

THE IMPACT OF MUSIC THERAPY SESSIONS ON CHILDREN DIAGNOSED WITH PROGRESSIVE CHRONIC ILLNESS – A PILOT PROGRAM¹

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SUMMARY. This research proposes to analyse the impact that music therapy sessions had on children diagnosed with progressive chronic illness. During a period of nine months, a group of twenty children benefitted from music therapy sessions that were conducted using improvisation, passive listening, rhythmic grounding and composition. Each music therapy session was prepared with a procedure plan that had specific goals and objectives, depending of the child's age, temperament, diagnosis and needs. In order to analyse the results of these sessions, clinical observation sheets were filed at the beginning and the end of each session and this paper aims to present the results of this research. The observation sheets included three main domains: facial expression, behaviour and emotions, all with different components that are important in evaluating a child's response to the therapy. An important finding was that fear, agitation and fury formed a triad, being dependent on each other. Also, the variable of joy seemed to have the most impact, as it was central to other variables such as: touch, look, eye brightness, language, position of the body and position of the head. The results of this pilot program indicate the music therapy has a positive impact on children with progressive chronic illness and it should be further developed and implemented in other parts of the country.

Keywords: Music therapy, progressive chronic illness, clinical observation sheets, anxiety tests.

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Introduction

During a period of nine months, a group of faculty and students from the music department at Emanuel University of Oradea developed a music therapy pilot program using the Nordoff-Robbins model.⁴ This model of music therapy focuses mainly on creative music therapy and can be used both individually and in a group setting. The purpose of these sessions was to help children with progressive chronic illness deal with fear and anxieties related to their illness and promote a sense of well-being. Each session was carefully prepared through a procedure plan that included specific goals and objectives⁵, which was continually adapted to fit the child's needs. Even though each child has individual need that must be assessed, there are three main categories of goals and objectives that are common to children with cancer. These three categories are: cancer treatment and hospital goals, that take into account the reduction of fear, anxiety and stress; social and emotional goals and musical goals.⁶

Given the diagnosis of the trial group, it was very important that the students and faculty assess the medical condition of the child prior to the music therapy session and change their plans accordingly. Some of the children in the group were in the oncology sector and due to their condition, their immunity would sometimes plummet, therefore being kept in isolation. In these cases, the therapy also focused on communication, speech and socialization.

To analyse the effect of these music therapy sessions, observation sheets were completed both at the beginning and the end of session. These sheets took into account three main categories: facial expression, behaviour and emotions. The purpose was to determine if music therapy had an impact on lowering the level of fear and anxiety, while also elevating the feelings of joy and peace.

Literature review

The subject of music therapy used as an alternative therapy for children diagnosed with progressive chronic illness has started to receive more attention from theoreticians and practitioners. This subject is part of a

⁴ Nordoff, Paul, Robbins, Clive, *Creative Music Therapy: A Guide to Fostering Clinical Musicianship*, 2nd Edition, Gilsum, NH: Barcelona Publishers, 2007, pp. 367-457.

⁵ Berger, Dorita S., *On Developing Music Therapy Goals and Objectives*, in *Voices, A World Forum for Music Therapy*, March 2009, vol. 9, nr. 1, <https://doi.org/10.15845/voices.v9i1.362>, date accessed: 07 September 2018

⁶ Reid, Philippa, *Music Therapy for Children and Adolescents Diagnosed with Cancer*, in *The Oxford Handbook of Music Therapy*, Oxford University Press, London, 2016, pp. 66-89.

larger pool of research that aims to analyse the effect that music has on hospitalized patients and on people diagnosed with serious, sometimes life-threatening illnesses. One of the key elements of music therapy is the positive effect it has on the mood of the patient. A number of studies have shown that listening to music can decrease anxiety and promote a sense of well-being.⁷

Another reason to implement music therapy is the effect it has on pain. In hospital settings, patients after a surgical treatment experienced less perception of pain when listening to music by comparison to those patients who did not listen to music.⁸ A study done on two hundred patients hospitalized at University Hospitals Case Medical Centre aimed to analyse the difference on pain perception between patients that received just standard care and patients that received standard care with the inclusion of music therapy. The results of the study indicated that the music therapy group patients had a lower level of pain, even after a single session of music therapy.⁹

Another important facet of music therapy is the impact it has in palliative care patients. Studies have indicated that people in hospice care have less stress and anxiety and experience more comfort, when they are part of a music therapy program.¹⁰

For the topic of this research, the effect of music therapy on children is of great interest, as it is specifically in the area of paediatric illnesses. There have been studies done to measure the level in which music therapy practices improve the quality of life in hospitalized children. For example, a study published by Barrera et al. (2002) showed that music therapy had a positive impact and improved the emotional well-being of hospitalized children diagnosed with cancer.¹¹

⁷ Aasgaard, Trygve, *Music Therapy as Milieu in the Hospice and Paediatric Oncology Ward*, in *Music Therapy in Palliative Care: New Voices*, David Aldridge (ed.), Ed. Jessica Kingsley Publishers, London, 1999, pp. 29-43; Evans, David, *The effectiveness of music as an intervention for hospital patients: a systematic review*, in *Journal of Advanced Nursing*, Ed. Wiley Online Library, New Jersey, 2002, vol. 37, pp. 8 –18. <https://doi.org/10.1046/j.1365-2648.2002.02052.x>, date accessed, 03 September 2018.

⁸ Dunn, Kelly, *Music and the reduction of post-operative pain*, in *Nursing Standard*, Ed. Royal College of Nursing, London, 2004, vol. 18, pp. 33–39.

⁹ Gutgsell, Kathy Jo, Schluchter, Mark, Margevicius, Seunghee, DeGolia, Peter A., McLaughlin Beth, Harris, Mariel, Mecklenburg, Janice, Wiencek Clareen, *Music Therapy Reduces Pain in Palliative Care Patients: A Randomized Controlled Trial*, in *Journal of Pain and Symptom Management*, Ed. Elsevier, Amsterdam, 2013, vol. 45, nr. 5, pp. 822- 831.

¹⁰ Krout, Robert E., *The effects of single-session music therapy interventions on the observed and self-reported levels of pain control, physical comfort, and relaxation of hospice patients*, in *American Journal of Hospice and Palliative Care*, Ed. Sage Publications, 2001, vol. 18, nr. 16, pp. 383–390. <https://doi.org/10.1177/104990910101800607>, date accessed 25 August 2018.

¹¹ Barrera, Maru. E., Rykov, Mary H., Doyle, Sandra L., *The effects of interactive music therapy on hospitalized children with cancer: a pilot study*, in *Psycho-Oncology*, Ed. John Wiley & Sons, New Jersey, 2002, vol. 11, pp. 379-388. <https://doi.org/10.1002/pon.589>, date accessed 27 August 2018.

A 2013 study¹² on music therapy for children with cancer presents the diverse methods that can be utilized with this population. The most beneficial procedures are receptive music therapy, improvisational music therapy, re-creative music therapy and compositional music therapy. Receptive music therapy can be used either for a while session, or just for a limited time and is very useful in cases in which the child is very agitated and nervous. This procedure requires the child to listen to relaxing music and it is proven to reduce anxiety. Improvisational music therapy is efficient for children, as it uses playtime and it is a non-threatening way to get small patients to express their emotions. Re-creative music therapy is usually based on songs or fragments of songs that the child is already familiar with, but there are exceptions in which new songs can be used. This procedure is useful for group settings and is beneficial in dealing with integration and socialization issues. Compositional music therapy is used to encourage the expression of emotions and feelings and it can also be a significant way in which to observe how the child is coping with the illness and treatment.

To narrow down the research area for our study, the study on music therapy with children in palliative care¹³ is of even great importance. Even though the methods used in this case are the same as those utilized with children diagnosed with cancer, the most significant difference is the drastic changes that can take place from one session to the next. Given the medical circumstances, children in palliative care may be more uncomfortable and in pain, they might also have less and less energy to engage in musical activities. As a result, music therapy sessions must take into account the physical and emotional aspects of both the child and their family. Out of the four methods used in sessions with children in palliative care, receptive music therapy is especially beneficial, as it promotes relaxation. This method can be implemented using a multi-modal approach¹⁴, with sound, touch and general ambiance.

This article proposes to complement the existing research by providing the results of a trial period in which music therapy was used to help children in palliative care in Oradea, Romania.

Methodology

Over a period of nine months, twenty children benefitted from music therapy sessions, either in a hospital setting or in their homes. In order to measure the impact of the program, the faculty and students involved in the

¹² Dun, Beth, *Children with Cancer*, in *Guidelines for Music Therapy Practice in Pediatric care*, Joke Bradt (ed.), Ed. Barcelona Publishers, New Braunfels, Texas, pp. 290-323.

¹³ Lindenfelser, Kathryn, *Palliative and End-of-Life Care for Children*, in *Guidelines for Music Therapy Practice in Pediatric care*, Joke Bradt (ed.), Ed. Barcelona Publishers, 2013, New Braunfels, Texas, pp. 324-355.

¹⁴ Grocke, Denise, Wigram, Tony, *Receptive Methods in Music Therapy*, Ed. Jessica Kingsley Publishers, London, 2007, pp. 77-79.

program monitored the progress of the children through clinical observation sheets. These surveys were completed before and after each session, to provide a clear picture in regards to the benefits of music therapy in children diagnosed with progressive chronic illness.

The children that took part in this pilot program had ages ranging from two years to eighteen years. Also, out of the group, eleven were boys and nine were girls.

Regarding the diagnosis, nine of the children were in oncology treatment, two were diagnosed with Epidermolysis bullosa and nine were diagnosed with various blood related diseases. All the children had to receive on-going treatment, which impeded them from living normal lives, as most of these children required extensive hospital stays.

The clinical observation sheets took into account three categories: facial expression, behaviour and emotions. The facial expression included the visual component, if the child avoided or not to look at the therapist. Avoidance indicated either shyness or lack of trust. The level of brightness in the eyes was analysed to see if the children were alert and in able to concentrate on the activities initiated during the music therapy session.

Another component observed in this category was the position of the lips, if the corners of the mouth were in a downward position, then the child was most likely sad or upset. If the corners of the mouth were in an upward position, then the child was presumably smiling. The last variable in this category was the position of the head, the options being head held down, to the side, straight or up.

The second category in the clinical observation sheets was behaviour, the components analysed being body language and language. The body language had three options, from avoidance, to acceptance and lastly hugs. This was to determine the level of attachment that the children developed towards the therapist during the sessions. Language was another aspect monitored and children were observed to be in the following categories: avoidance, stubborn silence, words and sentences. At this point it is important to note that smaller children spoke more using just words and were more prone to avoidance or stubborn silence. There were a few exceptions, in which older children were extremely shy in the beginning and displayed a tendency towards stubborn silence.

The last main category was emotions, which were noted with numbers from 1 (very low) to 5 (very high). The emotions examined were joy, peace, agitation, anger, fear, disappointment and hope.

After gathering the information gleaned through the clinical observation sheets, we set out to first analyse the difference between the beginning and the end of the first session, to determine if there were any noted improvements

in the children. Afterwards, we also compared the observations sheets noted during the second session and fifth sessions to evaluate the impact of the music therapy sessions.

Results of the research

The analysis of the data collected in the nine months of music therapy sessions is presented in the following table:

Table 1

Variable	Z	P< 0,05	Average rankings	N.	Sum of rankings
Visual component	-3,16	0,002	1 = 0	N = 0	1 = 0
			2 = 5,50	N = 10	2 = 55
Position of lips	-2,65	0,008	1 = 0	N = 0	1 = 0
			2 = 4,00	N = 7	2 = 2,28
Position of head	-2,86	0,004	1 = 1,5	N = 1	1 = 1,50
			2 = 6,45	N = 10	2 = 64,50
Body Language	-3,16	0,002	1 = 0	N = 0	1 = 0
			2 = 5,50	N = 10	2 = 55
Speech	-2,07	0,03	1 = 4,50	N = 3	1 = 13,50
			2 = 7,17	N = 9	2 = 64,50
Joy	-3,70	0,001	1 = 0	N = 0	1 = 0
			2 = 8,50	N = 16	2 = 136
Peace	-2,74	0,006	1 = 0	N = 0	1 = 0
			2 = 5	N = 9	2 = 45
Anger	-1,85	0,05	1 = 2,50	N = 4	1 = 10
			2 = 0	N = 0	2 = 0
Fear	-2,83	0,005	1 = 8,15	N = 13	1 = 106
			2 = 7	N = 2	2 = 14
Disappointment	-2,12	0,03	1 = 4,5	N = 7	1 = 31,50
			2 = 4,5	N = 1	2 = 4,50
Hope	- 3,87	0,001	1 = 0	N = 0	1 = 0
			2 = 8	N = 15	2 = 120

First Session statistics*

* Even if statistically it is not noticeable, at the patient level, there were some positive modifications that were observed: regarding eye brightness, there was no statistical difference noticed during the first session, in the sense that one child had a noted improvement, while nineteen children were remarked to have stayed the same; with reference to motor function, it was noted that one child was perceived to have improved during the session, while nineteen children stayed the same. As to the component of touch, three children were

observed to have improved during the first session, while seventeen children did not present any difference. In regard to agitation, five children were more agitated after the session, this being explained by their excitement to play and have company; one child was less agitated at the end of the session and fourteen children were perceived to have remained the same.

From a qualitative point of view, we can also state the following changes: from a visual component point of view, at the beginning of the session, twelve out of twenty children avoided looking at the therapist, while at the end of the hour, just two children continued to avoid looking at their therapist.

The position of the lips (if the corners are upward into a smile or downward into a sad expression) indicated that at the beginning of the meeting, seventeen children had the corners of their mouth downward and three children had the corners of their mouths in an upward position. The situation changed at the end of the sessions, when ten children had the corners of their mouth turned upward, indicating a smile.

The position of the head was another indicator measured, with nine children holding their head down at the beginning of the therapy, seven children held their head to the side, one child held his head high and three children held their head in a straight position. At the end of the first session, only three children continued to hold their head down, while eleven held their head straight; three held their head up and another three children held their head to the side.

Avoidance, acceptance and hugs were the three main components that measured the position of the body. In the beginning, eleven children were perceived to manifest avoidance, while eight were accepting and one gave a hug to the therapist. By the end of the session, the situation changed to just four children still appearing to avoid, twelve were accepting and four wanted to give a hug.

The language variable was analysed by taking into account the possibilities of stubborn silence, avoidance of speech, speaking just words or speaking in sentences. At the onset of the sitting, five children demonstrated stubborn silence, six avoided speaking with the therapist, six spoke in words and three spoke in sentences. At the closing of the session, four children maintained stubborn silence, only one continued to avoid speaking, seven spoke words and eight spoke in sentences.

The motor function was observed to see if there was any difference in the activity level of the children, in the cases in which such a thing was possible. We have to take into account the number of children whose illness rendered them immobile. In the beginning, eight children were immobile, while twelve were active, while at the end of the hour, seven children were immobile, while thirteen were active.

Regarding touch, we measured how many children avoided physical contact and how many wished to be touched. At the initiation of the therapy, we

noticed that twelve children avoided being touched and eight children initiated physical contact. The situation at the end of the therapy, the number of children who initiated physical contact grew to eleven.

We have observed that one of the key variables is joy. At the onset, seven children were perceived to have very low joy, three had a low level and ten had a medium level of joy. Interestingly, no children were in the category of high and very high levels of joy. This drastically changed after the session, where just two children maintained a very low level of joy, while five remained with a low level, three at a medium level. The positive outcome was that seven children indicated a high level of joy and three expressed a high level of joy.

Peace was another emotion taken into account, and the beginning analysis showed that four children had a very low level of peace; two indicated a low level, while five were perceived to be at a medium level. A high level of peace was observed in eight children and only one had a very high level of peace. Contrastingly, at the end of the first session, no children were seen to have a very low level of peace, two had a low level and six were placed in the medium range. Nine children were determined to have a high level of peace and three were in the very high category.

Another variable observed was the presence of agitation, which can either be present due to excitement for the music therapy session, which would have a positive connotation. Contrastingly, agitation could indicate a negative element, if it was due to illness, frustration or a general bad mood. The beginning of the first session saw six children with a very low dose of agitation, eight with a low level of agitation and two in the medium range. Just one child was perceived to be in the high agitation category and three in the very high agitation spectrum. After the session, seven children were placed in the very low agitation range, while eight were perceived to have a low level of agitation. Three children were now in the medium range and just two children remained in the high and very high agitation categories.

In reference to anger, most of the children analysed in the pilot program were not perceived to suffer from high level of anger. At the initial interaction, thirteen children indicated a very low level of anger; four were considered to have low feelings of anger, while one child had a high indicator of anger and another two had very high levels of anger. After the session, the situation indicated that fourteen children now had very low levels of anger, while four maintained low feelings of anger. Three children were placed in the medium category and one remained with a high dose of anger. It is to be noted that no children remained in the very high anger range at the conclusion of the therapy.

Given the prognosis of the pilot group, fear is a very important component that was measured during the music therapy program. At the onset of the first session, one child had a very low level of fear, while seven indicated a low level; five were placed in the medium range; two children were perceived

to have a high level of fear and five children were considered to be in the very high fear range. At the end of the therapy, the situation changed, as six children had a very low level of fear, five were placed in the low range; another five children were observed to have a medium extent of fear, and just four children remained in the high and very high category, two in each slot.

Concerning the feeling of disappointment, at the beginning of the therapy, three children had a very low spectrum of disappointment; seven were in the low range, while six were in the medium category and four children were highly disappointed. After the session, the number of children in the very low range increased to five, while in the low range, the number was raised to six. Eight children were now in the medium category and just one in the high range.

Hope was the last variable analysed and the commencement of the hour saw three children with a very low hope; five with low hope, whilst ten were established in the medium spectrum. Just two children had high hopes and no children were placed in the very high hope category. The end of the hour indicated a number of changes, with just one child having very low hope; three were with a low feeling of hope, while seven were located in the medium range. Among the positive outcomes, seven children were now in the high range and two were even in the very high range, a category missing before.

Table 2

Variable	Z	P< 0,05	Average rankings	N.	Sum of rankings
Visual component	-2	0,04	1 = 0	N = 0	1 = 0
			2 = 2,50	N = 4	2 = 10
Eye brightness	-2	0,04	1 = 0	N = 0	1 = 0
			2 = 2,50	N = 4	2 = 10
Position of lips	-2,45	0,01	1 = 0	N = 0	1 = 0
			2 = 3,5	N = 6	2 = 21
Body Language	-2	0,04	1 = 0	N = 0	1 = 0
			2 = 2,5	N = 4	2 = 10
Joy	-2,59	0,01	1 = 0	N = 0	1 = 0
			2 = 4,5	N = 8	2 = 36
Peace	-2,12	0,03	1 = 0	N = 0	1 = 0
			2 = 3	N = 5	2 = 15
Fear	-2,06	0,03	1 = 3	N = 5	1 = 15
			2 = 0	N = 0	2 = 0
Disappointment	-2,26	0,02	1 = 3,50	N = 6	1 = 21
			2 = 0	N = 0	2 = 0
Hope	-2,59	0,01	1 = 0	N = 0	1 = 0
			2 = 4,50	N = 8	2 = 36

Second Session statistics*

*The variables in the table are the ones that are statistically noticeable, so in the qualitative analyses, we will include all that variables that have

significance at the patient level. At this point in the research, four children had passed away and another eight sought treatment in other areas, thus the study continued with eight children.

The first variable, visual component saw a change from the beginning of the session, in which four children avoided looking at the therapist and four did not avoid looking. In the end, all eight children were looking at the therapist.

Regarding eye brightness, before the session started, five children were not perceived to have possessed it, while three did. Afterwards, the number of children without eye brightness decreased from five to one and seven children were noticed to have brighter eyes.

The position of the lips at the beginning of the second session indicated that six children had the corners of the lips downward, while just two had the corners of their lips into an upward position. By the end of the session, all eight children had the corners of their lips in an upward position, indicating varying levels of smiles.

We have observed that the position of the head saw improvements even from the first session, as at the onset of the second therapy hour, just one child held his head down, while another held his head to the side, with the majority holding their head straight. After the second session, not one child was observed to hold his head down, with four holding their head to the side and four holding their head straight.

In reference to body language, the data indicates that in the beginning of the second session, all eight children showed acceptance, while at the end of the session, the group was split into two categories, with four maintaining acceptance, while four decided they wanted a hug.

Another variable analysed was language, the second therapy commencing with one child avoiding communication, five spoke in words and just two communicated in sentences. The situation changed in the end with no child avoiding to speak, thus four talked using just words and another four talked in sentences.

The motor function was not perceived to suffer great modifications, as in the beginning two children were immobile and six were active. In the end, the numbers changed to just one child remaining immobile and seven being active.

Touch was an important factor in determining the trust gained by the therapist during the second session. At the beginning, three children avoided touch, while five indicated that they wished to be touched. By the time the session ended, all eight children indicated that touch was a welcome contact.

On the subject of joy, at the initiation of the second session, two children had a very low level of joy; five were placed in the medium range and just one child indicated a high level of joy. Following the music therapy, no children remained in the low level; five maintained their medium joy status, while two were perceived to be in the very high joy level.

The peace component also saw an improvement, due to the fact that three children had a low spectrum of peace; one child was considered in the medium category and four had a high peace level in the outset of the second session. Afterwards, no children remained in the low range, five were considered in the high peace level and one in the very high feeling of peace spectrum.

In regard to agitation, there were slight modifications. The second session saw six children with a very low threshold of agitation and two in the medium level. By the time the hour was finished, six children maintained their very low agitation status, one was placed in the low agitation category and another remained in the medium range.

The category of anger did not suffer major shifts, from six children feeling very low anger at the beginning of the second session, the number increased to seven by the end. Also, at the beginning, one child was in the low anger category and one on the medium category, but by the completion of the session, just one child remained in the low anger category and none in the medium one.

Fear was a variable in which we observed more changes, the diagnosis and type of treatment also influencing this component. At the onset of the second session, two children had very low fear, another two experienced low fear, one child was in the medium range and three children had a high level of fear. After the session, the number of children with very low fear increased to five, while one child had low fear and two were in the medium range. No children remained in the high level of fear range.

In regards to disappointment, at the induction of the second session, two children had a very low disappointment level, two were in the medium range; three children had a high level of disappointment and one was considered to have a very high level of disappointment. The termination of the session meant that two children maintained a very low disappointment level, the number of children with a low level increased to four and four were in the medium category. No children remained in the very high disappointment spectrum.

The last variable of hope saw an improvement during the second session. In the beginning, one child had very low hope, another was in the low category and six were placed in the medium range. After the session, seven children were placed in the high hope category and one even transitioned into the very high hope level. No children remained in the very low, low, or medium ranges.

Table 3

Variable	Z	P< 0,10	Average rankings	N.	Sum of rankings
Position of head	-2,04	0,04	1 = 0	N = 0	1 = 0
			2 = 3	N = 5	2 = 15
Agitation	+ 2,27	0,02	1 = 3,50	N = 6	1 = 21
			2 = 0	N = 0	2 = 0

Comparison between the beginning of the first session and the beginning of the second session*

* These were the two statistically noticeable variables, but as we notice in the qualitative analysis, all variables saw improvements. The aim was to analyse if the benefits achieved in the first session were maintained until the next music therapy session

Table 4

Variable	Z	P< 0,10	Average rankings	N.	Sum of rankings
Visual component	-1,73	0,08	1 = 0	N = 0	1 = 0
			2 = 2	N = 3	2 = 6
Eye brightness	-1,73	0,08	1 = 0	N = 0	1 = 0
			2 = 2	N = 3	2 = 6
Position of lips	-2	0,04	1 = 0	N = 0	1 = 0
			2 = 2,5	N = 4	2 = 10
Joy	-1,84	0,06	1 = 0	N = 0	1 = 0
			2 = 2,50	N = 4	2 = 10 (80%)
Hope	-2,12	0,03	1 = 0	N = 0	1 = 0
			2 = 3	N = 5	2 = 15 (100%)

Fifth Session Statistics*

* Due to the fact that the number of children who benefitted from 5 or more music therapy sessions decreased to five children (a few children passed away during the program and some were moved to other hospitals in the country for the rest of their treatment), we increased the threshold of error to 10%.

Also, as in the last two sessions analysed, the five variables noted in the table are the ones that were statistically noticeable, but in the qualitative analysis, we can note the positive outcomes at the patient level.

In the beginning of the fifth session, three children avoided visual contact, while two welcomed it. By the end of the session, all five children-maintained eye contact with the therapist.

The perceived eye brightness changed from four children that did not manifest it at the onset to four that did exhibit eye brightness and only one that continued without it.

The position of lips also saw an increase from one child out of five having the corners downward at the beginning to all five having the corners of their mouth upward by the end of the session. The four remaining children maintained their smile during the session.

In regards to the position of the head, at the induction of the fifth session, two children held their head down, one held his head high and two had their head held straight. After the session, no children held their head down, two held it high and three held their head straight.

The body language of the children at the starting point of the hour was as follows: two children indicated avoidance, one child was accepting and two children wanted a hug. At the end, no children displayed an avoidance attitude, two children were accepting and three wanted to hug the therapist.

With respect to language, interestingly two children indicated stubborn silence at the beginning, one child avoided speaking and two spoke in sentences. Afterwards, no children displayed stubborn silence or avoidance, one child speaking using words and the remaining four speaking in sentences.

The motor function also saw improvement, from two children immobile and just three active at the onset of the session, to all five children active after the end of the music therapy hour.

The variable of touch was also observed, with two children avoiding and three seeking touch at the beginning of the session. The situation at the end of the session changed, with just one child avoiding and four seeking to be touched.

We found that one of the key components is joy, as also indicated in the fifth session analysis. At the commencement, two children had a very low level of joy, another two showed a low level and just one child displayed a high dose of joy. After the session, no children remained in the very low and low ranges, with three children moving to the medium category and two in the very high joy spectrum.

Peace was also surveyed in the fifth session and we noticed that in the beginning, one child had a very low peace level, two were in the medium range and the other two were in the high category. At the termination of the

therapy, the data indicated that no children remained in the very low levels, as two were placed in the medium range, two remained in the high category and one child displayed a very high peace level.

Concerning the variable of agitation, all five children were initially placed in the very low threshold, but by the end of the session, just four were maintained in the same category, as one child changed to the very high level.

In relation to anger, there were no changes during the session, as all five children displayed from beginning to end a very low level of anger.

The variable of fear was observed as following: at the start of the music therapy, two children had a very low fear, one was placed in the low category, one child had a medium relation to fear and one had a very high fear level. After the session, three children had a very low fear; one remained in the low category and one child in the medium one.

Disappointment at the beginning of the fifth session was distributed between one child in the very low level and one child with low disappointment, one in the medium range and two children in the high category. The termination of the session saw some changes, as one child remained in the very low level, three were in the low category and one in the medium level. No children remained in the high category of disappointment.

Another important variable is hope, and in the fifth session, the onset saw one child with a very low level of hope, two with low hope, one child in the medium category and one child with high hope. After the session, no children remained in the very low and low ranges. Two children were in the medium category, one child in the high hope level and two in the very high hope category.

Table 5

Variables	rho	P
Visual/ eye brightness	1	0,001
Visual/ position of lips	0,51	0,02
Visual/ body language	0,69	0,01
Visual/motor function	0,46	0,04
Visual/joy	0,65	0,002
Visual/fear	-0,58	0,008
Visual/ disappointment	-0,78	0,001
Visual/hope	0,54	0,01

Eye brightness/ position of lips	0,51	0,02
Eye brightness/ body language	0,69	0,01
Eye brightness/ motor function	0,46	0,04
Eye brightness/joy	0,65	0,002
Eye brightness/fear	-0,58	0,008

THE IMPACT OF MUSIC THERAPY SESSIONS ON CHILDREN DIAGNOSED...

Eye brightness/ disappointment	-0,78	0,001
Eye brightness/hope	0,54	0,01

Position of lips/touch	0,51	0,02
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Position of head /speech	0,51	0,02
Position of head / motor function	0,51	0,02
Position of head / joy	0,70	0,001
Position of head /hope	0,56	0,01

Body Language/touch	0,52	0,01
Body Language/joy	0,70	0,001
Body Language/fear	-0,56	0,01
Body Language/disappointment	-0,65	0,002
Body Language/hope	0,54	0,01

Speech/joy	0,43	0,05
Speech/hope	0,52	0,01

Motor function/disappointment	-0,48	0,03
Motor function/hope	0,52	0,01

Touch/joy	0,65	0,002
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Joy/peace	0,54	0,01
Joy/fear	-0,54	0,01
Joy/ disappointment	-0,54	0,01
Joy/hope	0,72	0,001

Peace/agitation	-0,72	0,001
Peace/anger	-0,75	0,001
Peace/fear	-0,54	0,01

Agitation/anger	0,79	0,001
Agitation/fear	0,61	0,005
Anger/fear	0,63	0,003

Fear/ disappointment	0,66	0,002
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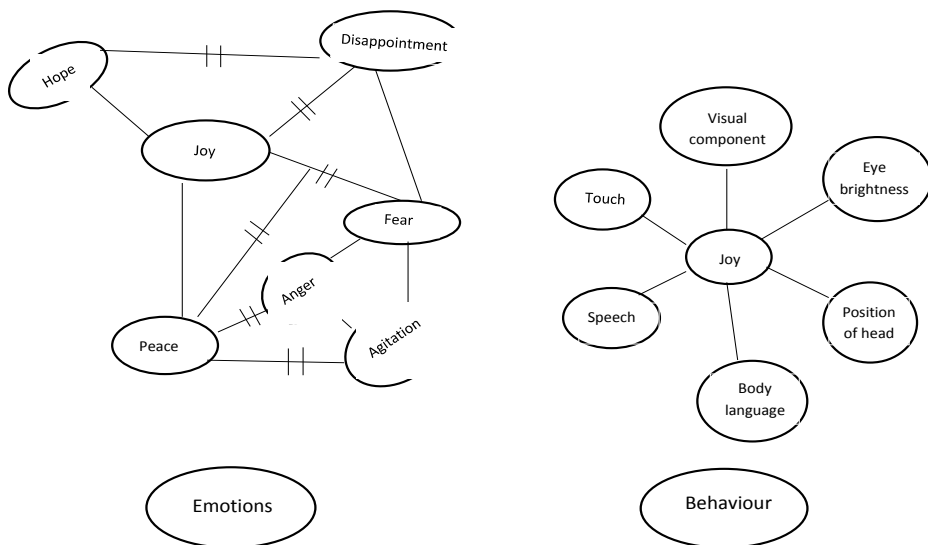
Disappointment/hope	-0,60	0,005
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Bivariate correlation – phase 1

Another important factor analysed was the correlation between items, to determine if the therapy has an impact on two items at the same time. As seen in table 5 and in figure 1, regarding emotions, there is a triad that formed between fear, anger and agitation, meaning that if either of these emotions suffers a change, then the other two emotions will also be affected. For the music therapy sessions, this is a significant finding, because if a child's level of fear decreases, then his anger and agitation will also decline.

At the other side of the spectrum, we can observe that the component of joy has a direct impact on the visual component, eye brightness, touch, speech, position of head and body language. This means that increasing the level of joy is paramount to a child's well-being and should be at the center of music therapy sessions. Given this information, it is encouraging to see that even after the first session, the statistics indicate a significant increase in the levels of happiness.

Figure 1



Conclusions:

The results of the music therapy sessions administered to twenty children diagnosed with progressive chronic illness indicate that there were positive outcomes to these sessions and that they should continue and be extended to more children and in more parts of the country.

Among the most significant findings of this research is that music therapy had an important impact on increasing the level of happiness in these children, which in turn elevated and influenced other key components. Also, after just one session, the majorities of children experienced less fear and anxiety, were more communicative and had better social skills. This finding indicates that music therapy can be a powerful tool that can be used to address emotional, behavioural and physical needs of children diagnosed with serious illnesses.

The limitations of this study consist in a relatively small number of children and also the fact that the research was done in a single location. Another constraint was the impossibility in some cases to establish a regular music therapy schedule, due to the fact that the treatment sometimes necessitated the children to be moved to other hospitals in the country or abroad.

In the future, research could be extended to a larger number of children and more locations throughout the country, as this would offer a clearer result on the impact of music therapy on children diagnosed with progressive chronic illnesses.

From the data collected from this pilot program, the results are encouraging and indicate a necessity to continue and develop this program further.

REFERENCES

- Aasgaard, Trygve, *Music Therapy as Milieu in the Hospice and Paediatric Oncology Ward*, in *Music Therapy in Palliative Care: New Voices*, David Aldridge (ed.), Ed. Jessica Kingsley Publishers, London, 1999, pp. 29-43
- Barrera, Maru. E., Rykov, Mary H., Doyle, Sandra L., *The effects of interactive music therapy on hospitalized children with cancer: a pilot study*, in *Psycho-Oncology*, Ed. John Wiley & Sons, New Jersey, 2002, vol. 11, pp. 379-388. <https://doi.org/10.1002/pon.589>, date accessed 27 August 2018.
- Berger, Dorita S., *On Developing Music Therapy Goals and Objectives*, in *Voices, A World Forum for Music Therapy*, March 2009, vol. 9, nr. 1 <https://doi.org/10.15845/voices.v9i1.362>, date accessed: 07 September 2018
- Dun, Beth, *Children with Cancer*, in *Guidelines for Music Therapy Practice in Pediatric care*, Joke Bradt (ed.), Ed. Barcelona Publishers, New Braunfels, Texas, 2013, pp. 290-323.
- Dunn, Kelly, *Music and the reduction of post-operative pain*, in *Nursing Standard*, Ed. Royal College of Nursing, London, 2004, vol. 18, pp. 33–39.

- Evans, David, *The effectiveness of music as an intervention for hospital patients: a systematic review*, in *Journal of Advanced Nursing*, Ed. Wiley Online Library, New Jersey, 2002, vol. 37, pp. 8 –18.
<https://doi.org/10.1046/j.1365-2648.2002.02052.x>, date accessed, 03 September 2018.
- Grocke, Denise, Wigram, Tony, *Receptive Methods in Music Therapy*, Ed. Jessica Kingsley Publishers, London, 2007.
- Gutgsell, Kathy Jo, Schluchter, Mark, Margevicius, Seunghee, DeGolia, Peter A., McLaughlin Beth, Harris, Mariel, Mecklenburg, Janice, Wiencek Clareen, *Music Therapy Reduces Pain in Palliative Care Patients: A Randomized Controlled Trial*, in *Journal of Pain and Symptom Management*, Ed. Elsevier, Amsterdam, 2013, vol. 45, nr. 5, pp. 822- 831.
- Krout, Robert E., *The effects of single-session music therapy interventions on the observed and self-reported levels of pain control, physical comfort, and relaxation of hospice patients*, in *American Journal of Hospice and Palliative Care*, Ed. Sage Publications, 2001, vol. 18, nr. 16, pp. 383–390.
<https://doi.org/10.1177/104990910101800607>, date accessed 25 August 2018.
- Lindenfelser, Kathryn, *Palliative and End-of-Life Care for Children*, in *Guidelines for Music Therapy Practice in Pediatric care*, Joke Bradt (ed.), Ed. Barcelona Publishers, New Braunfels, Texas, 2013, pp. 324-355.
- Nordoff, Paul, Robbins, Clive, *Creative Music Therapy: A Guide to Fostering Clinical Musicianship*, 2nd Edition, Ed. Barcelona Publishers, Gilsum, NH, 2007.
- Reid, Philippa, *Music Therapy for Children and Adolescents Diagnosed with Cancer*, in *The Oxford Handbook of Music Therapy*, Oxford University Press, London, 2016, pp. 66-89.