Original Article

Gregorian chant: reducing anxiety of mothers with hospitalized children*

Canto Gregoriano: redutor de ansiedade de mães com filhos hospitalizados

El Canto Gregoriano: reductor de la ansiedad de madres con hijos hospitalizados

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ABSTRACT

Objective: To determine whether Gregorian chant changes the state of anxiety of mothers with hospitalized children. **Methods:** This study was descriptive, exploratory, and correlational with quasi-experimental, quantitative analysis. Data collection was completed during the period of July 2009 to February 2010. **Results:** Seventy-one mothers were investigated, with 28 mothers meeting all of the criteria for participation in this research. The use of Gregorian chant decreased the state of anxiety of mothers of hospitalized children in single room accommodations within a quaternary care pediatric hospital. **Conclusion:** It is necessary to investigate the possible effects of Gregorian chant in other hospital environments and in other forms of patient accommodation.

Keywords: Music, Anxiety, Mothers, Complementary therapies

RESUMO

Objetivo: Verificar a presença de alteração do estado de ansiedade das mães de crianças hospitalizadas com a audição de canto Gregoriano. **Métodos:** Pesquisa descritiva, exploratória, correlacional com análise quantitativa, quase experimental. A coleta dos dados foi realizada no período de julho de 2009 a fevereiro de 2010. A amostra inicial foi de 71 mães e destas 28 concluíram todas as etapas da pesquisa. **Resultados:** O uso do canto Gregoriano diminuiu o estado de ansiedade das mães de crianças hospitalizadas em um hospital pediátrico de atenção quaternária acomodadas em quartos individuais. **Conclusão:** É necessário investigar os possíveis efeitos do canto Gregoriano em outros ambientes do hospital e em outras formas de acomodação do cliente.

Descritores: Música, Ansiedade, Mães, Terapias complementares

RESUMEN

Objetivo: Verificar la presencia de alteración del estado de ansiedad de las madres de niños hospitalizados con la audición del canto Gregoriano. **Métodos:** Investigación descriptiva, exploratoria, correlacional con análisis cuantitativa, cuasi experimental. La recolección de los datos se realizó en el período de julio del 2009 a febrero del 2010. La muestra inicial fue de 71 madres y de éstas 28 concluyeron todas las etapas de la investigación. **Resultados:** El uso del canto Gregoriano disminuyó el estado de ansiedad de las madres de niños hospitalizados en un hospital pediátrico de atención cuaternaria ubicados en cuartos individuales. **Conclusión:** Es necesario investigar los posibles efectos del canto Gregoriano en otros ambientes del hospital y en otras formas de acomodación del cliente.

Descriptores: Música, Ansiedad, Madres, Terapias complementarias

** Article prepared from the dissertation submitted to the School of Nursing, University of São Paulo (USP)-São Paulo (SP), Brazil.*

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Received article **26/07/2010** and accepted **07/06/2011**

INTRODUCTION

There are historical records of antiquity with different names, indicating that anxiety is part of human experience [1]. The fact that women present with more anxiety in relation to men deserves a special look. Faced with the situation of "being hospitalized" mobilizes a lot of pain and restlessness in the family ambience, especially for the accompanying mother [2]. Any change that affects one family member can affect other members of the nuclear family [3]. Thus, for the nurse to promote actions aimed at reducing the anxiety for a family member, it is inferred that the action will have repercussions among other family members in question. The woman with a hospitalized child may also disassociate herself from the roles of woman, wife and caring for herself, devoting herself [3] entirely to the care of her child [4]. All this tension and burden of concerns interferes with the manner of a crucial relationship with the nursing team and the interpersonal communication [5].

Every people or ethnic group has its own music that carries signs of its history, its culture and even its religiosity [6]. When listening to music, one can perceive changes in tone, pitch, volume and intensity that can influence the human experience in a psychological manner, and can produce a calming or exciting effect [7]. The value given to music as a therapeutic means dates back centuries and is quoted in Greek mythology [8] and in the history of nursing, when music began to be used with a therapeutic purpose by Florence Nightingale in 1859 [9].

In this musical context, a study of different professionals in an emergency service concluded that the use of the classical music of Johann Sebastian Bach decreased the state anxiety of professionals to the extent that the demand for work increased [10]. In another Brazilian study on patients in a coma state, in addition to music, messages with the voice of a close relative were also used. It was concluded that patients in a coma state had significant changes in vital signs and facial expression when compared with the control group, suggesting a certain perceptiveness to sounds around them, principally with familiar sounds [11]. The music also gave the perception that time passed faster in 80% of adult patients undergoing hemodialysis, and an acceptance of the necessity of these patients to receive this care [12]. We know that music affects humans in the physical, spiritual and emotional dimensions. We lack research evidence of its power for restoration or balance.

Music is a strategy of care based on respect for the rights of the customers, their needs, their desires and expectations [13]. Thus, it is also considered that, music being an art of the human experience, it could be an ally for nursing care [14], among other situations, such as reducing anxiety of mothers of hospitalized children, especially Gregorian chant that can reduce stress because it uses natural rhythms of breathing and continuous sounds [15].

OBJECTIVE

Verify the presence of an altered state of anxiety in mothers of hospitalized children who listen to Gregorian chant.

METHOD

We conducted a descriptive, exploratory, correlational study with quantitative, quasi-experimental analysis [16], at the Children's Institute of the Hospital of the Clinics of the University of São Paulo, a pediatric hospital school providing quaternary pediatric care, in a specialty inpatient unit.

The significance level was 5% for statistical analysis. The initial sample was composed of 71 mothers, 28 of whom completed all the steps of collection. Inclusion criteria for conducting the study were to: want to participate in the study; be more than 18 years of age; have the auditory function that preserved hearing and physical conditions to complete the music session; have the necessary language function to respond to the State Trait Anxiety Inventory and the form used for subject identification and personal information used for the research; be accompanying a child admitted to that service for at least 48 hours; be accommodated in a private room; accept participation in the research, in writing, with signature of the Terms of Free and Informed Consent, as provided by National Health Council, in Resolution nº 196/1996 [17].

Data collection was initiated in July of 2009, after approval by the Ethics Committee of the School of Nursing, University of São Paulo (USP) (process nº 808/2009) and approved by the Pediatric Council of the Children's Institute of the Faculty of Medicine of USP on July 3, 2009 (opinion nº 825/35/2009); data collection concluded in February 2010, and the statistical analysis began of the data collected by specialized professionals at the School of Nursing of USP. For a tool to measure maternal anxiety, the State-Trait Anxiety Inventory for Diagnosis (STAID) was used [18]. The mother was asked, personally, to participate in the research and after acceptance of the invitation, signed the Term of Free and Informed Consent.

After signing, she completed the State-Trait Anxiety Inventory for Diagnosis (STAID). This scale was translated and adapted for Brazil and it is the most widely used tool for evaluating anxiety. It consists of two scales for measuring trait anxiety and state anxiety, where these two concepts are differentiated in the measures of personality characteristics and the five cognitive-affective transient conditions, respectively [18]. Two meetings were scheduled in the patient's own single room for a private session for listening to the music of the Gregorian chant. Each subject

completed the STAID before and after each listening session, and completed a form that included subject identification with data for the research: personal data, data related to the hospitalized child, and information about the music they heard, after the individual musical listening session. We used a portable digital stereo with the aid of headphones that were cleaned with 70% alcohol for each use.

RESULTS

As already mentioned, the study sample was calculated to be 71 mothers, but during the course of data collection it was found that: 15 mothers refused to participate in the study without justifying their motives, seven mothers who responded only to the characterization of the research were discharged before starting the musical intervention, 15 mothers were discharged after first listening session, one mother interrupted the first listening session stating that this was a type of music that she did not like to hear, because to her, "it is very still and for me to listen to it, I'll be nervous"; two mothers who had responded to the STAID questionnaire interrupted their first listening session, saying that this musical style did not correspond to their religious beliefs. Although the purpose of the study was explained to them, they demonstrated discomfort about listening to Gregorian chant. One mother stopped listening to the second session of music, because she said he did not like that style of music despite having completed the first listening session; two mothers withdrew from the second listening session; and, 28 mothers completed the second listening session and met all inclusion criteria of this research.

Among the 28 mothers who completed the research, there were similar characteristics according to the socio-demographic variables: regarding age, 11 (39.3%) mothers were between 32 to 40 years of age; 20 (71.4%) resided in São Paulo; 9 (32.1%) had completed secondary school education, and this statistic was repeated for the incomplete and complete college. Nineteen mothers (67.9%) had paid employment; 12 (42.8%) were Catholic; and, 26 (92.8%) were married.

In regard to the variables related to the hospitalized children, 21 (75%) children were hospitalized 3-6 days, 20 (71.4%) were hospitalized due to a chronic disease, 25 (89.3%) had a parent participating in care of the child. The age of the hospitalized children presented in the following distribution: 10 (25.7%) children were between 29 days to one year and eleven months, 9 (28.6%) were between 2 to 6 years and eleven months, and 8 (28.6%) were between 10 to 18 years of age. One (3.6%) child was between 7-9 years and eleven months old. Nineteen (67.8%) mothers had help from family members to manage their lives while they were with their hospitalized children. Nineteen (67.8%) mothers had more children.

To characterize the population's secondary variables about the universe of musical sound, Brazilian popular music had the highest preference among the mothers [10 (35.7%)] of these hospitalized children. Among these mothers, 26 (92.8%) had never studied music; 2 (7.2%) played an instrument. Seventeen (60.7%) mothers were in the habit of listening to music, and seventeen (60.7%) mothers had a close family member with a connection to music. As shown in Table 1, it was found that after the first listening session, 25 (89.2%) women experienced a reduction in their state anxiety; one (3.6%) woman experienced no influence on her state of increased anxiety after the first hearing of the Gregorian chant. In the second listening session of Gregorian chant, 25 (89.2%) continued to have their state of anxiety decreased and three (10.8%) had their state of anxiety increased after listening to Gregorian chant. It is noteworthy that among the 56 musical sessions held for the 28 women who completed the study, 23 (41.07%) showed decreased anxiety with change in the category of anxiety score, i.e., high to moderate and low. The results obtained were significant at a level of 5%, that is, 95% efficiency.

DISCUSSION

The contribution of this present study was to verify that the Gregorian chant changes the state of anxiety in mothers of hospitalized children. To this end, we assessed the sociodemographic conditions, the conditions of the hospitalized child, and characteristics of musical sound of the mothers. Twenty-eight mothers completed the research, with 16 (57.1%) reporting that it was a type of relaxing music when they were asked about why liked the selection and would listen to it again. Eight mothers had their state anxiety score decrease following the first listening session (E2) and before the second listening session (E3). One wonders whether this was a residual effect or if it was related to other conditions experienced by the mother in the time interval between the first and second musical listening sessions. In contrast, mothers with subject numbers 6, 7, 22, 29, 44, 46, 50, 53 and 56 had a state anxiety score before the second listening session (E3) that was higher than their scores before the first listening session (E1). In these cases, they reported worsening of the clinical status of their children, expected results of laboratory tests on the children, or had personal problems in the family, which probably was a difficult factor impacting concentration and the ability and willingness of the mother to listen to music. The mothers with subject numbers 29 and 50 had increased anxiety scores after the first listening session. Despite this, they indicated that they liked listening to the music and would listen again.

One mother (subject #50) reported that "from time to time it is good to relax a little and try not to think

Table 1. Distribution of scores of trait and state anxiety of 28 mothers who participated in and completed research in São Paulo – 2010.

	STAID (Trait)	STAID (State) First musical listening session		STAID (State) Second musical listening session	
n		(E1)	(E2)	(E3)	(E4)
1	33^{eb}	47^{em}	41^{em}	41^{em}	43^{em}
2	32^{eb}	33^{eb}	32^{eb}	30^{eb}	32^{eb}
4	45^{em}	43^{em}	36^{em}	41^{em}	33^{eb}
6	51^{ee}	52^{ee}	47^{em}	56^{ee}	54^{ee}
7	60^{ee}	51^{ee}	38^{em}	70^{ea}	56^{ee}
8	58^{ee}	57^{ee}	33^{eb}	41^{em}	35^{em}
12	58^{ee}	49^{em}	46^{em}	45^{em}	44^{em}
14	36^{em}	55^{ee}	42^{em}	40^{em}	30^{eb}
19	41^{em}	58^{ee}	41^{em}	58^{ee}	37^{em}
21	48^{em}	55^{ee}	35^{em}	44^{em}	37^{em}
22	51^{ee}	46^{em}	37^{em}	51^{ee}	45^{em}
23	43^{em}	48^{em}	40^{em}	42^{em}	39^{em}
28	44^{em}	35^{em}	26^{eb}	25^{eb}	28^{eb}
29	40^{em}	33^{eb}	34^{eb}	55^{ee}	35^{em}
35	45^{em}	46^{em}	42^{em}	42^{em}	40^{em}
36	50^{ee}	60^{ee}	47^{em}	46^{em}	41^{em}
38	33^{eb}	48^{em}	40^{em}	40^{em}	32^{eb}
42	48^{em}	48^{em}	39^{em}	44^{em}	37^{em}
44	37^{em}	60^{ee}	46^{em}	64^{ee}	54^{ee}
46	51^{ee}	43^{em}	42^{em}	48^{em}	40^{em}
50	49^{em}	46^{em}	47^{em}	48^{em}	45^{em}
53	47^{em}	35^{em}	26^{eb}	44^{em}	28^{eb}
56	40^{em}	40^{em}	37^{em}	52^{ee}	48^{em}
59	43^{em}	57^{ee}	39^{em}	49^{em}	38^{em}
60	52^{ee}	68^{ea}	65^{ea}	61^{ee}	60^{ee}
62	47^{em}	45^{em}	45^{em}	42^{em}	41^{em}
68	42^{em}	56^{ee}	41^{em}	34^{eb}	33^{em}
70	38^{em}	44^{em}	26^{eb}	34^{eb}	36^{em}

p = 5% significance

Legend

Low Score^{eb} = 20-34
Moderate score^{em} = 35-49
Elevated score^{ee} = 50-64
High score^{ea} = 65-80
E1 = score of state anxiety before the first musical listening session
E2 = score of state anxiety after the first musical listening session
E3 = score of state anxiety before the second musical listening session
E4 = score of state anxiety after the second musical listening session

about the problems." It was noticed that there was apparent apprehension about the situation of her child, aged one year and ten months, who was hospitalized with pneumonia. The experience of hard times by family members due to the illness of a child carries feelings of fear, sadness, despair, worry, helplessness and uncertainty. We believe that these feelings influence the mothers' state of anxiety and that Gregorian chant in this sequence and frequency, for these mothers, was not enough to reduce these feelings [19].

At the second listening session, the mothers with subject numbers 1, 28 and 70 also had increased anxiety scores. One mother (#1) referred to her concern for the state of health of her daughter. She had such a rare chronic disease that, according to the doctor treating her, beyond her case, there was only one report in the literature of this disease. Another mother (#28) said she felt good after listening to the music, but it was noticed she was in a hurry to finish the session because she would rest that night in her house and her son, also chronically ill, would stay with an aunt. This perceived pressure could justify an increase in anxiety and lack of interest in hearing the music in that moment. It is the nurse who determined in what moment she could listen to the music and also to evaluate its effects on the mothers [20]. One mother (#70), despite having had a significant decrease in anxiety score at the first listening session and pointing out that the song was "relaxed, took me away from the problems (...) gave me a little nap," had no time for a second listening session, because restless, and impatience due to the health condition of her daughter was noted.

Two mothers, subject numbers 2 and 23, both studied music and had family members who were connected to music. These mothers had decreased anxiety scores in the two musical listening sessions. One mother (#2) reported that, "the music is different from what I usually listen to, but it is quite nice." She slept during the two musical listening sessions, so we can infer that people who study or studied music at some point in their lives can accept differences in musical styles, even when it is not one with which they are familiar, as stated by this mother. Among the contributing factors that influence a musical preference for a certain type of music is familiarity with the music [21]. Musicians listen to music differently than nonmusicians. Musicians tend to analyze the music as they are listening which can interfere with its effect upon the listener [22]. Thus, one might think that the analysis would be made in the "musical time" of Gregorian chant, as the singing accompanies the tempo of human respiration [23], thereby interfering with the respiratory rate, and decreasing it and as a consequence, diminishing anxiety. The other mother (#23) said, "*it relaxed my mind, my body and sent me to a world in which I very much wanted to be.*" The influence of music on the formation of mental images arises from listening to erudite music [23].

The principal characteristic about the music selection for this study was that it was sung by male voices. The Gregorian chant is a monophonic vocal music genre, monodic (only a melody), unaccompanied, or accompanied only by repeating the principal voice with the organum (one or more voices), in free rhythm and not measured, used for the Roman Catholic liturgical ritual. Perhaps the message of the Gregorian chant is that we should not respond in any way and yes, be content to

relax in a presence that the music awakens, which is serene and elevated [24].

Three (10.7%) mothers who were interrupted at some point during the musical listening session returned to it later. Mothers, subject #12 and #23, despite having been interrupted, achieved a reduction in anxiety scores with both musical listening sessions. The mother, subject #29, had a small increase in anxiety in the first musical listening session. The same subject changed the television channel for her son and seemed impatient with something, which may have contributed to an increased anxiety score. She also slept during the second listening session to the Gregorian chant and presented a decrease in anxiety score, changing her classification from elevated to moderate. Although the music elicited mental, physical, emotional and spiritual reactions in human beings, not everyone reacts to it the same way, just as an individual does not react the same way twice to the same composition [25].

Twenty (72.4%) mothers had children hospitalized for chronic diseases. There was evidence of a significant correlation between the state anxiety scores and the mothers who had a child hospitalized with chronic disease. Mothers of children with neurological deficits experienced severe stress due to the illness of the child and their dependence, the increased likelihood of death, uncertainty about the child's development, their daily routine, leisure, occupational, marital and social life [26]. This conflictive dynamic reminds us of how important it is that therapeutic interventions are developed that are sensitive to the needs of this population, as well as the improvement of health services to address these families, more specifically with these mothers. So even if we experienced a "bad moment", we would extend our hands to sustain her in her fragility, making humanized care possible [27].

Mothers had high trait anxiety scores, with the highest being subjects # 6, 7, 8, 12, 22, 36, 46, and 60. Their scores on trait anxiety ranged from 50 to 60. They were between 24 and 39 years of age. There was a reference in the study of depressive and anxiety symptoms in mothers of premature infants with and without malformations, where the median age of these mothers was 24 years. In this study, the application of the STAID showed that mothers of children with visible malformations presented higher trait scale scores in comparison to mothers who had children of normal appearance [28]. Trait anxiety refers to individual differences, relatively stable personality traits, a tendency to react in an anxious manner in situations perceived as dangerous or threatening by the individual [18]. One mother's (#60) speech was consistent with this observation, because she related that it felt good listening to music, but that she could not concentrate. She said she was worried about her other daughter who was under the care of her father, with the help of family members. She demonstrated much concern for the disease of her child of one year and ten months, admitted with histiocytosis.

The illness of a child may be perceived as a threatening and impotent situation for a mother, leading her to react in an anxious way [3], and elevating her trait anxiety score. Yet for all these mothers, Gregorian chant reduced the state anxiety scores in both the first and the second listening session.

One mother (#59) was 37 years of age, had completed a university course, had contact with people who had knowledge of music, was evangelical, came from another state, and had a child hospitalized for a chronic disease (neuroblastoma). She stated that while listening to explanations about the study, she wondered how it would have a positive result, since the music was very specific. She also revealed that this style of music would be the last that she would have chosen. However, she agreed to participate in the research and prepared for listening to the music. After the first intervention she showed and verbalized surprise at the knowledge that her state anxiety scores dropped from 57 to 39. In the second listening session, after responding to the STAID, she settled on the couch of the room, and asked to have the lights turned off. Her son was in the playroom with his father. Again, her state anxiety score decreased. She seemed to give herself totally to the pleasure of listening to the sound of Gregorian chant without thinking, and without much awareness of this act [29].

As noted previously, the autonomy of the mother was respected at all moments during the research. No studies were found with mothers accompanying their hospitalized children using music as a therapeutic intervention. Reducing the anxiety of mothers with the use of Gregorian chant can be explained by a quantitative analysis of electrical activity in epilepsy patients, through an increased beta frequency - deep sleep [30]. Based on the concept that the increase in beta frequency corresponds to deep sleep, one can infer that this group showed a significant relaxation as they listened to the Gregorian chant.

It should be noted that the one-way analysis of ANOVA to compare the scores between the age groups presented homogeneity of variance. The scores of the trait anxiety scale presented difference between age groups of mothers who were younger than 30 years and those who were older than 40 years of age. The other variables showed no difference between the mean ages. The t-test revealed a significant correlation between anxiety scores and the fact that the mother had a child hospitalized with chronic illness. When comparing mean scores and the fact that the mothers lived in São Paulo, there was no difference between the average score for the STAID in the first listening session. However, the level of significance was borderline, rather than rejected ($p = 0.049$). It was believed that this correlation was

important due to the fact that the mothers felt more tranquil, even in the process of hospitalization, by being in closer proximity to their home. In the correlation of the difference between scores in the simple paired t-test, it was affirmed that the mean score of E1 (score of the state anxiety scale before first hearing the music) was higher than the mean score of the E2 (score of the state anxiety scale after the first listening session). The same thing occurred for the E3 (score of the state anxiety scale before the second hearing music) and E4 scores (score of the state anxiety scale after the second listening session). This finding implies that there was a decrease of anxiety scores after each listening session to Gregorian chant.

The present study leads us to confirm what other researchers and writers have reported: the influence of music on our body is real. It is worth mentioning that these mothers were accommodated within a private room and listened to the music with headphones, a fact that prevented the influence of ambient noise. It reminds us, also, that Florence Nightingale, even after so many years, still permeates our research and it proves that after more than a century, she was correct when she said that "the use of music is an intervention for health" [10].

FINAL CONSIDERATIONS

By means of this study, although it does not allow generalizations because of the number of mothers who were studied, we can conclude that the use of Gregorian chant decreased the state of anxiety of the mothers of hospitalized children in a quaternary care pediatric hospital, accommodated in single rooms. As limitations of this study, we considered: the small number of mothers who met all inclusion criteria for this study (n = 28); the study found no reduction of anxiety in the medium to long term; and it did not investigate possible residual effects of the Gregorian chant.

Understanding that maternal anxiety due to a hospitalized child creates great suffering makes us question whether we are caring holistically for the mother – child dyad. It is necessary to investigate the possible effects of Gregorian chant in other hospital environments, in order to investigate the possibility of its use with other types of patient accommodations. No studies were found in the literature using Gregorian chant for the reduction of anxiety, to enable the completion of a comparative analysis.

It is intended that the results of this study encourage the use of music therapy in nursing practice. However, it is necessary that a professional is motivated, is qualified and trained to safely carry out the intervention, according to ethical principles, respecting the questions of humanity and art. It is necessary to extend the study of musical styles for their applicability in nursing care to mothers in health care units. Although music has an ancient context, and is part of human history from pre-historical time, we still have many questions to resolve and to know about its effects on human biology.

REFERENCES

1. Dratcu L, Lader M. Ansiedade - conceito, classificação e biologia: uma interpretação contemporânea da literatura. J. Bras. Psiquiq. 1993;42(1):19-32.
2. Morais GS, Costa SF. Existencial experience of mothers of hospitalized children in intensive pediatric care. Rev Esc Enferm USP. 2009;43(3):639-46.
3. Bianchi ER. Stress of hospital nurses. Rev Esc Enferm USP. 2000;34(4):168-74.
4. Milbrath VM, Cecagno D, Soares DC, Amestoy SC, Siqueira HC. Being a woman, mother to a child with cerebral. Acta Paul Enferm. 2008;21(3):427-31.
5. Silva, MJ. Comunicação tem remédio: a comunicação nas relações interpessoais em saúde. 8a ed. Loyola: São Paulo; 2008.
6. Skyllstad K. Música e meditação. SGI Quaterly, 2004.
7. Zárate PD, Diaz VT. Aplicaciones de la musicoterapia em la medicina. Rev. Médica de Chile. 2001;129(2):219-23.
8. Todres, ID. Music is medicine of the heart [editorial]. J Pediat (Rio J) 2006;82(3):166-67.
9. Nightingale F. Notas em enfermagem: o que é e o que não é. São Paulo: Cortez; 1989.
10. Gatti MF. A música como intervenção redutora da ansiedade do profissional de serviço de emergência: utopia ou realidade? [dissertação]. São Paulo: Escola de Enfermagem, Universidade de São Paulo; 2005.
11. Puggina AC. O uso da música e de estímulo vocais em pacientes em estado de coma: relação entre estímulo auditivo, sinais vitais, expressão facial e escalas de Glasgow e Ramsay [dissertação].São Paulo: Escola de Enfermagem, Universidade de São Paulo; 2006.
12. Caminha BC, Silva MJ, Leão ER. The influence of musical rhythms on the perception of subjetive states of adult pacients on dualysis. Rev Esc Enferm USP. 2009;43(4):923-9.
13. Bergold LB, Alvim NA. A visita musical como estratégia terapêutica para a humanização hospitalar. Rev Cient HCE. 2006;1(1)61-8.
14. Almeida AP, Castro AV. A Enfermagem e a Música: duas artes para refletir o cuidar em pediatria. Nursing (São Paulo). 2010;12(142):136-140.
15. Campbell D. O efeito Mozart: explorando o poder da música para curar o corpo, fortalecer a mente e liberar a criatividade. Rio de Janeiro: Rocco; 2001.
16. Polit DF, Beck CT, Hungler BP. Fundamentos da pesquisa em enfermagem: métodos, avaliação e utilização. Porto Alegre: Artmed, 2004.
17. Brasil. Ministério da Saúde. Conselho Nacional de Saúde. Resolução n° 196 de 10 de Outubro de 1996: Estabelece diretrizes e normas regulamentadoras de pesquisa em seres humanos. [Internet]. 1996 [citado 2011 abr. 3]. Diário Oficial da República Federativa do Brasil. Brasília;Disponível em: http://conselho.saude.gov.br/resolucoes/reso_96.htm
18. Spielberger CD, Gorsuch RL, Lushene RE. Inventário de ansiedade traço-estado. Rio de Janeiro: CEPA; 1979.
19. Monteiro CF, Veloso LU, Sousa PC, Morais SC. A vivência familiar diante do adoecimento e tratamento de crianças e adolescentes com leucemia linfoide aguda. Cogitare Enferm. 2008;13(4): 484-9.
20. Andrade RL, Pedrão LJ. Algumas considerações sobre a utilização de modalidades não tradicionais pelo enfermeiro

na assistência de enfermagem psiquiátrica. Rev Latino-am Enfermagem. 2005;13(5):737-42.
21. Ortiz JM. O tao da música: utilizando a música para melhorar sua vida. Traduzido por Borges M. São Paulo: Mandarim; 1998.
22. Leão ER, Fleusser V. Música para idosos institucionalizados: percepção dos músicos atuantes. Rev Esc Enferm USP. 2008;42(1):73-80.
23. Leão ER. Imagens mentais decorrentes da audição musical erudita em dor crônica músculo-esquelética: contribuições para a utilização da música pela enfermagem [Tese]. São Paulo: Escola de Enfermagem. Universidade Estadual de São Paulo, 2002.
24. Le Mée, KW. Canto: as origens, a forma, a prática e o poder curativo do canto gregoriano. Rio de Janeiro: Agir; 1996.
25. MacClellan R. O poder terapêutico da música. São Paulo: Siciliano, 1994.
26. Pontes AC. A maternidade em mães de crianças com doenças neurológicas crônicas: um estudo sobre a sobrecarga e a qualidade de vida [tese]. São Paulo: Faculdade de Filosofia, Ciências e Letras, Universidade de São Paulo; 2008.
27. Silva MJ, Leão ER. Sobre o cuidar ampliado. In: Leão ER, organizadora. Cuidar de pessoas e música. São Caetano do Sul: Yendis; 2009. p. 11-30.
28. Perosa GB, Canavez IC, Silveira FC, Padovani FH, Peracoli JC. Sintomas depressivos e ansiosos em mães de recém-nascidos com e sem malformações. Rev Bras Ginecol Obstet. 2009;31(9):433-9.
29. Copland A. Como ouvir e entender música. Rio de Janeiro: Artenova; 1974.
30. Frayman L. Análise quantitativa da atividade elétrica cerebral durante estimulação cognitiva de pacientes epiléticos [tese]. São Paulo: Escola Paulista de Medicina, Universidade Federal do Estado de São Paulo; 2000.