

Full-Length Article

Effectiveness of Music Therapy in Advanced Cancer Patients Admitted to a Palliative Care Unit: A Non-Randomized Controlled, Clinical Trial

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Abstract

The purpose of this prospective non-randomized controlled clinical trial was to evaluate the effectiveness of music therapy (MT) in advanced cancer patients admitted to a palliative care unit. Sixty-eight patients were included. Patients were assigned to standard care alone or standard care with MT. MT group received four individual sessions. Different types of live music interventions were used. Musical history, and a MT scale were evaluated in the active arm MT group. Symptoms, hospital anxiety-depression scale (HADS) and well-being were evaluated in both groups. When comparing improvements MT and control group at the end of the study, results showed statistically significant differences in well-being scale (2[1;3] MT group vs. 0[-2;0] control group) ($p < 0.001$), HADS (-5[-10;-1] MT group vs. 1.5[-3;8] control group) ($p < 0.001$) and mean total score of symptoms (-3[-6;-1] MT group vs. -1[-3;2] control group) ($p < 0.01$). Our study showed that music therapy is highly recommendable for advanced cancer inpatients.

Keywords: Music Therapy, Neoplasm, Palliative Care, Clinical Trial, In-Patients.

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Introduction

Advanced and terminal illness is characterized by the presence of an incurable and progressive disease, with limited possibilities of response to specific treatment, and is associated with many physical and emotional symptoms, an emotional impact on the patient, family and health care team, and a limited survival prognosis. Patients with advanced or terminal illness can benefit from palliative care support. The majority

of patients receiving specialist palliative care services have cancer, although there is an increasing recognition of the unmet need of patients with other progressive, incurable, non-malignant diagnoses. In advanced cancer illness, multiple physiological problems can contribute to a patient's pain, dyspnea or other symptoms. Palliative care is an approach that can improve the quality of life of patients facing a life-threatening illness, and that of their families. It consists of the prevention and relief of suffering by means of early identification, assessment and treatment of pain and other physical, psychosocial and spiritual issues [1].

As we speak of quality of life, we must also speak of "quality of death," which has been an equal concern throughout history. Usually fear relates more to suffering than to death itself. The death process has been *medicalized* and medicine has been *mythologized*. In fact, the person who is dying highly appreciates the reaffirming proximity of others, active and attentive listening, and being valued for who he or she is and who he or she has been.

At present, psychological and spiritual support is considered challenging work but is gaining in importance in

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patient care. Often, pharmacological treatment is not enough to improve emotional symptoms such as insomnia, depression, and anxiety. In recent years, many non-pharmacological treatments have been developed to address these salient issues in patients receiving palliative care. They may offer relief not only from the physical symptoms but also psychosocial, and spiritual problems. Among these therapies are music therapy, psychotherapy, occupational therapy and art therapy.

Integrative medicine has been described as the convergence of allopathic medicine and complementary and alternative medicine, and implies care of the whole person [2]. Music therapy may be considered a cost-effective integrative health care strategy [3], it may be used along with mainstream medical care. Risks or side effects from music therapy have not been identified, and if employed skillfully it will not conflict or interfere with standard treatment [4]. It consists of the use of music and musical elements (sound, rhythm, melody and harmony) by a qualified music therapist with an individual patient or group. The literature points to music therapy's ability to promote relaxation, reduce anxiety, stress, depression and fear, and provide non-intrusive opportunities for people to connect with and express their feelings [5-9]. Additionally, through skillful use it can facilitate communication with family and loved ones [10-12]. Music can evoke emotions, both perceived and experienced [13-15] and thoughts, leading to recognition of needs and desires. Music therapy may contribute to each patient and families being able to explore opportunities to enjoy time together or in solitude, to review life and to achieve a sense of completion in relationships and life itself.

Specific songs or works may hold special meaning through associative processes in one's life experience. Music therapists use a wide variety of interventions with palliative care patients such as patient preferred significant songs, instrumental improvisation, vocal improvisation, life-review, relaxation techniques and guided-imagery with music [10,17]. If patients are encouraged to engage in creative participation, active music therapy methods can improve their self-esteem and provide them with an incentive and motivation to live fully throughout the process of dying. Patients participate in the choice of songs, as the beginning of a process through which the expression of emotion and thought may be gained [10,18].

In patients with terminal illness, fluidity of speech and discourse is often absent, arguably due to the uncertainty of their future, as well as physical limitations or inability to openly express their feelings. Verbal communication is often difficult due to the intensity of the emotions they are experiencing, or because of a desire to spare their loved ones. Music therapy enables validation of feelings and is a safe appropriate vehicle for releasing them. It enables the communication of important messages by a population with a strong need to convey wishes and desires before the final transition [10-19].

Alleviation of suffering is a central goal of palliative care, and music therapy may prove to be particularly effective in this specific context. Music therapy may help improve symptom relief, provide physical and emotional comfort, as well as address psychological and spiritual needs. It may be used in psychoeducation, coping techniques and provide grief support [20-22]. It has been shown to be an effective therapy that helps the patient to face the difficulties and stress he or she will encounter once admitted to a Palliative Care Unit (PCU) [21,22].

Formal music therapy programs in palliative medicine exist in numerous major institutions. Specialized palliative care programs rely on an interdisciplinary team model, where each member brings specific skills and areas of expertise. Professionals from many disciplines, including social work, psychology, physiotherapy, nutrition, and clinical pharmacy contribute to a well-coordinate interdisciplinary team [23]. It is imperative that the music therapist work as an integrated member of the interdisciplinary team, and not independently [21,24].

Several studies about music therapy in palliative care have suggested that music therapy may contribute to the reduction of pain [24-27], anxiety [22,25,28], fatigue [25], and to the improvement of mood and relaxation [14], spirituality [29-30] and quality of life [24,31]. However, many of these studies had small samples and did not include control groups or randomization in their design.

It is important to note that keen interest exists in promoting further evidence-based clinical research in the field of Music Therapy within Palliative Care, to examine its effects on both physical and psychological symptoms. The purpose of the present study was to analyze the effectiveness of music therapy interventions in advanced cancer patients admitted to a PCU.

Methods

Study design

A non-randomized controlled, clinical trial was used.

Setting

The study was carried out in the PCU of the Division of Medical Oncology of a university-affiliated hospital in Barcelona, Spain. The PCU is a 16-bed inpatient unit for the care of patients with advanced diseases (more than 90% with a cancer diagnosis) who are hospitalized for physical and emotional symptom management. Patients are attended to by an interdisciplinary team, which includes doctors, nurses, social workers, a psychiatrist, a psychologist, a physiotherapist, volunteers, a nutritionist and pharmacists. About 70% of the patients die during hospitalization. On average, the mean length of stay in PCU is 15 days. For this reason, our study includes 4 sessions in an 8-10 days period.

	Control Group n=34	Music Therapy Group n=34	P
Gender (man) *	25 (73.5%)	20 (58.8%)	0.305
Age **	74 [61 ; 82]	72 [61 ; 80]	0.404
Pfeiffer Index ** (range 0-10) ^a	0 [0 ; 3]	0 [0 ; 2]	0.470
Karnofsky Index ** (range 0-100) ^b	30 [30 ; 40]	30 [30 ; 40]	0.317
Cancer site *			
Lung	10 (29.4%)	4 (11.7%)	
Gastrointestinal	9 (26.5%)	5 (14.7%)	
Urinary tract	2 (5.9%)	4 (11.7%)	
Hematological	3 (8.8%)	2 (5.9%)	
Liver	2 (5.9%)	2 (5.9%)	
Prostate	0 (0%)	3 (8.8%)	
Pancreas	3 (8.8%)	0 (0%)	
Other	5 (14.7%)	14 (41.3%)	
Death during hospitalization *	25 (73.5%)	22 (64.7)	0.431
Physical and emotional symptoms ^c			
Pain (range 0-4)**	0 [0 ; 1]	1 [0 ; 2]	0.022
Asthenia (range 0-4)**	2 [2 ; 3]	3 [2 ; 3]	0.071
Total score (range 0-27) ^{d**}	7 [6 ; 9]	11 [6 ; 15]	0.006
HADS (range 0-42) ^{e**}	16 [10 ; 22]	22 [19 ; 27]	0.003
Patient well-being (range 0-10)**	6 [5 ; 7]	5 [4 ; 6]	0.288

Table 1. Music therapy and control group baseline characteristics (day 1); ^a:Higher scores indicate higher cognitive impairment; ^b: Higher scores indicate better performance status; ^c: pain, asthenia, breathlessness, dysphagia, nausea, constipation, anxiety, depression and insomnia; ^d: Total score: sum of the 9symptom scores; ^e: Hospital Anxiety and Depression Scale (HADS); *: n (%); **: Median [P₂₅; P₇₅]

Population

The study population included patients admitted to the PCU during 2011 and 2012. Patients were consecutively assigned to one of two groups: standard care alone or standard care with music therapy. The inclusion criteria were: 1) to be suffering from advanced cancer; 2) to have an acceptable performance status (defined as having a Karnofsky Index of 30 or higher) [10]. Patients with a non-oncological advanced disease were excluded.

Sixty-eight patients were enrolled in this study, 34 in the music therapy group and 34 in the control group. The characteristics of the total sample are shown in Table 1. The patients assigned to the music therapy and control group did not significantly differ according to age, gender, Karnofsky Index and Pfeiffer Index (Table 1).

Procedure

A Case Report Form (CRF) was developed from review of the literature. Approval of the study by the institutional Ethical Committee for Clinical Research was obtained. The interviewers (music therapists) assessed the newly admitted patients for eligibility and together with a medical staff member informed them (verbally and written) about the study. If they agreed to participate in the study, the patients were distributed consecutively to the experimental group (which received the music therapy intervention) or the control group, alternately. Written informed consent was required before the first session of the intervention.

The interviewers had been trained by a researcher to administer the survey and instruments in a standardized way. After the intervention, a researcher (ARG) extracted demographic data from the computerized database of the hospital.

Outcomes

1. Primary outcomes

1.1. Physical and emotional symptoms

Evaluated items used to assess physical and emotional symptoms were: pain, asthenia, shortness of breath, dysphagia, nausea, constipation, anxiety, depression and insomnia. The level of each of these 9 items was scored from 0 to 3, using a non-standardized Likert scale. The total score was the sum of the 9 items scores (range of total score: 0-27).

1.2. Anxiety and depression

The instrument used to provide consistency assessing anxiety and depression was the Hospital Anxiety and Depression Scale (HADS) [32]. It is a 14-item questionnaire, 7 of the items relate to anxiety and 7 to depression. The scoring system used is a Likert scale (0 to 3 points). The HADS is scored in a range of 0 and 42. The cut-off score is 19, which indicates significant emotional distress in the last week.

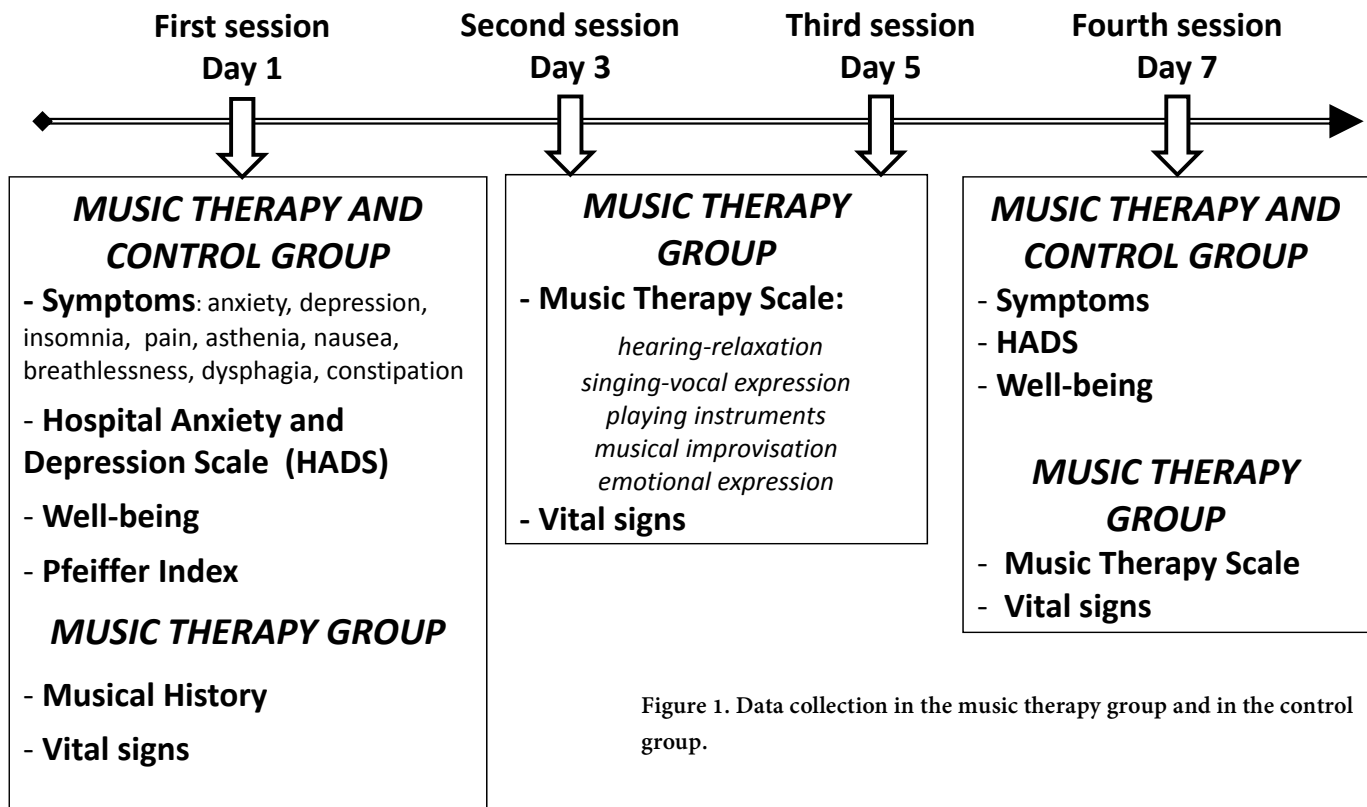


Figure 1. Data collection in the music therapy group and in the control group.

1.3. Patient well-being

Well-being was evaluated by a visual analogue scale. Patients rated their well-being from 0 to 10, with 0 reflecting the lowest level of well-being and 10 the highest level of well-being.

2. Secondary outcomes

2.1. Musical history and music therapy scale

Patients’ musical history was especially important to gain a deeper perspective on their inner world and preferences in order to elaborate a personal plan of music therapy. The following data was registered in the musical history: patient preferred songs, music genres favorite artists, as well as the least favorite or those that the patient found unpleasant; favorite song; preferred natural environment or favorite place.

The music therapy scale is a non-validated Spanish scale used by the music therapist in order to evaluate the degree of involvement of the patient with the different techniques and activities performed. This is not intended to be an indicator of therapeutic change. It includes 5 categories: listening-relaxation, singing-vocal expression, playing instruments, musical improvisation and emotional expression. Each category is assessed with four items: participation, attention-concentration, motivation and interaction with the therapist (each item scores from 0-3, total score range for category is 0-12, and total score range of music therapy scale is 0-60).

The “interaction with the therapist” item measures, in each of the categories, the subjective perception of the music therapist of having connected with the patient and having met his needs.

2.2. Satisfaction with music therapy

Satisfaction with music therapy was evaluated using a Likert scale (0 to 4 points), with 0 reflecting no satisfaction and 4 highest satisfaction.

2.3. Other variables

Data on sociodemographic (age, gender), cancer site, and death during PCU stay were collected from the patients’ records in the computerized database of the hospital. The Karnofsky Index [19] and Pfeiffer Index [33] were used to evaluate performance status and cognitive status, respectively.

Research hypotheses

The hypothesis of the study is that music therapy is effective with patients with advanced cancer illness admitted to a palliative care unit, and improves physical symptoms (pain and other), emotional symptoms (depression, anxiety) and well-being.

Intervention

All patients assigned to the music therapy group received four music therapy sessions on alternative days, with live music using voice and various instruments (not recorded music). Each music therapy intervention took approximately 30 to 45

	Control Group n=34	Music Therapy Group n=34	p
Physical and emotional symptoms ^c			
Pain *	0 [0 ; 0]	0 [-1 ; 0]	0.191
Asthenia *	0 [-1 ; 1]	0 [-2 ; 1]	0.052
Total score *	-1 [-3 ; 2]	-3 [-6 ; -1]	0.011
HADS ^{*,a}	1.5 [-4 ; 8]	-5 [-10 ; -1]	0.001
Patient well-being *	0 [-2 ; 0]	2 [1 ; 3]	0.001

Table 2. Improvements in music therapy and control group between the beginning (day 1) and at the end of the study (day 7); *: median [25th-75th percentile]; ^a: Hospital Anxiety and Depression Scale (HADS); Differences between 7 day measurement and basal measurements between groups Mann-Whitney U-Test

minutes. An experienced therapist, who was accompanied by one or two music therapy students with university master’s degrees, conducted the sessions. If the patient so desire, family members were encouraged to participate actively in some of the sessions. Some members of the medical and nursing team occasionally participated actively in the therapy sessions.

Different personalized music interventions were used: singing, active music listening, song-writing, musical life review, playing an instrument, music sedation and visualization with music. Instruments used were: guitar, ocean drum, violin, harp and tambura. Voice or, sometimes, another patient preferred instrument such as saxophone or clarinet were also used.

The data collection process is shown in *Figure 1*. All patients (music therapy and control group) were evaluated in the first session (day 1) by: physical and emotional symptoms score, HADS, well-being scale and Pfeiffer Index. In the music therapy group, musical history was also evaluated in the first session. Although the first session served mainly initiate contact with the patient and carry out the first data capture, it was common to also provide a music therapy intervention.

In the second session (day 3), the music therapists played the songs that the patient had indicated he or she preferred during the gathering of the patient’s musical history. The patient sang or listened actively. The lyrics were usually discussed and analyzed, or the feelings that the song evoked were processed. According to prior assessment, the music therapists provided one or a number of the following interventions: music sedation (changing the time signature of the patient preferred song from binary into ternary time for sedation with voice, while creating a holding space of calm and comfort) [34]; guided visualization with music (guiding the patient to a significant life event accompanied by relaxing music played on guitar, ocean drum or clarinet); music assisted (inviting the patient to close their eyes using, gentle prompts in the nurturing presence of the therapist accompanied by music in minor mode on guitar, with the entraining music with the patient’s breathing). Post session, the images and the patient’s comments that emerged during relaxation were processed. After processing was completed, the patient would verbalize feelings, or communicate them non-verbally.

The third session (day 5) followed the same procedure as the second. Songwriting was provided according to assessment. Music therapists together with the patient elaborated the lyrics of a song, in which ideas, thoughts, feelings, and significant memories were collected. In the second and third session, patients in the music therapy group were also evaluated using the music therapy scale.

In the last session (day 7), family members were invited to the session to share the song created by the patient, along with his or her favorite song from their musical history. Experiences, emotions and memories were explored. All patients (music therapy and control group) were evaluated again by assessment of physical and emotional symptoms, HADS and the well-being scale. The music therapy scale was also employed for evaluation in the music therapy group. At the end of each music therapy session, the music therapy group data on satisfaction with music therapy was also collected.

Differences in registered variables at the beginning and at the end of the study were compared between music therapy and control group to examine treatment effects.

Data analysis

Descriptive analysis was conducted. Categorical variables were expressed with frequencies and percentages. Continuous variables were described with median and percentiles 25 and 75. Comparison in change in EVA, pain, asthenia, symptoms, etc. between groups was carried out with the difference between 7-day measurements and base line measurements. Normality of studied continuous variables was assessed with the Saphiro-Wilk test and Q-Q plots. Due to lack of normality of majority of variables (including differences), the study employed a non-parametrical statistical approach to compare two groups and to compare the change in the music therapy scale in treatment group. Thus, the Mann-Whitney U and Wilcoxon tests were used to compare continuous variables between groups and within the treatment group respectively. Comparison of other categorical variables was performed with a Chi-Square test or Fisher exact test as appropriate. P values less than 0.05 were considered as statistically significant. All statistical analysis was performed with SPSS 18.0 (IBM Corp.).

Results

During the study period, 658 patients were admitted to the PCU and assessed for eligibility. Four hundred and sixty-one patients were excluded: 189 did not meeting inclusion criteria, 272 declined to participate for worsening clinical status or because they were not in the room or not prepared to participate (daytime sleepiness, family visits). Sixty-eight patients were enrolled in this study, 34 in the music therapy group and 34 in the control group. As indicated in *Figure 2*, patients of music therapy group showed greater decline in symptoms and more improvement in emotional distress (HADS) and well-being (V-A Scales). The improvement in the total score of symptoms, anxiety and depression and in well-being was significant when compared to the control group (*Table 2*). On the other hand, we did not find statistical differences in specific symptoms such as asthenia and pain.

Regarding the music therapy scale, playing instruments and musical improvisation were not feasible interventions for our study population. As a consequence, the evaluated categories were listening-relaxation, singing-vocal and emotional expression. The score range for each category was 0-12, but given that those two categories were eliminated from analysis, the total score range of the scale was 0-36. In the first session, the mean scores obtained were: listening-relaxation 11.1 ± 1.6 , singing-vocal expression 11.2 ± 1.3 , emotional expression 11.7 ± 0.9 , and total score was 28.7 ± 7.1 . When comparing the scores between the first and each other session, we did not find statistically significant differences except for emotional expression between de third and the first session ($p = 0.04$).

Patient satisfaction with music therapy session was also evaluated, and the mean scores in the Likert scale (0-4) in the first, second and third session was 3.8 ± 0.4 , and in the last session 3.9 ± 0.2 .

Discussion

In our study, music therapy interventions in advanced cancer patients admitted to a PCU led to a significant improvement in well-being, anxiety and depression, as well as decreased total symptomatology. Results are comparable to those existing in the literature on music therapy with in advancer cancer patients [17,25,34,35]. Although the majority of published studies do not compare the results with a control group, there are some controlled trials that indicate that music therapy produces emotional and physiological benefits, reducing anxiety, stress, depression, and pain [24,25,28,36-38]. In a randomized controlled trial of cancer patients undergoing autologous stem cell transplantation, anxiety, depression, and total mood disturbance scores were significantly lower in the music therapy group as compared with standard-care controls [39]. Hilliard [31] analyzed 80 hospice patients, randomized to receive routine hospice services or those services plus music therapy. He observed an improvement in quality of life in the experimental group, with

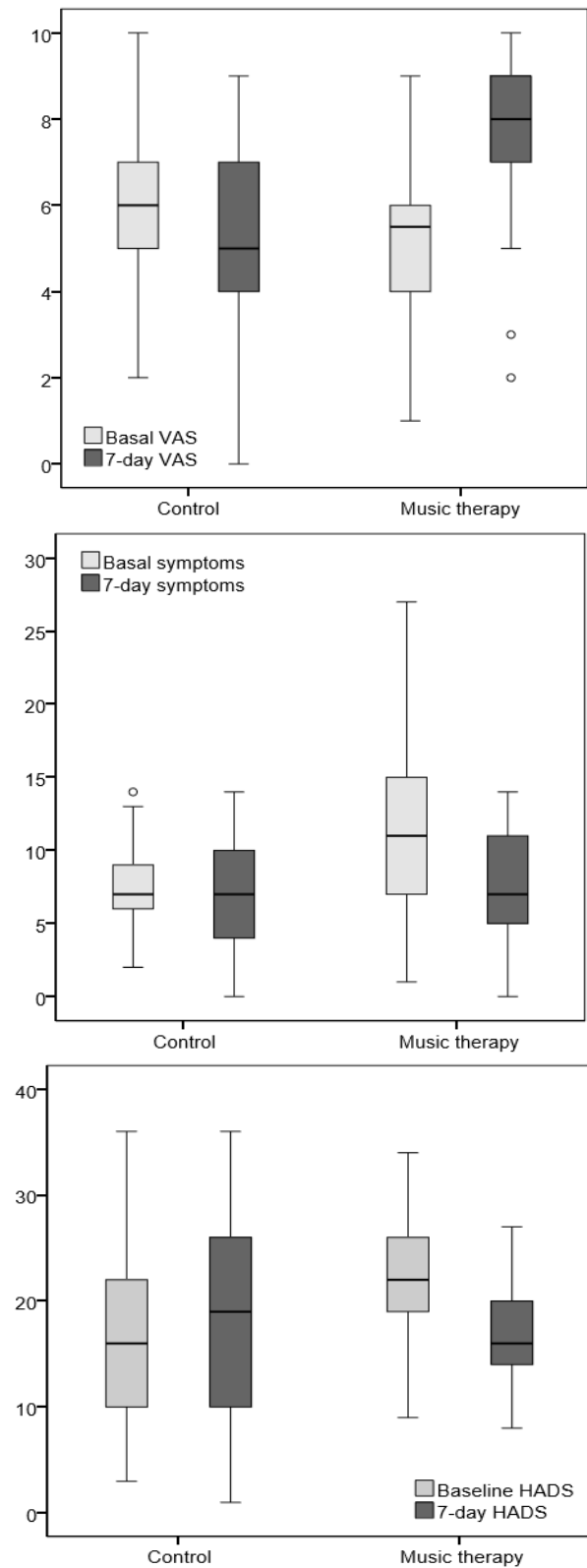


Figure 2. Comparison between music therapy and control group at the beginning and at the end of the study. (a) Well being (VAS). (b) Symptoms. (c) emotional distress (HADS)

the benefit increasing over time with more music therapy. No change in physical status or survival was observed. A prospective study about the effect of music therapy in 200 patients with chronic or advanced illness, showed improvement ($p < 0.001$) on anxiety, body movement, mood, facial expression, shortness of breath, and verbalizations [40].

According to the literature, music therapy has also been shown to be effective in reducing pain [26,27,37,41]. Unexpectedly, in the present study, we did not find significant differences in the decrease of pain. In reference to this issue, Gallagher et al. [17] demonstrated an improvement of pain intensity in 90 palliative care patients who were randomized to a music therapy group versus control group. In addition, Horne-Thompson et al. [25] evaluated 20 terminally ill patients, and found significant statistically differences between control and experimental group in anxiety, pain, fatigue and somnolence. Gutsell et al. [27] in another interesting randomized study, established the efficacy of a single session of music therapy to reduce pain in palliative care patients. In this study, the music therapy session included guided relaxation and live music.

A significant reduction of pain not being observed in the present study may be due to different causes: 1) Pain evaluation was not carried out pre and post single sessions. The post-effect measure was taken after the last session (day 7). As pain perception is dynamic process, it could be modified, and perhaps exacerbated, from day 1 to day 7 by many other factors, such as disease progression or changes in medication; 2) The sample size was small; 3) The baseline of occurrence of reported pain in both groups was unbalanced (19 patients of music therapy group versus 10 patients of the control group suffered from pain in first session), so differences were not equitable between groups.

As can be seen in the results of the music therapy scale, the techniques that were most successful were listening-relaxation, singing-vocal and emotional expression. Usually palliative patients suffered fatigue and not willing to play instruments or improvise. What they preferred most was relaxation and visualization accompanied with live music. Patient satisfaction with music therapy was very high, as evidenced in the results. This finding is consistent with the literature. O'Callaghan [34], in a study of palliative care experiences in cancer patients, observed that all 128 patients except for one indicated that music therapy was a positive experience.

Nevertheless, our study had limitations. Regarding methodology, there was a risk of bias due to lack of blinding and absence of randomization. Regarding music therapy and control group characteristics, they differed in reported pain, baseline total scores of symptoms and HADS scores. The music therapy group had higher scores, across the board, signifying that those in that group had more acute emotional and physical symptomatology. Arguably it could be possible that music therapy may be more effective with patients with more compromised physical health. The study was also limited by the nature and unfavorable prognosis of patients

admitted to the PCU, although there were no differences between music therapy and control group Karnofsky index nor in death during hospitalization.

Also, another limitation to the study is that some salient items were not evaluated and registered: spirituality; and family and health care team satisfaction. Although these were not contained in the scope of this study, it would have been interest to evaluate through standardized measurement, as secondary outcomes. It is well known that music therapy can promote a self-determined sense of "life closure", and can aid patients facing the final transition in exploring their spirituality [29,30]. Faced with the fact of death's approach, many people value the process of structured life completion and closure. On the other hand, although not measured specifically, the authors wish to emphasize that they did indeed observed the great comfort and satisfaction that music therapy also provided for family members, that was demonstrated in other studies [11,42] Some patients requested that we compile a personalized recording of songs that assisted in identifying, expressing and communicating their thoughts and feelings to their love ones. Songs written with the music therapists or pre-composed recorded songs we often left as a legacy for family members. After the patients died, these recordings were often of enormous assistance to their loved ones, comforting them through their bereavement period [10]. Furthermore, families occasionally requested that the music therapists provide music accompaniment in funeral ceremonies. Regarding the physician and nursing team, they also had a distinctly positive impression of the music therapy program, as has also been indicated in other studies [17,34]. Music therapy approaches emotional symptoms from a perspective that physicians cannot often provide.

Research is essential for advancing the field and improving evidence based care for future patients and families. Ethical and methodological challenges are inherent in studies involving people with advanced illness and limited prognosis. In recent years, the music therapy collective has called for efforts to improve the quality of research, and emphasizes the importance of evidence-based care [27]. To the best of our knowledge, the majority of end-of-life studies in the body of music therapy literature are descriptive and with small samples [36]. With this in mind, in the present study a strong emphasis was placed on methodological concerns in the design. To avoid confounds from other factors that could contribute to symptom relief (pharmacological or non-pharmacological factors) and mask the benefit of music therapy, we conducted a non-randomized controlled clinical trial study instead of one with a descriptive design. Non-randomized controlled clinical trial not only was descriptive but also compared standard care with the standard care plus music therapy. This design gave greater depth to the study, and allowed us to achieve greater reliability of outcome with a smaller number of patients. Moreover, it used a proper register of variables through standardized scales when possible.

As goes without saying, the importance of using measurement tools as a standardized method of documenting clinical interventions in a more objective and standardized way is also prevalent in the literature [17]. This enables the therapist to study the effectiveness of the music therapy interventions with greater reliability and to compare results with other studies and centers. On the other hand, in addition to quantitative methodology, the use qualitative methodology in music therapy research is also of great interest [10,34]. Further rigorous studies are needed to better understand the impact of specific music therapy interventions.

To carry out a study of these characteristics, a sound and well-integrated professional interdisciplinary team is absolutely essential. In the same light, we are strongly biased toward participating music therapists being qualified professionals with specific certification, skills, and training. It is our belief that true interdisciplinary constructs and teamwork will provide optimal care for this fragile population and their family members.

In conclusion, music therapy in advanced cancer patients admitted to a PCU significantly improved well-being, anxiety and depression, and decreased symptomatology, compared with standard care only. Our study showed that music therapy should be strongly considered for inclusion in the care of advanced cancer inpatients as an effective non-pharmacological treatment. Music therapy is much recommended to contribute to achieving the best quality of life possible, to relieve suffering and to promote communication and emotional wellbeing at the end of life. In the context of palliative care, music therapy can be seen as adhering closely to the principle set out by Dame Cicely Saunders: “the care of the dying demands all that we can do to enable patients to live until they die, and includes the care of the family, the mind, and the spirit as well as the care of the body” [43]. We suggest that further studies are needed to promote evidence-based clinical research of the effect of music therapy in palliative care patients.

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