

Effects of Music Therapy in Intensive Care Patients

ALVES, Ana Isabel¹; RABIAIS, Isabel Cristina²; PESTANA, Laurindo³; RODRIGUES, Miguel⁴; ÁVILA, Hugo⁵; CÂMARA, Rosália⁶; VIRÍSSIMO, Michelle⁷ & FAIA, Isabel⁸

Abstract

Introduction: The practice of music therapy to improve physical and mental welfare is used since ancient times. This reaction becomes a valued instrument in taking care of patients, in hospital environments, becoming decisive in Intensive Care Units. **Objective:** The aim of this study is to clarify the importance of music therapy in intensive care patients. **Material and Methods:** A systematic review of the literature by mobilizing the descriptors "Music Therapy", "Critical Patients" and "Nursing care", use the method peak. We have selected ten databases imaginable, in-between 2011 and 2016, included for analysis nine articles. **Results and Discussion:** It was found that most of studies consider music therapy effective on clients by decreasing pain, anxiety, regulating blood pressure, cardiac and respiratory frequencies. It also allows to lower sedation and analgesic levels, in patients. The key to implement this therapy is to educate the health teams about the impact and benefits of music therapy in patients. **Conclusion:** It can be concluded that music therapy can be used like a non-pharmacologic therapeutic instrument to improve relaxing and reduce anxiety in clients in intensive care, promoting their recuperation

Keywords: Music Therapy, Critical Patients, Nursing Care.

1. Introduction

The practice of music therapy to improve physical and mental welfare is used since ancient times. Its first application as a form of humanization of the care in health was described in 1859, by Florence Nightingale, being used in the care of the soldiers of the first and Second World War (Leining, 1997). It was from the decade of forty, of the 20th century, that scientific studies first references music as a therapeutic resource, in Europe and United States. The observation of the effects of music between the convalescents, mostly of the Second World War conducted to a huge contribution to that research (O'Kelly and Koffman, 2012).

¹ Master of Science in Food Consumption, Licensed Nursing, Specialist in Medical-Surgical Nursing, functions in the Intensive Care Unit of Hospital Dr. Nélio Mendonça, e-mail: anaigalves@gmail.com, 00351966638157.

² PhD in Nursing Skill Education in Nursing, Specialist in Medical-Surgical Nursing, Professor at the Catholic University of Portugal, e-mail: raby@ics.lisboa.ucp.pt, 00351919451113.

³ Licensed Nursing, Specialist in Medical-Surgical Nursing, functions in the Intensive Care Unit of Hospital Dr. Nélio Mendonça, e-mail: laurindopestana@gmail.com, 00351965767856

⁴ Licensed Nursing, Specialist in Medical-Surgical Nursing, functions in the Intensive Care Unit of Hospital Dr. Nélio Mendonça, e-mail: lmiguelcrodrigues@gmail.com, 00351962981560

⁵ Licensed Nursing, functions in the Intensive Care Unit of Hospital Dr. Nélio Mendonça, e-mail: hugobavila@gmail.com, 00351964615769

⁶ Licensed Nursing, functions in the Intensive Care Unit of Hospital Dr. Nélio Mendonça, e-mail: rosaliapxo@hotmail.com, 00351935633983

⁷ Licensed Nursing, Specialist in Medical-Surgical Nursing, functions in the Intensive Care Unit of Hospital Dr. Nélio Mendonça, e-mail: michellesousa@hotmail.com, 00351963954803

⁸ Isabel F Licensed Nursing, Specialist in Medical-Surgical Nursing, functions in the Intensive Care Unit of Hospital Dr. Nélio Mendonça

This observation had so positive results that the American authorities decided to educate people on a professional level. Its main objective is to offer a more human form of hospitalization, making better interaction between patients, health team and family members. The first course of music therapy was created in 1944, in the Michigan State University.

Since the last decades of the 20th there was an increase of scientific studies about the effects of music therapy that allowed the scientific community to understand its effects in the human body and mind. They confirmed what most scientists knew: the power of music in highlighting emotions, promoting physical and mental relaxation, promoting positive feelings and remembering happy and sad moments (Leining, 1997).

Scholars agree that the many of therapeutic possibilities of music melody are due to its influence in the living process of the human being. It was born from their mind and emotions what gives it the power to attain changes in them (Arruda, 2005). This phenomenon happens due to the liberation of chemical cerebral substances that regulates humor, reduces aggressiveness and depression (Giannotti and Pizzoli, 2004). This chemical reaction is a valuable finding for the healthcare of patients in hospital environment, especially in Intensive Care Units (ICU), where normally patients develop stress and anxiety sensations due to the high complexity environment (Backes, 2003) and surrounded with imaginary ideas of life ending thoughts when they have to deal with difficult and unknown situations (Leão et al., 2010; Souza and Marcheti, 2006). In this environment the music is able to influence and transform the context, the behavior and the feelings of the individuals (Backes, 2003).

Although the selective use, music therapy is a simple practice without unwanted collateral effects in the physiologic, psychologic and emotional dimensions that influences the patients during the treatment of the most variables pathologies, reducing considerably anguish and anxiety in Intensive Care (IC) contexts (Souza and Marcheti, 2006).

In Nursing, music is used like a complementary intervention in the relief of pain and other symptoms, for example, spiritual anguish; sleep disturbance, desperation, loneliness, social isolation and stress (Leão et al., 2010). The change in sleep patterns is common in patients in ICU and can lead to physiologic e psychologicdys functions that can lead to increase mobility and mortality (Alves, Rabiais and Nascimento, 2015).

Silva et al. (2010) and Knobel et al. (2006), advocate that the humanization of HealthCare in IC can be guaranteed in various ways by dealing with the patients interfaces, talking to the patients and family explaining the procedures, knowing how to work with the family, respecting there values, and beliefs, promoting visit time facilitations (Hudak, 1997; Oliveira and Bianchini, 2010) and involving the family in the care. Using music that the patient doesn't like or causes irritability can prejudice the treatment. Using specific music for a specific cause is crucial (Gonçalez et al., 2008) to establish contact without any specific verbal communication.

2. Material and Methods

A systematic review of the literature is one of the methods of research used in the practice of evidence-based and its purpose is to gather and summarize results of research on a given topic in a systematic and orderly manner, contributing to the knowledge of the theme (Mendes and Fracoli, 2008; Benefield, 2003). The method used was based on PICO strategy (acronym for patient, intervention, comparison and outcomes). This way it maximizes the inclusion of relevant information in different databases, focusing on the research object and avoiding unnecessary lookups (Santos, Pimenta and Nobre, 2007). Observing with rigor all steps required in the use of this method, the time interval between March and July of 2016, a protocol was developed for the identification of studies of interest to this work and that consisted of a search in the search engines: Ebsco and B-ONline, and on the following databases:

CINAHL Plus, PubMed/ MEDLINE, LILACS, Scielo, Web of Science, Science Direct, Cengage Learning, Academia Search Complete, Psychology and Behavioral Sciences Collection, John Wiley & Sons, Sport Discus, The Joanna Briggs Institute, U.S. National Library of Medicine, Directory of Open Access Journals, Springer Science & Business Media and Repository of Scientific Open Access of Portugal.

For the identification of relevant studies a search strategy was used, using the following descriptors *Music Therapy AND Critical Patients AND Nursing Care*. After meeting all these protocol assumptions, some articles, that did not meet the requirements, were phased out, developing methodically a reductive process.

3. Results

It was selected for the study nine articles that follow in Table 1.

Table 1: Description of selected studies and main results of investigations

Study	Author(s)/ Year	Main Results
S1: "Music as Medicine: The Therapeutic Potential of Music for Acute Stroke Patients"	Charlene Supnet, April Crow, Sonja Stutzman and Dai Wai Olson; 2016.	<ul style="list-style-type: none"> -This study revealed that 89% of the patients submitted to an abdominal surgery referred, in the post operation, that the sensation/intensity of pain and discomfort reduced when using music therapy, compared with the group control of patients that wasn't submitted to music therapy. -Studies that used music in patients with myocardial infarction showed systematically that music induced reduction in anxiety effects in 5.87 units, in a scale of 20 to 80 units. -They analyzed the effect of uninterrupted 20 minute music, versus uninterrupted 20 minute rest in orotracheal intubated patients. The music therapy reduced significantly cardiac frequencies and systolic blood pressure in the orotracheal intubated patients compared with the ones who had the rest. -Concluded that the use of music therapy reduced the agitation in the post operation period and reduced the dosages of drugs.
S2: "Patient-directed music therapy reduces anxiety and sedation exposure in mechanically-ventilated patients: a research critique"	Gullick JG and Kwan XX; 2015.	<ul style="list-style-type: none"> -This study was applied to 373 patients mechanically ventilated (but conscious) in five ICU of America. To one group they provided absence of sound and to the other group music therapy. Posteriorly they evaluated anxiety and need of sedation, based on a specific scale. -The results suggest that both groups revealed a global improvement in anxiety and needs of lower sedation. -However the study emphasizes the results of the use of music therapy and using the headphones for the absence of significant sound cannot be used on sedated or cognitive impairment patients.
S3: "The Effect of Music Therapy on the Vital Signs of Patients in a Surgical Intensive Care Unit"	Seyhan Çıtlık Sarıtaş and Bilsev Araç; 2015.	<ul style="list-style-type: none"> -The study analyzed the effects of music therapy in the vital signs of patients in a surgery ICU. -They checked that the patients revealed lower cardiac frequencies and systolic and diastolic blood pressure after the use of music therapy. -They also evaluated that patients with low peripheral oxygen saturation, after being submitted to music therapy saw this parameter go to normal range. -The results show that music is an effective therapy in patients in IC.
S4: "The Effect of Music on Comfort, Anxiety and Pain in the Intensive Care Unit: A Case in Turkey"	Hatice Çiftçi and Gürsel Öztunc; 2015.	<ul style="list-style-type: none"> -The study revealed that the systolic blood pressure and the anxiety levels decreased considerably with music therapy, according to the punctuation given through the anxiety scale faces. -The music is a therapy that contributes for the patient's comfort, by defusing pain and anxiety, in the ICU.

		-Although it wasn't possible to verify the relationship between the music therapy and the overall comfort and the normal range of PO2.
S5: "The Role of Music to Promote Relaxation in Intensive Care Unit Patients"	Polyxeni Mangoulia and Aikaterini Ouzounidou; 2013.	-The investigation showed that music can influence several physiologic and physiologic effects; it's effective in reducing stress and in facilitating relaxation responses. -They applied different types of music according to the patient's preferences, having different effects. -This investigation also revealed that music therapy enables a lower anxiety, depression and pain perception, enabling a more effective relaxing, in patients. -Can be seen as a no pharmacological, safe and cheap intervention for relaxation effectiveness and in stress reduction in ICU patients. The key for the implementation of music therapy is in educating health professionals about the importance of this therapy and its impact on the patient's outcomes.
S6: "The Effect of Live Spontaneous Harp Music on Patients in the Intensive Care Unit"	Ann Marie Chiasson, Ann Linda Baldwin, Carrol McLaughlin, Paula and Cook and GulshanSethi; 2013	-This study reveals that harp live melody during 10 minutes reduces significantly the patient's pain perception in 27% of the cases in ICU. -In the meantime, it didn't affect significantly the cardiac, respiratory or peripheral oxygen saturation ranges. -Enhances that each patient was differently affected with different degrees of excitement and relaxation due to the live musicality produced by the harp. It generates several stimuli to each patient.
S7: " Effects of Patient-Directed Music Intervention on Anxiety and Sedative Exposure in Critically Ill Patients Receiving Mechanical Ventilatory Support A RandomizedClinical Trial	Linda L. Chlan, Craig R. Weinert, Annie Heiderscheit, Mary Fran Tracy, Debra J. Skaar, Jill L. Guttormson and Kay Savik; 2013	-In this study there we reanalyzed 2 groups: one of them where submitted to music therapy and the other one no. Revealed that the patients of the group with music therapy showed an anxiety score 19.5 points lower, compared with the other group. -Until the 5th day of the study, it was possible to check that the group submitted to music therapy besides a lower anxiety levels also showed a reduction in hospitalization and sedation needs. -The group of patients in music therapy required less 38% sedating doses as well as 36% lower level of intensity sedation.
S8: "Music Therapy for Reducing Anxiety in Critically Ill Patients"	Elie Azoulay, MD.; Marine Chaize.; Nancy Kentish-Barnes, 2013	-This study was applied to 373 patients of 12 ICU of 5 hospitals and brings out that anon pharmacological intervention like listening to music with headphones can reduce anxiety and sedation administration. -This intervention is simples to use, low cost and has no collateral effects. It revealed, after tested, several benefits in critical ill patients compared with the application of headphones that annulled the environmental noise.
S9: " The effect of music therapy on pain and anxiety in intensive care patients"	Uyar M and Akın Korhan E.; 2011	-This investigation analyzed the use of music therapy and its effects in patients in ICU. -It concluded that there's a direct relationship between music therapy and decreased anxiety in patients in IC. -This therapy allows decreasing pain and anxiety intensity in critical ill patients. For that, it's fundamental its use in this type of patients.

4. Discussion of Results

The studies found about music therapy that it's a form of expression inherent to the human being, sensitive to emotions and affection sharing, as the interaction it enables, strengthens human relations, increasing empathy and pleasure in that relation.

Although the physiological bases of music therapy, are not yet well known, it's recognisable that it increases life quality, influencing some health variables, as cardiac and cerebral vascular system related, facts that total or partially are corroborated by every study of this investigation (Souza, 2004; Araújo and Silva, 2013; Areias, 2016). It becomes clear that music has a transformation roll and is capable of creating different psychological or physic states in the human being, these data come across the referenced findings in this investigation. It's a form of emotions and feelings expression in many different fields as social, economic, environmental and religious ones. The therapy trough music uses an artistic language in the therapeutic process, also being able to be used as an aesthetic and healthy experience for the human being, in search of the positive effects in relaxation sessions, as it can be evidenced in every study present in this investigation (Souza, 2004; Araújo and Silva, 2013; Areias, 2016).

One of the interesting aspects of music therapy consists in evaluating its utility in pharmacotherapy decreasing (Almerud and Petersson, 2003; Areias, 2016). Considering studies S1, S2, S7 e S8 through music therapy it was possible to reduce the sedation dosage, and in S1 it was also possible to reduce opioids dosage. Even though it was not always possible to be unanimous on the mechanism through, which music contributes to pain relieving and its control, it's known that pain receptors send signals to the brain, making somehow possible that music blocks the pain perception by acting on pain transmitters (Almerud and Petersson, 2003; Souza, 2004; Araújo and Silva, 2013; Areias, 2016), and these facts were evidenced in every study analysed.

Music therapy decreases significantly the anxiety level in before and after surgical intervention care as highlighted in studies S1 and S3, sometimes with higher efficiency level than some prescription drugs. Nevertheless the anxiety and stress level reduction in the ICU achieved by music therapy (Souza, 2004; Areias, 2016), was observed throughout every analysed study. The efficiency of music therapy has been described mostly when classical or other relaxing music is chosen (Areias, 2016). Trappe (2010), a German cardiologist, studied the effect of music in an ICU, and concluded that the music known as meditation like, shown sedative effects, while "Heavy Metal" and "Techno" were found to be dangerous in an ICU, for the increasing of stress and aggressive behaviour. Curiously, "Jazz" increased focus in patients, furthermore "Hip Hop" and "Rap" revealed to be beneficial not by its melody, but by its rhythm and word effect.

These aspects are consistent with the findings in studies S5, in which is mentioned that different melodies can have specific reactions, and with study S6 in which live harp music was played with the intent of enabling and verifying its relaxing effects. Studies as S1, S3 and S4, suggest that this type of music has cardiovascular system effects, influencing heart rate and its variability, as well as blood pressure value (Almerud and Petersson, 2003; Areias, 2016). However study S6 revealed no significant changing in the hemodynamic response in patients who heard live harp music played for 10'.

Puggina (2006) was able to obtain improvements in O2 saturation levels, as well as in respiratory rate in ventilated patients after one music therapy session, as mentioned in study S3. On the other hand, these data are opposite to the data revealed by studies S4 and S6, in which there was no improvement in the referred levels after the music session. It is important to mention that in study S8 the reduction of the anxiety levels and the sedation needed happen bought in patients who experienced music therapy and in those who was applied environment noise cancel headphones.

Some studies, S3, S5, S8 and S9, also state that music therapy is a simple intervention, low cost, easy to use and with no known side effects, that for its proven benefits should be implemented in more hospital units. They also advocate that the key to its field implementation is through health care professional's education/training about the relevant aspects of music therapy. Due to brain plasticity music is a powerful therapeutic tool, involving low cost and low risk, with undoubtedly positive memory, attention, motor functions and emotional effects (Areias, 2016).

5. Conclusion

After analysing the studies mentioned, it was possible to recognize that music therapy as a non-invasive therapy that in most studies was proven to significantly intervene in patient's evolution, illustrating a more humanized care, distinguishing itself from the use of drugs and technologies which characterize the ICU threatening environment.

Music is a big ally in the nursing care humanization, as a result of the findings exposed earlier in this article, which validated that music therapy effects go further than patient's emotional aspects, interfering directly in physiological functions, and contributing to affective relationship between patients and their family during the internment, as well as it improves the healthy aspects of this relationship. In this context music therapy contributes to an environment routine sense change and to the improvement of patient's self-esteem, families and health professional's team.

Throughout the execution of this study it became possible to state that music or music therapy have a great effective potential in the anxiety and stress levels reduction in ICU's patients, and that effect should be applied to all hospital context, in the aspect that it's seen as a physical and spiritual patient's recovery alternative therapy. Therefore, due to the fact it reaches every single person present in these environments, it is possible to recognize a relation to a more humanized care that reflects on the sedation period of time reduction, pain perception reduction, and also it does not promote any patient loss, being side effect free, consequently seen as a non-pharmacological measure.

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