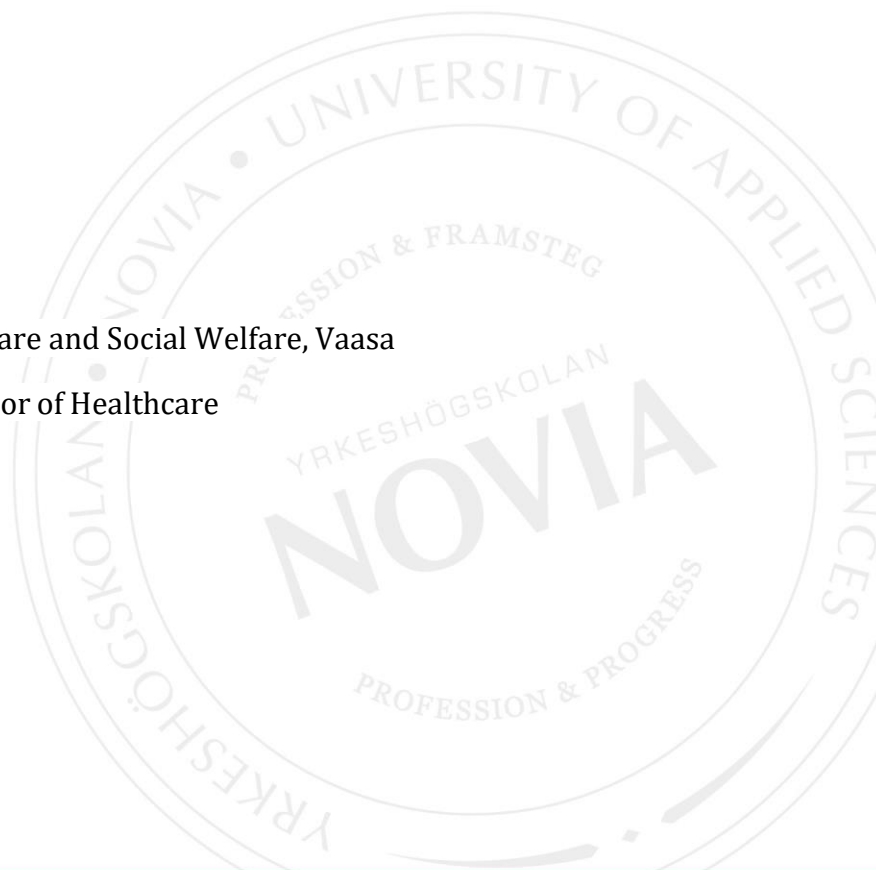
-a qualitative systematic review of literature from a randomized control trial

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Appendices 1

Abstract

Music therapy is a non-pharmacological intervention that aims to help in reducing anxiety for cardiac patient before undergoing a certain procedure. This research study utilizes the qualitative systematic review of literature from seven randomized control study related to music intervention of preoperative anxiety.

The goal of this study is to identify the significant effect of music intervention in the alleviation of anxiety in a patient undergoing a cardiac procedure and to increase awareness of the benefit of music as one form of nursing intervention in the nursing care plan.

Taking into consideration the Peplau's theory (1991) of interpersonal relationship have three important concepts. The patient that relates to the effect of music therapy and, the nurse and the nurse-patient relationship that relates to the importance of music therapy in the clinical working environment especially the nurses. The seven articles gathered speaks about how music listening helps in the stabilization of physiological indices and consequently the reduction of anxiety before a cardiac procedure. The analysis resulted in three main themes to answer the aim of the study, which are the patient, the nurse and the nurse-patient relationship. The three themes consist of few categories that explains the effect of music therapy and the significance to clinical setting respectively.

Language: English

Keywords: music, therapy, listening, cardiac, patient, anxiety,

preoperative, surgery

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1 Introduction

Music therapy is starting to draw much attention into the health care setting and the care for anxiety is one of them. Anxiety can be a normal feeling to encounter as a human being in everyday living, however for patient that is about to undergo to a cardiac procedure, anxiety is a significant indication of attention. Thorough planning of nursing intervention in the care of patients in preoperative cardiac surgery to alleviate preoperative anxiety is ought to be expected. According to Castoro and colleagues (2006) day surgery is becoming an integral component of healthcare; flexible approach from healthcare professionals is in demand to prepare the patient before the surgery. In Finland, Saarela-Kangas and Mattila (2009) noted that day surgery is now popular in a public hospital; patient admitted for a surgery and leave the same day or within the span of 12 hours.

During my practice in one of the public hospitals in Finland, I witnessed the influx of patient admitted for elective minor surgery related to cardiac procedure. Almost every day, I see new faces of patient that are anxious and restless. Several patients manage to create ways to alleviate the negative feelings by walking around, talking to the roommate or watching the television. The self-made intervention deemed to fail halfway as shown in the disturbances of the heart rhythm in the cardio scope and asking for more anxiolytic medicines. The burden of the scene of patients in high distress in the preoperative setting inspires me to do a research review related to an easy yet effective non-pharmacological intervention to use in the individualized nursing care plan of patient undergoing a cardiac procedure.

Music is non-pharmacological intervention based on a scientific and evidence-based use of music interventions to address the physical, emotional, cognitive, and social needs of people (Music therapy defines by American Music Therapy Association 2017). Horwitz (2013) in his study claims that there is a beneficial effect of non-pharmacological intervention to alleviate anxiety. Music therapy is an effective complement to the care of cardiac patients in terms of reducing anxiety in the preoperative setting and promotes postoperative recovery (Davis-Evans 2013). On the other hand, Bradt (2013) argues that over-consumption of anti-anxiety and sedative drugs gives a negative impact on the physical recovery of the patient in the post-operative setting.

This study shares contribution in enhancing the care rendered by nurses through increasing awareness of non-pharmacological remedy and assistant to the pharmacological intervention of preoperative anxiety.

2 Background of the Study

In this chapter, the author will define the concept of music and anxiety, the principles of anxiety and correlation to music, and the development of music therapy in the clinical practice.

2.1 The concept of anxiety

Anxiety is a worldwide debility regardless of nationality and economic status (Knaus 2014). It is universal and having no capacity to feel anxious in daily life considered abnormal (Gheissari 2006). Tompkins (2013) believes that anxiety alerts us in times of dangers, makes the body and mind to become more vigilant and pushes us to prepare for the worst-case scenario. Fear and anxiety become a motivator to an individual to take a decisive action like to fight, to freeze or to flee in times of threat (DiTomasso 2006). Anxiety triggers the preparation of the fight-or-flight mechanism for a distant danger to an individual (Gheissari 2006).

The physiological response of the body when panic anxiety strikes starts with the emotional psychomotor that dictates the senses leading to the fight or flight response of the body. When adrenaline is activated the vital signs surges, the pupil enlarges to gather lights and only thinks about defense (Videbeck 2011). Knaus (2014) mentions age and gender correlates of the risks of having an anxiety, female is believing to be more prone to develop anxiety than male, very common in preadolescent stage and increases in the middle years of life. The nature of anxiety is different from person to person and time to time, multiple problems present in a patient affect the baseline of anxiety (The Institute for Quality and Efficiency in Health Care 2018).

Rycroft (1988) and his study argues that anxiety is an alarm to a person to learn and to overcome the hurdles of life, either making him/her blindly optimistic or helplessly pessimistic. Gheissari (2006) explains in his study that an individual can be either negative or positive dependent to the primary response systems that includes the physiological, cognitive, and behavioral factors. The interaction of the three responses may play an important role in increasing or decreasing the anxiety. For example, worry promotes physical tension that will cause a negative effect to the well-being of an individual. However, the strong presence of physical tension intensify the emotional state if there is an absence of extreme worry. In the study of Horwitz (2013) relates the action of anxiety in stimulating a definite region of the brain responsible releasing the neurochemical's GABA epinephrine,

dopamine, and serotonin which activates the section of the brain like the amygdala, prefrontal cortex, and hippocampus to function.

In the dimensional model of anxiety, moderate level considers to enhance the performance and adaptively of an individual, however exceeding the optimal level can be hostile (Gheissari 2006). A more in-depth study of Videbeck (2011) mentions three categories of anxiety, the mild, moderate and severe. Mild anxiety stimulates the sensory that optimizes the person's ability to focus, while, moderate anxiety pertains to the disturbed feeling and having problems with concentration. In severe anxiety, person encounters more problems in thinking and finding reasons and characterized by muscle tightening, elevation of vital signs, restlessness, irritability, and getting angry.

Horwitz (2013) believes that anxiety relates with the narrowing, constricting, and tightening of the chest or throat. He argues that anxiety is synonymous to a distress characterized by malaise, nervousness, and fatigue, and commonly activated if there is a disturbance in the body system including cardiovascular, gastrointestinal and/or musculoskeletal system. The effect of anxiety in the preoperative care of patient undergoing a cardiac procedure will be further discuss in the problems of anxiety in preoperative setting.

2.2 The problems of anxiety in preoperative setting

Day surgery is the trending ways of government to promote efficient utilization of resources in the health care sector. Saarela-Kangas and Mattila (2009) define day surgery as an operation performed in the surgical room and needs intravenous sedation either general or regional anesthesia. The patient arrive and leave the hospital the same day or within 12 hours after arrival. According to Pritchard (2009) most often healthcare professionals may fail to recognize signs of anxiety due to limited time of care before the operation and the most common nursing care is feeding the patient with enough information instead. DiTomasso (2006) study and findings disclose that anxiety is the most common problems observed in the primary care setting and consequently the high incidence of anxiety causes the surge of treatment expenditures to an individual.

Preoperative anxiety is common for patient that will undergo a surgical procedure specifically the days before the operation or in the middle of preparation (Vaughn et al.2007). The stress is a tough experience as some patients typically started to feel distress just the idea of seeking a hospital help for an illness care or as soon the date of the surgery

is scheduled until admission to the hospital (Erkilic et al. 2017). The experience of anxious patients before the surgery includes various physiological changes such as increased blood pressure, heart rate and stress hormone cortisol. Deliberately feeling of danger, nervousness, tension associated by the arousal of the autonomic nervous system (Lisy 2014), restlessness, trembling, shortness of breath, fearful facial expressions, muscle tension and fatigue (Wakim et al. 2010).

Wakim and colleagues (2010) believe the causes of anxiety to patient before surgery originates from the undetermined medical or surgical procedure with the use of anesthesia, negative information from the experiences of relatives and friends, prolonged waiting of surgery time, and the fear of having a loss of control. In the findings of Beccaloni (2011) reiterates the root of anxiety to be the preconception of patient about the procedure such as uncomfortable, uncertain and can be health risks reasons.

Moderate level of anxiety is considered as the optimal level and favorable in preparation for the surgery stress. The more elevated the anxiety level the higher the risks of possible alteration of the patient's operation course and postoperative pain respectively (Vaughn et al. 2007). Anxiety and pain after surgery is describe in the curvilinear relationship. Lower anxiety level, the patient preparedness to post-operative pain is better. Higher level of anxiety makes the patient become oversensitive to stimulus or pain (Pritchard 2009). The high level of anxiety correlates to negative physical manifestations (Beccaloni 2011) such as delayed healing of wounds, risks for infection and slowed postoperative recovery (Lisy 2014), and possibly induce complication in the induction of anesthesia that put the life of the patient at risks.

Negative physiological impact heightened the senses such as acute pain, nausea, fatigue, and discomfort. It weakens the immune system that will delay healing and will end up with extended hospitalization. Negative psychological effect includes increased feelings of aggression, tension, nervousness, apprehension and depression (Pritchard 2009). A depressive impact of anxiety can proliferate a worrisome situation such as increasing the pain after the surgery, the risks of infection, and prolonging the recovery (Bailey 2010).

In the research findings of Takagi and Ando et al (2017) preoperative anxiety labels as a strong probable causative factor in complications in a Coronary Artery Bypass Grafting or CABG, as it increases the cardiovascular workload and delays the recovery after the surgery (Twiss et al 2006). Takagi, Ando and colleagues (2017) research results

implied depression and anxiety increases the risks for mortality and morbidity related to the delayed recoveries from atrial fibrillation and acute myocardial infarction and separate from medical factors after the surgery.

Completing a total well-being assessment and providing an intervention can be a challenge for nurses in the preoperative setting. Most often, the decision to care for the physical needs comes first over the psychological, emotional or spiritual needs (Nilsson 2008), (Pritchard 2009). Thus, Pritchard (2009) encourages nurses to use a tool in identifying and evaluating patients that exhibit signs of anxiety and needs extra care in-order to provide an effective assistance or care to pre-operative patient despite limited time.

Detection of anxiety assessed through a State-Trait Anxiety Inventory (STAI) scores that measures the feeling of the patient and the general feeling of the patient at that exact moment (Wakim et al. 2010). The STAI measures two kinds of anxiety, event anxiety (state) and characteristics anxiety (trait). The STAI has 40 items, based on the four-point Likert scale and total scores varies from 20-80 points. Other method of detecting preoperative anxiety is the Visual Analogue Scale (VAS). It is a tool commonly used in the assessment of pain level and tool to evaluate the anxiety level of a patient. The patient is asked to rate their anxiety from 0 to 10 where zero is the calm and 10 as the anxious one. In addition, the last method is measuring the vital signs before and after the intervention (Ogg 2015).

The WHO findings reveal that millions of surgical patients usually suffer from preoperative anxiety despite implementation of anxiety decreasing intervention worldwide. Moreover, preoperative anxiety can develop into a higher level of postoperative pain despite using available measures to reduce postoperative pain (Kühlmann et al. 2018). Bojar (2010) advises to be cautious in using the anxiolytic medicines to avoid excessive sedation that will inhibit the action of the central respiratory drive. Thus, Pritchard (2009) recommends the integration of non-medicine approach to assist the reduction of anxiety.

The approach aims to provide care in the psychosocial needs of the patient. Proposing an opportunity for an active interaction during the surgical procedure, providing a comfortable environment for the patient with the moral support from the family or nearest kin, creating an individualized and patient-centered nursing care-plan. Explaining the information leaflets and finding answers into the patients' questions (Pritchard 2009). Family education, techniques to promote relaxation such as deep breathing, cognitive restructuring (Videbeck

2011), talking to other people, reading, doing exercise, and distracting the body through music listening (The Institute for Quality and Efficiency in Health Care 2018).

The findings of Videbeck (2011) assumes regardless the influx of many studies about various interventions in a pre-operative anxiety, pharmacological and non-pharmacological combination or both psychotherapy and medicine consider to be an effective remedy in alleviating anxiety. The implementation of music intervention in the preoperative setting as non-pharmacological complementary or as noninvasive intervention to lower perioperative anxiety and postoperative pain is seen to be feasible (Stanton 2015). The humans' response to music in terms of psychological, neurological and physiological are not affected even in a state of illness or injury (Darnely-Smith and Patey 2008).

2.3 The non-pharmacological approach of music

Music is defined as any sound production that has good coordination (Davis-Evans 2013), a vocal, instrumental or mechanical sound that produce rhythm, melody or harmony (Smith-Darnely and Patey 2008). According to Nilsson (2008) in the right hemisphere of the brain, register the impact of music, although the left hemisphere of the brain may greatly affect the analytical interpretation of the music. The auditory center of the temporal lobe of the brain occurs an auditory perception that give signals to the thalamus, midbrain, pons, amygdala, medulla, and hypothalamus.

Music can be used to purposely stimulates the hearing of a person as listening to it repeatedly allows the listener to be acquainted with the music (Davis- Evans 2013) . Music coordinates closely with body rhythms, intonation, and changes in emotions (Darnely-Smith and Patey 2008). Habibi and Damasio (2014) argues that the different types of music stimulate a vast range of drives and emotions that eventually triggers the experience of feelings which is important to body's homeostasis.

Several types of music provide different results like the playing of music in every occasion in some culture (Trappe 2012), such as birth, and renewal of seasons, hunting and rituals of a passage. The use of music is to enhance and relax the moods, and increase the patience of all the participants (Gauthier 1993). Music is use as a mediator in a non-verbal communication, difficult situation that involves strong emotions of anger or rage (Smith-Darnely and Patey 2008). Playing nursery rhymes to sooth a toddler fast beat tempo for

athletes, jazz music to ease stress. Designer music to increase relaxation and cognitive capacity and physical status of a person (Davis-Evans 2013). Popular and Latin American music to stimulate a spirit, mood, and motivation, and meditation music perceived to have sedative effects suited for spiritual reflection activity such as Yoga and Tai Chi (Trappe 2012).

Jecklin-Sand and Emerson (2010) recommends the use of slow tempo music without words as it promotes synchronization in a positive vibratory pattern. Trappe (2012) agrees in classical music as the most beneficial kind of music in terms of caring for the health of a patient. Bach, Mozart and Italian composers' music are effective and an optimal choice for patients that has cardiovascular problems and for people suffering from anxiety, pain, stress, and sleep disturbances. According to the entrainment theory of Jecklin-Sand and Emerson (2010), the heart and other organs and cells in the body of a person have a vast number of rhythms and vibrations. The repetitive consistency of music rhythm played entrains the pace of the body's rhythm such brain rhythms, vital signs and the like.

2.4 The effects of music therapy in health care setting

Music therapy refers to the usage of music and or musical elements like sound, rhythm, melody, and harmony (Darnley-Smith and Patey 2008). According to the American Music Therapy Association (2017) music therapy is a scientific and evidence-based use of music interventions. The therapy addresses the physical, emotional, cognitive and social needs of people. Music therapy aims to enhance or restore functions of an individual to gain a better quality of life through prevention and treatment (Darnley-Smith and Patey 2008), and to reverse a not healthy and not pleasant health conditions to a desirable one (Johnson et al. 2012). Physical rehabilitation of clients, a motivator for emotional support for patient or families, a therapeutic tool to improve the client's activity and divert attention or enhance the communication ability for those clients that are suffering from difficulty of expressing themselves in words (American Music Therapy Association 2017).

Music therapy has two types of techniques either passive or active listening. Passive music listening pertains to the act of listening to a live or prerecorded music without any involvement or direct engagement while active music therapy means a direct involvement in the caring process. The individual participates in singing, music composition and or playing the instrument (Prakash w.y.). Recorded music therapy refers to the pre-recorded music chosen by the practitioner or the patients themselves. Live music on the other hand involve

active playing of a music therapist based on the patients physiological and emotional state needs (van der Heijden et al. 2015). Pre-selected and self-selected music have significant position in assessing the effect of music therapy. There is a consistency of positive effect of music in anxiety reduction, but the results are more evident among the surgical patients who selected their own music during the therapy (Vetter et al. 2015).

The application of music therapy in healthcare started by Pythagoras, a Greek philosopher in the sixth century, when he claims that music has a great influence on health. He prescribed music and diet to restore and maintain the harmony of body and soul (Nilsson 2008). Särkämö in his study (2015) argues that music therapy enhances the ability to extend the attention, conditioning the mood, decreasing confusion and depression and improving the memory. He reasons out that music therapy has the capability to stimulate and reshape the brain by inducing neuroplasticity changes in the frontal lobe and limbic areas of the brain, the anterior cingulate gyrus and the ventral striatum that are responsible for improving the cognitive and emotional recovery (Academy of Finland 2015).

Music is categorized according to the purpose of care, either for healing or use as a complement in curing a physical illness. Vibroacoustic therapy is a music therapy with the goal of treating physical problems such as pain and psychosomatic disorders by using vibration sounds or single tones. Music bath which literally means bathing the body with sound and vibration for the care of asthma, cerebral palsy, abdominal pain, insomnia, menstrual pain, constipation, and sports injuries. Supplemental music therapy is used in curing physical illness, minimize the use of drugs by reducing pain, anxiety or stress, and as a comfort music during childbirth and kidney dialysis (Darnley-Smith and Patey 2008). Auxiliary therapy in pediatrics, to pacify preterm infants in the NICU during multilayered, multimodal stimulation, reinforcement of sucking/feeding ability, clinical events for children to reduce anxiety and pain (Kamioka et al. 2018). And as a nursing intervention during the intubation time of patient undergoing a cardiovascular surgery (Twiss et al. 2006).

Patient in the perioperative setting is considered to be in the middle zone of being conscious and sleep, a state where many senses are not well functioning but the hearing sense functions well. This supports the capability of music to control or reduce distress. Creating an environment that triggers and maintains relaxation, well-being and comfort (Nilsson 2008). The optimal effect of music therapy to the anxiety achieved before the surgery, as it

will give an alleviation immediately (Kühlmann 2018), and eventually reducing the amount of anesthesia required before surgery and post-operative setting or in the rehabilitative medicine (Trappe 2012).

Self-selected music elevates the relaxation state and enhances the quality of life of the patient who underwent a cardiovascular surgery. Classical music that includes music from Bach, Mozart and Italian composers, meditation music and heavy metal music promotes the decrease of heart rate, systolic and diastolic values compared to pop music (Trappe 2017). Music occupies the mind, sooth and fills with thoughts that allow them to escape the burden of the reality (Nilsson 2008). Distraction from the loud noise of monitors, other patients, staff and equipment in the preoperative area (Johnson et al. 2012).

Generally, music therapy has shown enough evidence to support its integration into clinical use (Trappe 2017). Music is a safe, non-invasive and low-cost method to help patients reduce anxiety and pain (Hole et al. 2015), has a healing force (Bonny and Savary 2005) before induction of anesthesia (Johnson et al. 2012). Sedatives administration to counter anxiety before surgery can have side effects such as drowsiness, respiratory depression, may interact with other esthetic agents that may delay the recovery or discharge (Beccaloni 2011).

The nursing focus deals with the interconnectedness of body, mind, spirit, emotions, energy, environment and relationships in the overall health status of a person, and the improvement of nursing interventions to endorse healing and well-being of a person (Jecklin-Sand and Emerson 2010). The incorporation of music therapy as one of a preoperative nursing routine (Ni et al.2012) is effective in calming patients, enhancing vital signs, and overall comfort of patient (Wakim 2010). It helps to alleviate discomfort and anxiety of patient inside a room with strange surroundings and the fear to morbidity, decreasing the risks of complications (Ni et al, 2012). Music is very safe and has an anxiolytic effect to patient undergoing a cardiac catheterization. The anxiolytic effect of music can affect the pre-procedural nursing care, the dose of ancillary anti-anxiety and pain drugs, demand of myocardial oxygen and stability of the hemodynamic stability (Jayakar et al.2017).

The delivery of music therapy is not necessary done by a music therapist, a professionally trained person that is responsible for giving music therapy. The effect of music does not depend on person who delivered (Davis-Evans 2013) as music has its nature that remain unchanged by the giver (Trappe 2012). While, a strong encouragement coming from a

health practitioner especially, nurses while implementing the therapy increases the effect (Davis-Evans 2013).

Music and nurses has a long history of inter-relation since during the Crimean war when Florence Nightingale noted the capability of music to assist in the healing process of the injured soldiers. Wide implementation of specific musical prescriptions in 1926 advocated by a nurse (Nilsson 2008). The advantages of music in the nursing perspective include cost effectivity, easy to administer, promote nurse-patient rapport, and yield positive result (Wakim et al. 2010). In general, all kinds of music can trigger the autonomic nervous system. It affects the physical body's rhythm of perceptions (Kemper and Danhauer 2005), but taking into consideration the individual's preference (Kühlmann 2018), and willingness (Ogg 2015) needs to be observed as a nurse.

2.5 Practice of music therapy in Finland

Music therapy in Finland is widely known in the care age-related brain disorders as it helps improve the recovery from speech and cognitive disorders after stroke and reduce neuropsychiatric and neurocognitive symptoms in patients suffering from dementia. The neurology units in Finland recommend listening to music as a rehabilitation form, but the lack of systematic music-based rehabilitation is becoming a hindrance (Academy of Finland 2015).

According to The European Consortium for Arts Therapies Education (2016), music therapy is one of the largest groups of art therapists in Finland and has been partially recognized as health profession. The reason cited is the action of Social Insurance Institution of Finland or KELA to reimburse the cost of services rendered by music therapy for a maximum of 3 years in rehabilitative psychotherapy and medical rehabilitation for people with severe disabilities based on statutory liability.

Music therapy is supported by the state, but the service access remains difficult. The problem arises in the limited number of service points and music professionals working in this kind of field. In Finland among the 70 service offices and 500 professionally trained music therapist, only half of them are full-time clinicians for both in and outpatient care (European Consortium for Arts Therapies Education 2016).

3. Theoretical Framework

In Peplau (1991), interpersonal relation theory, nursing defines as a therapeutic, a healing art in supporting the person who is sick or in need of healthcare. Nursing seen as an interpersonal process as it focuses on the individual's interaction whether between two or more people with the same goal. The nurse and the patient both have respects for each other and learns accordingly as a product of therapeutic interaction.

This theory emphasizes that an individual will grow and obtain a new knowledge if the person can choose an outside stimulus from the environment and reacts with the same stimuli. Goals are achieved together by the nurse and the patient through a series of steps together. The relationships are built according to these steps, but the nurse still can choose on how she or he practice nursing based on her or his skills, technical abilities and assuming the different kinds of roles (George 2011).

According to Peplau (1991), interpersonal relations theory focuses on psychodynamic nursing wherein the nurse learns to understand own and another people's behavior. The theory involves the application of principles in human relations to the thing that perceived as needs. When the patient and nurse identify a problem, together both starts to find ways to relieve the situations. Overcoming factors that may influence the perception of both parties such as contrasting idea is the key point in the interpersonal relationship (George 2011).

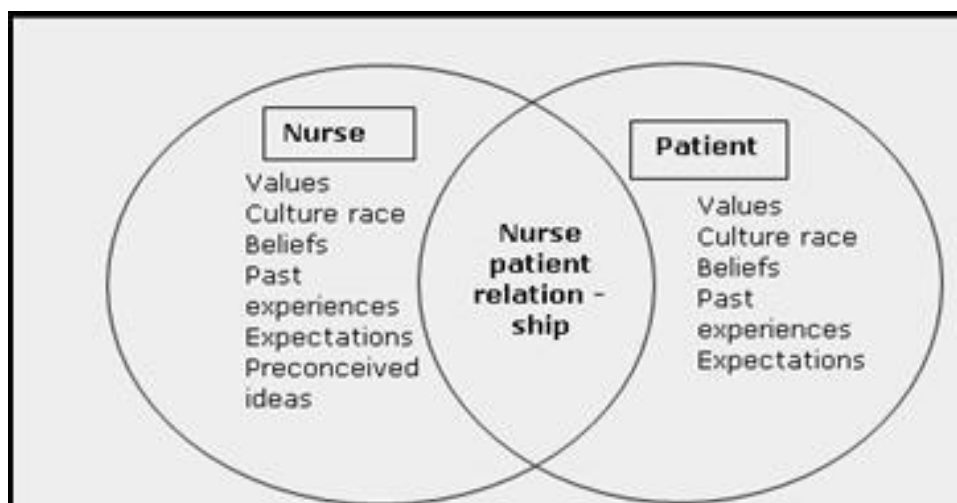


Figure 1. Representation of Peplau's Interpersonal Relations (Current Nursing 2012).

Peplau (1991) mentions the nurse-patient relationship has four phases. First is the orientation phase, the nurse meets the client for the first time and the problem defined in this phase. The nurse finds what type of service that the client needs and answers to questions, gives information, and explains the roles. The client in this phase is a seeker of assistance. The needs relayed to the nurse, asks questions, imparting preconceptions and expectations of experiences. In the identification phase, the client tries to work interdependently with the nurse and starts expressing his/her emotions and the feeling of belonging and hope to begin to become stronger.

The exploitation phase, the client accustoms to the nurse and utilize the available services provided. The client may seek attention or make small requests and start to feel independent. The nurse in this phase uses different types of communication and support the client in any means to achieve the final phase. The last phase is the resolution phase; in this phase therapeutic relationship no longer needed therefore, the nurse-patient relationship is terminated (Peplau 1991).

Peplau (1991) argues that to achieve an interpersonal relationship the nurse must take in various roles during the encounter with the patient. The nurse as a stranger will meet the client without prejudice treats the patient like other stranger ones come to meet in other settings. Starts to identify the needs of the client objectively and shows acceptance and warmth to pave the way in building trust. The nurse as a resource will feed the patient with important information that she/he needs to know.

The nurse as a teacher, Peplau (1991) focuses on educating the patient and giving information to improve his/her knowledge in fulfilling the needs. The nurse as a leader will actively guide the patient in participating in the treatment to achieve needs. The nurse as a surrogate helps the patient to determine the difference and similarities between dependence, interdependence, and independence. Lastly, the nurse as a counselor provides enlightenment to a patient in learning something from his/her own experience to gain more knowledge and understanding about it.

George (2011) cited the importance of fulfilling the concepts of nursing for the improvement of the patient and the nurse. The important concepts pertained are needs, conflicts, and anxiety as a complement to its aims in the psychological aspects of a person. In clinical

practice of Peplau's theory helps in the nursing interventions of anxious patients. Assisting the patient to point out the psychological and the growth needs.

Peplau's interpersonal process enhances the nurse-patient communication and interviewing skills of a nurse. Providing a communication according to the patient needs after a close monitoring and found out the needs of the patient. The perpetual guidance of her theory is the continuous modification of nursing intervention based on the change of needs of the patient. Re-assessing and remodeling the nursing actions leads an advantage to the outcome (George 2011).

4 Aim and Problem Definition

The goal of this study is to identify the effect of music intervention in the alleviation of anxiety in-patient undergoing a cardiac procedure according to the present studies. Another aim is to increase awareness of music therapy as one form of nursing intervention in nursing care.

Following questions will be answered:

1. What is the effect of music intervention in the anxiety of cardiac patient undergoing a cardiac procedure in a preoperative setting.
2. How can nurses utilize music therapy in supporting the patient to reduce preoperative anxiety according to the data collected?

5 Method

This chapter describes the method used in completing this study, the type of literature review chosen, steps in data collection and the ethical consideration.

5.1 Systematic Review of Literature

According to Polit and Beck (2017) literature review pertains to a well-written summary after reading a huge amount of information, synthesizing the evidence and summarize it to form a few pages study proposal. A systematic review is a form of investigation conform to the rules of the original research use in the study. In this approach, numbers of evidence topic are meticulously integrated into the synthesis and let the evidence-based practice to

be known. Systematic reviews consider by majority as a pillar of evidenced based practice (Polit and Beck 2010).

Qualitative studies show an intensive summary of facts or occurrences in every expression. Several researchers investigating under an ideological structure to attract attentions to identify social problems, social needs and social change (Polit and Beck 2010). Holly and colleagues (2017) define the goal of qualitative research to deepen the understanding towards meaning, practice, behavior and process of mundane experience. The process of doing a qualitative research starts with a thorough examination of several individual research, bringing in and analyzing the themes, metaphors or categorization, and assert an acceptable transcript of the several individual research.

5.2 Data Collection

The majority of sources used in this study is acquired from Finna, a search engine embedded in the Tritonia library website via Novia University of Applied Sciences and University of Vaasa, borrowed books from Tritonia library and e-books from Proquest Ebook Central. In the search process in Finna, keywords are used which includes “music therapy”, “music listening”, anxiety, cardiac, patient, surgery, heart and preoperative. Quotations to non-separated words, Boolean operators like AND and OR, and truncation symbol to limit and expand searches. Yielded articles often directed to different databases such as Google scholar, EBSCO, CINAHL, PubMed and Medline. The e-articles used in the content analysis are downloaded from these databases that have an open access.

Zurynski (2014) recommends the use of PRISMA flowchart in the inclusion and exclusion criteria of the yielded evidence, while Polit and Beck (2017) suggest reading the abstract of the found references to help in deciding on what to include and exclude in the screening stage. The inclusion and exclusion process used in this study followed the PRISMA flowchart. The articles are identified from the search engine Finna and CINAHL/EBSCO, Finna yielded 351 results and CINAHL/EBSC yielded 237 results, which make totaled 588 articles. The 588 articles screened initially and eliminated 159 articles that did not meet the initial criteria to be peer reviewed, English language, e-articles and published from 2012 to 2019. The 390 articles that remained furtherly screened for eligibility.

In the eligibility assessment, 232 articles are excluded for not meeting the criteria to be in full-text and no duplicate articles. The remaining 158 articles are examined individually through the abstract to check if the research is in accordance with this study's topic interest. Articles that meet all the criteria and to be included in the content analysis are 7 studies of music intervention in the preoperative setting before a cardiac procedure from randomized trial control study. The five articles are quantitative method and the remaining two articles are mixed method. The articles included in this study are listed in the appendix.

5.3 Content Analysis

Polit and Beck (2010) describe content analysis as the organization, structure supplication, and meaning suggestion from any kind of data and traditions. Qualitative analysis is a challenging endeavor as it has an absence of universal rules in data interpretation. Leading to a data examination and making the presentation of findings more gruel. Content analysis is a term used to a study not based in an specific traditional research. Qualitative content analysis is normally used either a template or in editing analysis style to analyze the content of a narrative data and eventually figure out the themes and patterns.

The search of the themes, patterns and irregularities can be made easier with summarize charting that make it more visible to realize the changes of behaviors, happenings and processes. The process of establishing a theme is not always smooth. The researcher tends to project a theme from the narrative evidence, re-analyze the theme if it suited, making a revision as often as it need before continuing to the final theme (Polit and Beck 2010).

In this study, the author ought to use the editing analysis style. Editing style study is, a qualitative analysis strategy where the researcher acts as an interpreter to look for the significant data needed in the study. In this approach, the category scheme is highlighted after the researcher identify the segments and put a corresponding codes to classify and to form the data in a group. The latter step is the assessment for patterns and structures that can bridge the categories (Polit and Beck 2010). Another approach used in this study is the deductive approach, whereas the author based the themes from the interpersonal phases of Peplau's theory.

5.4 Ethical Issues

The National Advisory Board on Research and Ethics (2012) states that all institutions that involve in a research work in Finland, such as universities of applied sciences must abide by a rule of applying for an ethical review. The National Advisory Board on Research and Ethics regulates the recommendation and incorporates the ethical standard which includes adhering to the right pattern of researching, avoiding the creation of dishonesty and fraud. A research misconduct, Gray et al (2017), in writing a systematic review monitored strictly to achieve the main goal of the research, to produce scientific knowledge that is acceptable to the society. Misconduct in research refers to a fabrication, a falsification, or plagiarism while in the process of performing or reviewing the research. Writing an unproven result or making up the results, reports, and recording of the study is a direct evidence of fabrication in research. Falsification of research is a direct manipulation of the materials used in the study (Gray et al.2017).

The National Advisory Board on Research and Ethics (2012), describes plagiarism as a direct adaptation or copying of other researcher's work without a proper acknowledgment or citation in the research paper, research plans, manuscripts, articles, other texts or parts of them, visual materials, or translations. Misappropriation is an unlawful representation or owning of other researcher's works like research result, idea, plan, observation or data. Other negligence that the researcher must avoid in writing a systematic review is making an error in citing the authors like putting a name that not even related to the research or so-called ghost author. Trying to increase the value of the research study by deliberately adding imaginary bibliography and references.

The author maintained the integrity of this study by using a qualitative systematic literature review guideline. All the sources of the materials used in the study were given a proper acknowledgment in the ongoing text and in the bibliographic reference. This study ensures information abide by the correct standard by using a scientific resource through extracting information from peer-reviewed databases, scholarly system and scientific publication. Moreover, the author uphold the ethics of writing by following the honest process of writing and genuine publication of studies. The data is truthfully recorded and presented and not intentionally tampered the results to favor the desired outcome.

6 Results

To acquire data that validates the aim of this thesis seven research literatures from a randomized controlled trial are selected. The source articles organized in a table form with the summarized information of the author, the title of the study, the year of publication, the goal, aim or objectives, the method used and the outcome.

The articles are decoded by using the qualitative method analysis and obtained codes and categories that bridge the significance of music intervention to the anxiety experience of patients before undergoing a cardiac procedure and the correlation effect to the nursing staffs. The achievement of the goal is guided by the two search questions, “What is the effect of music intervention in the anxiety of cardiac patient undergoing a cardiac procedure in a preoperative setting?” and “How can nurses utilize music therapy in supporting the patient to reduce preoperative anxiety according to the data collected?” There are three main themes gathered to answer the research questions are *the patient, the nurse and, the nurse-patient relationship*.

6.1 The Patient

The patient is a theme pertains to the receiver of the music intervention. Three categories acquired to answer the effect of music intervention in the anxiety of cardiac patient, which includes *culture, past experience, preference and physiologic effect*.

Culture

The type of music play an important role in achieving therapeutic effect of music to the patient. Amiri and colleagues (2017) claim that patients music preference depends on origin such as culture and religious beliefs, and social structure (Uğras et al. 2018). In Iran, listening to music is a taboo, therefore listening to nature sounds is an alternative intervention to help patient in the preoperative care. Nature sounds refer to the reminiscent of the natural ecology. Hence, it does not contradict with the cultural and religious beliefs of the patient (Amiri et al. 2017). On the other hand, Classical Turkish music is peculiar in Turkish culture and have positive effects in the reduction of preoperative anxiety of Turkish patients. Thus, patients coping skills improve because of familiar melody and rhythmic music to the autonomous nerve system (Uğras et al. 2018).

Past Experience

Previous experience of surgical procedure encourages the patient to become optimistic but at the same time pessimistic (Ghetti and Seton 2013). Awareness of the details of cardiac catheterization procedure results in heterogeneous demand from the patient. Some patient prefers without any therapeutic anti-anxiety intervention, while others demand support intervention, as the past memory is still vivid. Several patients claim the reminiscing effect of music enables them to remember good memories and help them to feel happy which resulted to a positive effect in their well-being (Ghetti and Seton 2013). In the findings of Kipnis (2016) reveals that type of surgery, past experience of sedatives or invasive procedure do not pre-determine the surge of preoperative anxiety.

Preference

Patients have different view which phase of the care music needs to be implement. Some enjoys music preoperatively and post-operatively, while some perceived a disturbance due to noise from the environment (Kipnis 2016). Self-selected music genres that are instrumental and slow in tempo shows a significant effect in the reduction of anxiety (McClurkin and Smith 2016). The New Age music, classical music (Kipnis 2016), natural sounds, Classical Turkish music and Classical Western music positively lowers the systolic and diastolic blood pressure. Classical Turkish Music solely displays significant effect to the heart rate (Uğras et al. 2018).

Physiologic effect

Music induces different effects which includes neurological or physiological effect (Amiri et al. 2017), and relaxing effect to the autonomic nervous system. Physiological effect decreases the level of state anxiety (Kipnis 2016), changes in the state anxiety relates with the results in STAI measurements done before and after surgery (Ghetti and Seton 2013). Findings demonstrate the correlation as the preoperative anxiety level decreases the STAI-score follows after listening to music (Uğras et al. 2018).

The increase of physiological responses values is due to the stimulation of autonomic nerve system through anxiety. Music activates the para-sympathetic responses to counter the anxiety effect, which includes increase blood pressure, heart rate and breathing rate (Uğras et al. 2018). Patients' listening to music reveals lower level of blood pressure and heart rate compare to the pre-intervention vital signs such as elevated blood pressure and heart rate, and decreased blood oxygenation saturation (Kipnis 2016). Lowering the blood pressure and

respiratory rate responds to the reduction of anxiety (McClurkin and Smith 2016). Deviation in the physiologic indices such as systolic and diastolic pressure, heart rate and blood oxygenation saturation before and after music intervention consider significant in relation to anxiety (McClurkin and Smith 2016), (Kipnis 2016).

The relaxation effect responsible to the improvement in the vital signs of patients after listening to music. The autonomic nervous system is activated which allows the patient to enhance their coping abilities despite the stressful situations of surgery. Music blends with the breathing rhythms, heart activity, blood circulation and speech (Kipnis 2016), liable to the activity decline of the sympathetic nervous system and activity increase of the parasympathetic nervous system (Lee et al. 2012). Mild elevation of the systolic blood pressure because of active music engagement is a positive effect to increase the sympathetic nervous system arousal (Ghetti and Seton 2013).

Anxiety relief relates to the changes of the heart rate after the music intervention. The heart rate is significantly decreased compare to patient that did not receive any music intervention (Lee et al. 2012). Jazz and classical music show a significant effect in lowering the heart rates (McClurkin and Smith 2016). Jazz and classical music calm the hearts through its relaxing low dynamic amplitude which ranges between 60-80 bpm (Uğras et al. 2018). Serum cortisol levels is a significant factor to consider together with the physiological indices before a cardiac procedure (Amiri et al. 2017). Cortisol is considered as one of the typical biomarkers used in the evaluation of stress effect. Anxiety and stress increase the level of serum cortisol and catecholamine and music therapy shows a significant effect in decreasing the level of serum cortisol (Uğras et al. 2018).

6.2 The nurse and the nurse-patient relationship

Two themes are acquired to answer the second question and relate music therapy as an intervention for nurses to reduce preoperative anxiety. The two themes include, **the nurse** and the **nurse-patient relationship**.

6.2.1 The Nurse

In **the nurse** theme three categories was found which include *demographic factor*, *expectations* and *time*.

Demographic factor

The demographic factor does not significantly affect the implementation of music to the patient. The satisfaction from music bears no relation to the gender of the patient (Guétin et al. 2016) and the levels of preoperative anxiety experience by the patient has no direct relation to the difference in sexual orientation (Kipnis 2016), (Lee et al. 2012). Selection music between men and women do not significantly differ on age (Guétin et al. 2016).

Expectations

The staff expect to execute an efficient practice in decreasing the burden of patient while waiting for surgery (Ghetti and Seton 2013). Providing care to reduce preoperative anxiety in order to have a better control of post-operative complications (Uğras et al. 2018). Non-pharmacological approach like music therapy promote the wellness of patient in preoperative care setting (McClurkin and Smith 2016). Music is effective, simple, not invasive and, inexpensive method to decrease anxiety before surgical procedure (Uğras et al. 2018). The patients that went to a music intervention experience a lesser anxiety (Amiri et al. 2017) and reveals positive effect from the beginning and the end of intervention (Ghetti and Seton 2013). Several patients are expected to have lack of knowledge to the therapeutic effect of music before a surgical procedure. Exposure to music listening yield a heterogeneous reaction, such as willingness, dislike or just do not care about it. Patients bound to develop own coping mechanism to shake off anxiety, some are talking to healthcare practitioner, alone praying or meditation, watching television, or just sleeping (Ghetti and Seton 2013).

Time

The implementation of music intervention varies for every patient. Studies show positive effect of natural sounds to Coronary Artery Bypass Grafting (CABG) patients but have significant difference during implementation time of the intervention before the operation. Several patients listen to music intervention 15-minutes (McClurkin and Smith 2016), 30-minutes (Amiri et al. 2017), 10-minutes (Lee et al. 2012), and 20-minutes (Guétin et al. 2016) before procedure. The 10-minutes intervention displays effect by decreasing the VAS score and heart rate of the patient (Lee et al. 2012). The 15-minutes classical music listening shows clinically significant on the systolic blood pressure and influencing the trait anxiety levels (McClurkin and Smith 2016). The 20-minutes music intervention demonstrated a significant effect in reducing the preoperative anxiety (Guétin et al. 2016). The 30-minutes music therapy have positive effect even just after a single session of intervention (Ghetti and

Seton 2013), more precisely on the diastolic blood pressure of the patient. Classical music listening provides the highest level of significance and self-selected music listening decreases the individual's state anxiety level (McClurkin and Smith 2016).

6.2.2 Nurse-Patient Relationship

In the **nurse-patient relationship** theme, one category was found that is *communication*.

Communication

The surge of preoperative anxiety of a patient apparently is due to an insecure feeling of being in an unfamiliar environment (Uğras et al. 2018). Several patients may manage to converse with the staff to distract themselves before the procedure. Sharing their emotions about the operation, fears and distress related to outcomes. Familial stressors, coping idea technique, anticipation of test results and, discomfort being at the hospital (Ghetti and Seton 2013). Self-reported anxiety and the use of scaled score instrument may suggest discordance. Several patients can strongly claim they have low level anxiety but the anxiety score reveals contradiction (McClurkin and Smith 2016). The conflict arises from the completion of the assessment blanket such as patients are in stressful and anxious state, and the questionnaires may contain items that are intimidating for less educated patient (McClurkin and Smith 2016).

Finding the right approach to communicate to the patient's emotions is challenging. Studies suggest that the staff should maintain a positive facial expression during the whole duration of verbal interaction. Encourage positive emotions is related to relieving stress (Ghetti and Seton 2013). Music that is known to the patient promotes anxiety-reduction and eventually regaining autonomy. To reach the positive effect proper communication between staff and patients should be establish before induction of music intervention. Factors to consider include the type of music the patient prefers and music that does not contradict the cultural background of the patient (Uğras et al. 2018). A quite behavior of staffs and the feasibility of background music while doing a staff rounds or routine activity helps the patient not be distracted all the time (Kipnis 2016).

7 Discussion

The goal of this study was to identify the significant effect of music intervention in the alleviation of patient's anxiety undergoing a cardiac procedure. Another aim was to increase awareness of music integration as one form of nursing intervention in nursing care. The

research questions were formulated, and the seven-resources acquired are scrutinized using the qualitative content analysis. Framing the categories found is based from the Peplau's interpersonal theory of which includes *the patient, the nurse and the nurse-patient relationship*.

The first search question asked for the effect of music to anxiety level of patient before cardiac procedure captures the idea of the importance of alleviating the anxiety of patient preoperatively because high level of preoperative anxiety ignites negative physical manifestations to the patient post-operatively. Peplau (1991) in her interpersonal relation theory defines nursing as a therapeutic healing art to support the sick or in need of healthcare. The patient as the seeker of assistance meets the nurse in the orientation phase as stranger and the patient's needs relayed to the nurse for the first time. The nurse understands that the patient is a human being that embodies different culture, past experience, beliefs and physiologic attributes that will affect the planning and implementation of an intervention.

Taking into consideration that culture background can dominate the choice of music of a person. Intervention music should not contradict to the origin's culture, religious beliefs and social structure. Familiar music to the culture enhances the relaxation effect of the music that can reduce anxiety (Uğras et al. 2018), (Amiri et al. 2017). The past-experience of procedure or any significant event in the life of the patient can affect the intervention optimistically. In addition, pessimistically that may ruin the desired outcomes (Ghetti and Seton 2013). The preference of a patient about music can prematurely fail or succeed the effect of music to the anxiety because most people enjoy listening to music that is self-selected (McClurkin and Smith 2016). It increases the positive effect of relaxation that will induce significant deviation in the physiologic indices. Physical changes are important to consider by the nurse in the preoperative care to check for discordance. Several patients may mistakenly assess themselves that has no preoperative anxiety but the biomarkers of stress effect such as systolic and diastolic blood pressure, heart rate and blood oxygenation and serum cortisol are in surge (McClurkin and Smith 2016), (Kipnis 2016).

The second search question asked for the factors that would support the integration of music therapy as an intervention that can be include to the nursing plan to reduce preoperative anxiety for patient candidate for cardiac procedure. The nurse assumes various roles to identify the needs of the patient, guiding and educating the patient to consensus consent before implementing an intervention (Peplau 1991). The nurse strives to know and

identify the needs of the patient and at the same time knowledgeable to the effect of the intervention that is planning to administer to reach the therapeutic goals. The nurse considers the demographic factor of the patient before an intervention as it may fail the desired effect if there is contradiction. Music therapy found out that the positive effect to anxiety bears no relation to the age, gender or sexual orientation of a patient, thus making the intervention feasible to all.

The expected results of music therapy are in favor in lighten up the loads of nurses but also to the burden in the well-being of the patients. Despite heterogeneous reactions to non-pharmacological approach, music therapy still gains popularity because of its effectiveness, easiness to handle, invasiveness and affordability (Uğras et al. 2018). The nurse carefully considers the time and effect of music to the anxiety of patient. Waiting time for every patient may varies before the procedure but the expected therapeutic effect of music therapy already felt between 10 to 30 minutes of a single intervention (McClurkin and Smith 2016), (Amiri et al. 2017), (Lee et al. 2012), (Guëtin et al. 2016) of classical music, no lyrics and has 60-80 beats per minute (McClurkin and Smith).

The nurse-patient relationship is the center of the interpersonal relationship of Peplau. Achieving the exploitation phase of Peplau (1991) the patient needs to express confidence and trust to the nurse. The patient learns to use the available services and work with the nurse interdependently. While, the nurse uses different types of communication and support in any possible means to achieve the final phase. Finding the right method to communicate to the patient's emotion can be challenging (Ghetti and Seton 2013). However, a well-organized communication of a nurse to the patient can help the patient distract their anxiousness and may encourage them to self-report their anxiety. Verbal interactions and maintaining a positive facial expression (Ghetti and Seton 2013) during the encounter relate to the relieving of stress and enhance the establishment of rapport and mutual understanding to aim one goal. Working interdependently with music intervention, which known to promote anxiety-reduction and eventually regaining autonomy, which is means that the resolution phase of Peplau (1991) is now achieved and the nurse-patient relationship can be terminated.

The nurse and the patient are two different entity with different character but learned to work interdependently to reach one goal which to alleviate the anxiety felt by the patient before a cardiac procedure. A well carried out communication can bring out a good rapport that intensifies the nurse-patient relationship leading to an easy implementation of interventions

and obtaining the desired outcome. Finally, it recommended the implementation of music therapy services in both in- and out-patients that demonstrate high level of distress, anxiety and negative affects before to a cardiac procedure (Ghetti and Seton 2013). The consideration of giving an early administration of music such as a night before the surgery regards as an intervention to reduce preoperative anxiety (Amiri and et al. 2017). Studies positively claim the positive effect of music after administration, however the duration of that effect remain unclear, therefore it recommended this topic for future research.

7.1 Critical Review

A critical review of a research study includes an in-depth appraisal of the researcher's conceptual and methodologic decisions. Critiquing is an objective determination of the strengths and limitations of one's research based on the merit of the study, recommendations according to the evidence value, and study improvement suggestions. A critique subjected to inform an evidence-based nursing practice, focuses in assessing whether the study is accurate, believable and clinically relevant not on the slight grammatical errors committed (Polit and Beck 2018). Researchers doing a critical review are constantly having an ethical, practical, and methodological challenge. The value of the study's evidence depends to the capability of the researcher to handle these challenges. Clear insights on terms and concepts are significant prerequisite before engaging in a review. Inference refers to the conclusion drawn from the evidence literature by the researcher (Polit and Beck 2018).

The major focus of reviewing a qualitative analysis is to determine whether the researcher sufficiently documented the analytical process. Providing the information about the approach used to analyze the data. The researchers should documented the usage of one approach throughout the whole study and was able to uphold the integrity of its procedure (Polit and Beck 2018). The author implemented the qualitative data analysis from a randomized controlled trial in this study. The method of data extraction is guided by the editing style analysis and deductive approach in developing the themes and categories. The author's main reason for choosing editing style analysis of qualitative analysis and deductive approach are due to the limited amount of time of analyzation and the restricted knowledge of the author in the interpretation of a quantitative data result.

The author followed the method of qualitative review and upheld the credibility of the study by complying with a truthful and accurate search method. Articles are taken from scientific

databases that ensures peer reviewed resources. The author implement the triangulation process, which means having multiple resources before drawing the inference in the conclusion. The author acquired seven evidence literature after following the PRISMA flowchart of exclusion and inclusion method. The author read the seven articles and highlighted the ideas from the results and discussion part of the articles following the editing style analysis. The deductive approach are used to group the ideas into categories and themes following the interpersonal theory of Peplau (1991). The author carefully rephrased the ideas in the documentation of the inference but maintaining the main essence and avoiding distortion of ideas that threaten the validity of the inference. The researcher uphold the validity of the inference by putting the name/s of the author/s in the running text and bibliographic reference.

Evaluating a qualitative analysis is difficult even for an expert. Problems lies with the lack of access of the reader to the evidences articles used in the study. Weighing if the researcher executed the methods of coding, thematic analysis, and integrating summarized information into a whole with a good judgement and critical in sights is a challenge. Materials used in the study is not often included in the appendices of the new research study, thus describing and illustrating the process the researcher used in the induction of abstract meaning from the data cannot be assessed (Polit and Beck 2010).

8 Conclusion

The data acquired from the seven articles identified the significant effect of music intervention in the alleviation of anxiety in a patient undergoing a cardiac procedure. Enumerated the benefit of music integration as one form of nursing intervention in nursing care. Findings shows music therapy has a positive effect in alleviating the preoperative anxiety of a patient before a cardiac procedure. The desired outcome has correlation to the patient's culture, past experience, preference and physiologic effect.

The nurse as the giver of music intervention guided by knowledge and expectations about the procedure that the intervention will help the patient to overcome anxiety. Demographic information, time and expectations analyzed prior to the intervention to yield a desired outcome. Communication promotes rapport between the nurse and patient, which then builds the nurse-patient relationship. Peplau (1991) mentions that nurses should have skills in communicating with their patient to acquire the true emotions felt by the patient.

For anxious patient, they may have difficulty in expressing themselves and busy nurses may fail to assess and react to a situation unknown to them leaving the nursing care to depend solely with pharmacological treatment of physical health. This study shares contribution to enhance the quality of care rendered in a healthcare through recommendation of non-pharmacological intervention such as music therapy as a supplement to the treatment of preoperative anxiety. Music therapy is easy to administer, not selective of patient, not invasive, and have positive effect in the alleviation of preoperative anxiety, thus helps preventing complications and prolonged healing and recovery.

9 References

- Academy of Finland. (2015). Music can help you recover from stroke and memory disorders <http://www.aka.fi/en/about-us/media/press-releases/2015/music-can-help-you-recover-from-stroke-and-memory-disorders/> (retrieved 2.10.2018).
- American Music Therapy Association (2017) What is Music Therapy? <https://www.musictherapy.org/about/musictherapy/> (retrieved: 21.5.2017).
- Amiri, M.J., Sadeghi, T. & Bonabi, T. N. (2017) The effect of natural sounds on the anxiety of patients undergoing coronary artery bypass graft surgery. *Perioperative Medicine* 6 (17).
- Bailey, L. (2010) Strategies for Decreasing Patient Anxiety in the Perioperative Setting. *AORN Journal* 92 (4), 445.
- Beccaloni, A. (2011). The Medicine of Music: A Systematic Approach for Adoption Into Perianesthesia Practice. *American Society of PeriAnesthesia Nurses* 26 (5), 323-330.
- Bradt, J., Dileo, C. & Shim, M. (2013). Music interventions for preoperative anxiety. *The Cochrane database of systematic reviews*, 6, 1-2.
- Bojar, R.M. (2010) *Manual of Perioperative Care in Adult Cardiac Surgery*. John Wiley & Sons Incorporated.
- Bonny, H. & Savary, L.M. (2005) *Music and Your Mind: Listening with a New Consciousness*. Barcelona: Barcelona Publishers.
- Castoro, C., Bertinato, L., Baccaglioni, U., Drace, C. & McKee, M. (2007) European Observatory on Health Systems and Policies Policy Brief Day Surgery: making it happen http://www.euro.who.int/__data/assets/pdf_file/0011/108965/E90295.pdf (retrieved 26.10.2018)
- Current Nursing (2012) Nursing theories http://currentnursing.com/nursing_theory/interpersonal_theory.html (retrieved: 30.11.2018).
- Darnley-Smith, R. & Patey, H. (2008) *Music Therapy*. SAGE Publications.
- Davis-Evans, C. (2013) Alleviating Anxiety and Preventing Panic Attacks in the Surgical Patient. *AORN Journal* 97 (3), 354-360.
- DiTomasso, R.A. (2006) *Comparative Treatment Series - Anxiety Disorders: A Practitioner's Guide to Comparative Treatments*, New York: Springer Publishing Company.

- Erkilic, E., Kesimci, E., Soykut, C., Doger, C., Gumus, T. & Kanbak, O. (2017) Factors associated with preoperative anxiety levels of Turkish surgical patients: from a single center in Ankara. *Patient Preference and Adherence* 11, 291-296.
- Finnish Advisory Board on Research Integrity (2012) Responsible conduct of research and procedures for handling allegations of misconduct in Finland http://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf (retrieved : 23.5.2017).
- Gauthier, P. A. (1993). Music therapy. *The Canadian nurse*, 89(2), 46.
- George, J. (2011) *Nursing Theories: The Base for Professional Nursing Practice*. (6th ed.) U.S.A.: Pearson Education.
- Gheissari, A., Barlow, D.H., Craske, M.G., & Zinbarg, R.E. (2006) *Mastery of Your Anxiety and Worry: Therapist Guide*, USA: Oxford University Press.
- Ghetti., C. & Seton, E. (2013) Effect of Music Therapy with Emotional-Approach Coping Preprocedural Anxiety in Cardiac Catheterization: A Randomized Control Trial. *Journal of Music Therapy* 50 (2), 93-122.
- Gray, J., Grove, S. & Sutherland, S. (2017) *The Practice of Nursing Research Appraisal, Synthesis, and Generation Evidence*. (8th ed.) Missouri: Elsevier, Inc.
- Guétin, S., Deniaud, M., Clerc, J.M., Thayer, J. & Koenig, J. (2016) Smartphone-based Music listening to Reduce Pain and Anxiety Before Coronarography: A focus on Sex Differences. *Alternative Therapies* 22 (4), 60-63.
- Habibi, A. & Damasio, A. (2014) Music, Feelings, and the Human Brain. *Psychomusicology: Music, Mind, and Brain* 24 (1), 92-102.
- Horwitz, A. (2013) *Anxiety: A short history*: Johns Hopkins University Press
ProQuest Ebook Central
- Institute for Quality and Efficiency in Health Care (2018) What can help relieve anxiety before surgery? <https://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0072741/> retrieved 21.6.18
- Jayakar, J.P. & Alter, D.A. (2017). Music for anxiety in patients undergoing cardiac catheterization: A systematic review and meta-analysis of randomized controlled trials. *Complementary Therapies in Clinical Practice* 28 (2017), 122-130.
- Jecklin-Sand, K. & Emerson, H. (2010). The Impact of a Live Therapeutic Music Intervention on patient's Experience of Pain, Anxiety, and Muscle Tension. *Holistic Nursing Practice* 24 (1), 7-15.
- Johnson, B., Raymond, S. & Goss, J. (2012). Perioperative Music or Headsets to Decrease Anxiety. *American Society of PeriAnesthesia Nurses* 27 (3), 146-154

- Kamioka, H., Tsutani, K., Yamada, M., Park, H., Okuizumi, H., Tsuruoka, K., Honda, T., Okada, S., Park, S., Kitayuguchi, J., Abe, T., Handa, S., Oshio, T. & Mutoh, Y. (2014) "Effectiveness of Music Therapy: A Summary of Systematic Reviews Based on Randomized Controlled Trials of Music Interventions." *Patient preference and adherence* 8, pp 727–754.
- Kemper, K. & Danhauer, S. (2005). Music Therapy. *Southern Medical Journal*, 98(3), 282-288.
- Kipnis, G., Tabak, N. & Koton, S. (2016) Background Music Playback in the Preoperative Setting: Does it Reduce the Level of Preoperative Anxiety Among Candidates for Elective Surgery. *American Society of PeriAnesthesia Nurses* 31 (3), 209-216.
- Knaus, W.J. (2014) *The Cognitive Behavioral Workbook for Anxiety: A Step-By-Step Program*, Oakland: New Harbinger Publications.
- Kühlmann, A. Y. R., de Rooij, A., Kroese, L. F., vanDijk, M., Hunink M. G. M. & Jeekel, J. (2018) Meta-analysis evaluating music interventions for anxiety and pain in surgery. *British Journal of Surgery* 105 (7), pp 773-783.
- Lee, K.C., Chao, Y.H., Yiin, J.J., Hsieh, H.Y., Dai, W.J. & Chao, Y.F. (2012) Evidence That Music Listening Reduces Preoperative Patients' Anxiety. *Biological Research for Nursing* 14 (1), 78-84.
- Lisy, K. (2014). CNCF podcast: music interventions for preoperative anxiety. *International Journal of Nursing Practice* 20, 686.
- McClurkin, S. & Smith, C. (2016) The Duration of Self-Selected Music Needed to Reduce Preoperative Anxiety. *American Society of PeriAnesthesia Nurses* 31 (3), 196-208.
- Ni, C.H., Tsai, W.H., Lee, L.M., Kao, C.C. & Chen, Y.C. (2012) Minimizing preoperative anxiety with music for day surgery patients - a randomized clinical trial. *Journal of Clinical Nursing* 21 (5-6), p 620-625.
- Nilsson, U. (2008) The Anxiety- and Pain-Reducing Effects of Music Interventions: A Systematic Review. *AORN Journal*, 87 (4).
- Ogg, M.J. (2015) Integrating a music program into the perioperative setting. *AORN Journal* 102 (2), 203-204.
- Peplau, H.E. (1991) *Interpersonal Relations in Nursing: A Conceptual Frame of Reference for Psychodynamic Nursing*. New York: Springer Publishing Company.
- Polit, D. & Beck, C.T. (2010). *Essentials of Nursing Research: Appraising Evidence for Nursing Practice*. (7th ed.) China: Wolters Kluwer.

- Polit, D. & Beck, C.T. (2017). *Nursing Research Generating and Assessing Evidence for Nursing Practice*. (10th ed.) China: Wolters Kluwer
- Prakash, R. (w.y.) Passive and Active Music Therapy. Duke University <https://sites.duke.edu/voicestogether/series-the-potential-power-of-music-therapy-within-the-autism-community/passive-and-active-music-therapy/> (retrieved 9.6.2018).
- Pritchard M.J. (2009) Identifying and assessing anxiety in pre-operative patients. *Nursing Standard* 23 (51), 35-40
- Saarela-Kangas, T. & Mattila, K. (2009) IAAS Country Report on Day Surgery: Finland. *Ambulatory Surgery* 15(1), 15.
- Stanton, C. (2015). Complementary care interventions. *AORN Journal* 101 (4), 7-9.
- Takagi, H., Ando, T., Umemoto, T. & ALICE (All-Literature Investigation of Cardiovascular Evidence) Group (2017) Perioperative depression or anxiety and postoperative mortality in cardiac surgery: a systematic review and meta-analysis. *Springer Japan Heart and Vessels* 32 (12), pp 1458-1468.
- The historical background & professional context of arts therapies in Finland (2016) European Consortium ARTE. <http://www.ecarte.info/membership/directory/finland.htm> (retrieved: 21.5.2017).
- Tompkins, M.A. (2013), *Anxiety and Avoidance: A Universal Treatment for Anxiety, Panic, and Fear*. Oakland CA: New Harbinger Publications.
- Trappe, H. (2012). Music and medicine: The effects of music on the human being. *Applied Cardiopulmonary Pathophysiology*, 16(2),133-142.
- Trappe, H.J. (2017) Music and heart. *Der Kardiologe* 11(6), 486-496
- Twiss, E., Seaver, J. & McCaffrey, R. (2006) The effect of music listening on older adults undergoing cardiovascular surgery. *Wiley Online Library* 11 (5), pp 224-231.
- Uğras, G.A., Yildirim, G., Yüksel, S., Öztürkçü, Y., Kuzdere, M. & Öztekin, S.D. (2018) The effect of different types of music on patients' preoperative anxiety: A randomized controlled trial. *Complementary Therapies on Clinical Practice* 31 (2018), 158-163.
- van der Heijden, M., Araghi, S.O., van Dijk, J.J. & Hunink, M. (2015). The Effects of Preoperative Music Interventions in Pediatric Surgery: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Plos One* 10 (8), 1-11.
- Vaughn, F., Wichowski, H. & Bosworth, G. (2007) Does Preoperative Anxiety Level Predict Postoperative Pain? *AORN Journal The Official Voice of Perioperative Nursing* 85 (3), 589-604.

- Vetter, D., Barth, J., Uyulmaz, S., Uyulmaz, S., Volanthen, R., Belli, G., Montorsi, M., Bismuth, H., Witt, C. & Clavien, P.A. (2015). Effects of art on surgical patients: a systematic review and meta-analysis. *Annals of Surgery* 262(5), 704-713.
- Videbeck, S. (2011) *Psychiatric Mental Health Nursing* (5th ed.) China: Wolters Kluwer Health Lippincott Williams & Wilkins. P226-229
- Wakim, J., Smith, S. & Guinn, C. (2010). The Efficacy of Music Therapy. *American Society of PeriAnesthesia Nurses* 25 (4), 226-232.
- Zurynski, Y. (2014) Writing a Systematic Literature Review: Resources for Students and Trainees. APSU. <http://www.apsu.org.au/assets/Resources/Writing-a-Systematic-Literature-Review.pdf> (retrieved: 23.5.2017).

Appendix 1

Name	Article	Year	Aim	Method	Result
Amiri, M.J., Sadeghi, T. & Bonabi, T. N.	The effect of natural sounds on the anxiety of patients undergoing coronary artery bypass graft surgery	2017		A randomized control trials. Participants selected randomly and assigned in a control with no music or experimental group where natural sounds were played. Spielberger State- Trait Anxiety Inventory is used before and after intervention, and before surgery in the waiting room area.	Natural sounds can significantly reduce the level of preoperative anxiety to patient as supported by the lower mean anxiety level of the intervention group compare to the control group.
Ghetti., C. & Seton, E.	Music Therapy with Emotional-Approach Coping Preprocedural Anxiety in Cardiac Catheterization: A Randomized Control Trial	2013	The objective of this study is to assess the use of music therapy emphasizing the emotional-approach coping just prior to the catheterization to impact periprocedural outcomes.	A randomized control trials. Participants are randomly selected three groups. Music therapy with Emotional-Approach Coping group (MT/EAC), a talk-based approach Emotional-approach Coping group and a control group. The results are compared after.	A randomized control trials. Participants are randomly selected three groups. Music therapy with Emotional-Approach Coping group (MT/EAC), a talk-based approach Emotional-approach Coping group and a control group. The results are compared after.

Guétin, S., Deniaud, M., Clerc, J.M., Thayer, J. & Koenig, J.	Smartphone-based Music listening to Reduce Pain and Anxiety Before Coronarography: A focus on Sex Differences	2016	The goal of the study is to assess the application to use for patient undergoing a coronarography.	A randomized control trials. Participants listened to music of their choice. Before and after listening, participants rate their anxiety from 0-11 item, visual analogue scale and questionnaire .	Both men and women participants showed significant reduction in anxiety. High level of satisfaction was reported.
Kipnis, G., Tabak, N. & Koton, S.	Background Music Playback in the Preoperative Setting: Does it Reduce the Level of Preoperative Anxiety Among	2016	The goal of the study is to assess the effectiveness of background music to the anxiety of patient and the level of noise in the waiting room.	A randomized control trial. Participants assigned into control and intervention group. Data is collected using State-Trait Anxiety Inventory Scale and vital signs	Background music significantly reduce the level of preoperative anxiety and related to the reduction of the environmental noise in the surgery waiting room.
McClurkin, S. & Smith, C.	The Duration of Self-Selected Music Needed to Reduce Preoperative Anxiety	2016	The purpose of this study is to evaluate the effect of music related to the duration of music listening.	A randomized control trials. Quantitative method. Participants are assigned into 15-minute and 30-minute music test group and no music group. After the intervention the three groups are compared.	Both the two-intervention group showed significant reduction of preoperative anxiety compare to the control group. Music listening for at least 15-minutes before surgery can decrease the level of anxiety.

Uğras, G.A., Yildirim, G., Yüksel, S., Öztürkçü, Y., Kuzdere, M. & Öztekin, S.D.	The effect of different types of music on patients' preoperative anxiety: A randomized controlled trial.	2018	The goal of the study is to evaluate the effect of the three kinds of music to the preoperative anxiety of the patient.	A randomized control trials. Participants are randomly assigned into one control group and three experimental groups. After 30-minutes of intervention, the STAI-S, SBP, DBP, HR and cortisol levels are checked.	All types of music significantly reduce the preoperative anxiety of patients as evidenced by the decreased STAI-S, SBP, DBP, HR and cortisol levels compare to the pre-intervention results.
Lee, K.C., Chao, Y.H., Yiin, J.J., Hsieh, H.Y., Dai, W.J. & Chao, Y.F.	Evidence That Music Listening Reduces Preoperative Patients' Anxiety	2012	The purpose of the study is to evaluate the feasibility of using the heart rate variability (HRV) in evaluating the accuracy preoperative reduction in the waiting room. Another aim is to compare the HRV measures with the scores of the Visual Analogue Scale (VAS).	A randomized control trials. Participants are randomly chosen to a control and intervention group. Music is delivered through headphones for 10-minutes. VAS is checked before and after the intervention.	Music listening can significantly lower the preoperative anxiety level of patient as showed by the reduction of the VAS anxiety scores, mean HR and low frequency HRV.