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Editorial

Science and Politics in the New Year

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These days it is extremely hard for science editors to withstand from making political statements. The globe itself, the world we know, is under fire. The science community is struggling to find answers to those multiple threats endangering our species.

Can music work therapeutically here? If so, as a journal that supports Music and Medicine we should offer our share in seeking solutions, or at least in triggering necessary discussions about music´s potential as a healing intervention to charge against anxieties, depressions, desperations, sufferings and social isolation, and perhaps most importantly to align our work against proactive means to address many more issues hindering a global response to that which poses a unique global threat. A first step could be the fostering of communication. As we all know musical language is understood everywhere by everyone. Looking at speechless politicians locked up in isolated group- we may consider our unique way of thinking, realizing that music might be language AND message at the same time: we are living in one world on one planet.

Looking on articles published in Music and Medicine since its implementation in 2009 we find that medical-music global communication is working. Successfully fostering intercultural, international, global exchange of ideas, concepts, experiences and data using music both as an intervention and a language seems to be something we all understand.

Here is the link to politics. Because politics (ancient Greek: Politika´ "issues of the community") implies that those regulations governing our social communities based on social action are determined through decisions and mechanisms implemented and followed by community members. This sounds easier than it is actually, in reality, occurring - as we all know.

As science today is political and must be political in questions of global survival there is of course a dark side of this relationship. Elizabeth Suhay has in detail, elaborated on the political influence on science, which, we all agree (and we do hope so) should be value-free, objective and independent from political influence [1]. Governments have always funded, managed, and consumed research and scientific knowledge. Maybe the example with highest impact of such political influence is the development of the atomic bomb.

Art, especially music, can profoundly influence politics. A most recent example is on display at 2019 World Economic Form in Switzerland, where Mehdi Ghadyanloo´s mural displays a point that invites attendee´s attention as he leads their thinking toward specific political objectives, to the good or the bad, as he states that "propaganda is messaging created by artists..." [2].

Music was used as an instrument to manipulate people and communities from the early beginning of human civilization. Military music to direct soldiers may be just one prominent example.

But we have no other chance. WE, as citizens have to take care of the politics governing our future on earth. The science of therapeutic music intervention should be able to contribute. Thus, the editors of Music and Medicine do invite you to join and contribute your articles. Enhancing our common goal:

Global discussion about Music and Medicine. Let´s create a choir of global voices, crossing borders and joining forces [3].

In this issue *The Use of Music in the Chronic Pain Experience: An Investigation into the Use of Music and Music therapy by Patients and Staff at a Hospital Outpatient Pain Clinic* by Hilary Moss examines the use of music in the chronic pain experience. The themes this study uncovers through quantitative and qualitative analyses provide rich material for clinicians and practitioners who are seeking to better understand the role of music therapy in a hospital out-patient pain department.

The next two articles will likely be of intense interest to music therapists and those who institute music medicine programs throughout our international community. In a two part sequence, Virginia Cierniak educates our readership about the 'El Sistema' music-education program, founded in Venezuela in 1975. This forum has become a movement. In

Part I: Community Music Therapy and El Sistema: Empowerment Needs of Individuals and Communities Facing Socioeconomic Marginalization, music is described and

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realized as an accessible tool that can foster change within people and societies. Community Music Therapy (CoMT) and *El Sistema*[*] compares the empowerment needs of individuals and communities facing socioeconomic marginalization.

In *Part II: Community Music Therapy and El Sistema: A Multiple Case Design Study Reflecting Music's Empowerment in Marginalized Communities,* Cierniak presents the result of her study, incovering the salient elements and divergences between El Sistema and CoMT. Understanding the essential role of the music in these 2 systems may further advance how we implement programming in hospital communities, clinics and educational institutions where music is most needed.

Understanding the disease manifestations of famous musicians has been a unique topic of interest in our journal. *The Myth of Schubert's Syphilis: A Critical Approach***,** Eva Cybulska does not disappoint. In a critical examination of the diagnosis of syphilis in Schubert's case, she challenges the diagnosis from an epistemological point of view.

In the *Use of Acoustically Modified Music to Reduce Auditory Hypersensitivity in Children,* Jay Lucker describes his Listening Program, which is designed to help children with their auditory prciessing capacity. This may be of great importance to those treating children on the spectrum or even those who have difficulty with speech and language processing.

While the focus of pain tends to examine music's involvement in chronic and acute pain applications, in *Efficacy of Pain Management: Integration versus Distraction,* Joanne Loewy addresses procedural pain and takes a position against the usual recommendation of 'distraction'-by supporting an integrative approach to the way we implement music/team-oriented approaches.

Finally, the Editors are pleased in 2019 to begin the start of a new tradition entitled: *Rounds Corner*. Tucking itself in the end of each journal, *Rounds Corner* will serve to gather various members of the team, and provide an inside perspective on a pertinent issue related to treatment strategies involving music and medicine. We hope this new section will strategize our overriding goal of blending musical ideas in meaningful ways for practitioners of all disciplines.

We begin the inaugural Rounds Corner with a most intriguing article by Mike von der Nahmer. His rounds is entitled, *Rounds Corner-A Therapist Speaks Musikalisierung: How a Despondent Mind Shapes Thought into Music: A young boy's journey & music therapy from an insider's point of view* provides a generous and poetic peak into our witnessing the journey of a 'wounded healer'. This piece may remind all of us how resilience and creativity can be enhanced when we as professionals have created road maps for ourselves. In an age where depression and suicide are on the rise, von der Nahmer reminds us how depression may be both a blessing and a curse, but nevertheless can steer us to become more astute clinicians. What a blessing this piece is, and certainly a wonderful start to our Rounds Corner which will likely unravel many prevalent aspects of treatment in the future as we invite contributors from all perspectives; patients, doctors, therapists, social workers, music therapists, physical therapists etc.

Happy New Year to all!

References

1. http://oxfordre.com/communication/view/10.1093/acrefore/9780190228613.001.0001/acrefore-9780190228613-e-107
2. https://www.weforum.org/agenda/2019/01/a-conversation-with-world-renowned-muralist-mehdi-ghadyanloo/
3. 3.*Global Voices: Crossing Borders, Joining Forces*. Joined Conference NAMT and CAMT, Toronto 1993

Full-Length Article

The Use of Music in the Chronic Pain Experience: *An Investigation into the Use of Music and Music therapy by Patients and Staff at a Hospital Outpatient Pain Clinic*

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Abstract

This study uses mixed methodology research to examine the use of music in the chronic pain experience. One hundred and seven adult patients attending an outpatient pain clinic at a general hospital completed a patient survey. 91% rated music as somewhat important to them, 69% benefit from music listening and 43% changed their use of music due to chronic pain. 56% of respondents had an interest in availing of music therapy as part of their treatment. Three themes found in the qualitative results (music for relaxation, positive response to music and music for coping) corresponded with the highly rated reasons for listening to music in the quantitative survey (enjoyment, relaxation and tension relief). Music listening was more common than active participation in music.

Seven staff members completed surveys on their use of music and thoughts on music therapy in this setting. Staff rated music as very beneficial for people with chronic pain and 100% saw a role for music therapy in the treatment of patients with chronic pain. This study is one of few to map how people with chronic pain use music to self-care and to explore the role of music therapy in a hospital out-patient pain department. It offers potential for music therapy to be offered as a non-pharmacological intervention to assist people in developing music-based resources and strategies for managing chronic pain. Further investigation is recommended.

Keywords*: chronic pain, music, music therapy, outpatient.*

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Introduction

Chronic pain can be defined as "persistent and unremitting" pain which is present for more than six consecutive months [1]. It is a worldwide health problem and accounts for one of the main reasons for seeking medical care [2]. It is complex, multidimensional, and has experiential features. These include biological, psychological, sociological, and spiritual factors that modulate the pain threshold and its intensity.

This research is a mixed methodology study to examine the use of music in the chronic pain experience. The potential benefits of music and music therapy as a non-pharmacological intervention in the management of chronic pain in Ireland are considered.

In 2006, Fullen, Hurley, Power, Canavan and O'Keeffe [3] described the need for national strategies for chronic pain management and found the facilities for treating patients with chronic pain in Ireland to be lacking. Chronic Pain Ireland, an organization who advocate for better awareness, education and recognition of chronic pain, state that 42% of people with chronic pain think that others doubt the existence of their pain and that twenty-one percent stated that the pain was so intense they wanted to die [4]. It seems imperative that new ways of supporting people with chronic pain are developed. This research investigates how people with chronic pain currently access music and the potential for use of music interventions in the treatment of outpatients with chronic pain.

Music, its meaning and function, can be highly personal. Perceptually, pain and music are complicated processes that involve different domains and are handled by many different areas of the brain [5]. The potential impact of pain on the physical, emotional, cognitive/behavioral, social and spiritual domains has been well-outlined. Physically, pain can lead to increased blood pressure and pulse, increased rate of respiration, muscle tension and disruptions in sleep. Pain is an emotional experience and can lead to anxiety, fear and distress. Psychological disorders, such as major depressive disorder, have been linked to chronic pain [6- 8]. Chronic pain has no apparent biological value, can occur for no biological reason and persists beyond the point that healing would be expected [9]. Feelings of despair or hopelessness in a person with chronic pain are unsurprising when there might be no known cause or means of managing the pain. Regarding

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Dr Hilary Moss | Address: Irish World Academy of Music and Dance, University of Limerick, Limerick, Ireland | E-mail: hilary.moss@ul.ie| COI statement: The authors declared that no financial support was given for the writing of this article. The authors have no conflict of interest to declare. Ethical approval for this study was obtained by the University Hospital Limerick Ethics Board

cognitive needs in people with chronic pain, impairments in memory and attention, and changes in the individual's perception of pain are noted. Quality of life may also be reduced, as pain disrupts social engagement, relationships, employment status and daily activities [6].

There is evidence to show that music can reduce pain perception and intensity (5, 7, 10, 11). Mechanisms behind this analgesic effect are believed to be cognitive and emotional with music being an environmental stimulus that can modify pain perception by inducing the release of endogenous opioids which produce analgesia by activating opioid receptors. Studies have shown that music can modulate emotion and mood, reduce anxiety and pain, and induce dopamine release, which plays a central role in analgesia [5, 8, 11].

Studies on the effects of music listening on pain seem to be more prevalent in the literature than studies on the effects of music therapy on pain [12]. Music may have the potential to be developed as an effective self-management treatment, offering hope and a feeling of control to people who may feel despair. Emotional stress and negative affect can decrease pain threshold. Strategies that give hope and a means of coping may increase pain threshold and lead to a reappraisal of pain.[15].

There seems to be a consensus in the literature with positive hypotheses and outcomes for the use of music in the treatment of pain. It appears that music has the potential to be a useful non-pharmacological intervention in the management of pain. The literature indicates strongly that music can influence perception and intensity of pain by affecting the individual physically, emotionally, cognitively and neurologically. In the context of outpatients with chronic pain, although there is little literature written on this specific population, there seems to be possibility for the inclusion of music interventions in a pain management programme. Overall, however, studies to date are relatively scarce with small sample sizes.

This study builds on previous work in this area and asks the following research question: How do patients with chronic pain use music and is there potential for music therapy for this population?

Materials and methods

Setting

This study was conducted at the Pain Clinic of the *University Hospital Limerick* which serves a population of 340,000 people in the mid-west region of Ireland. The study was approved and conducted in accordance with the ethical standards of the University of Limerick Ethics Committee. All patients received standard medical care throughout the study.

Method

A mixed method study using survey method was selected, using both qualitative and quantitative questions (see Appendix One for examples of both patient and staff surveys). Both forms of data were collected concurrently in a single phase. The survey was designed in consultation with a pre-existing questionnaire as used in a study by Mitchell et al. (2007) which looked at the effects of music listening on chronic pain [14]. The survey for patients had fifteen questions. An additional short survey was designed to gather staff perceptions of music and chronic pain. This was anonymised, distributed by email and once completed, left at an allocated drop off point at the nurses' station. The survey was piloted on a sample of the target population at the pain clinic. Once piloted and adjusted, an information leaflet was distributed to patients attending the outpatient pain clinic by the nurse. If consented to partake, the survey was filled out in the waiting area and handed it back to the nurse upon completion.

Participants

Convenience sampling was used and a sample size of 100 adult patients was determined as it is sufficient to detect a moderately strong correlation of 0.3 as statistically significant at a 5% level of significance. All outpatients at a weekly pain clinic were invited to complete the survey over five weeks. 107 patients completed the survey.

Inclusion criteria were: 1. All adult patients referred to the Pain Clinic between September and December 2017 2. Ability to read English; 3. Being over 18 years of age. The exclusion criteria were: 1. Poor English comprehension; 2. Medical or psychiatric disorders that would impact on the patient's ability to complete the survey.

Data Analysis

Qualitative and quantitative strands were analysed separately and then merged to compare results. This convergent parallel design was chosen as it can provide a more complete understanding through using the strengths of both quantitative and qualitative data [15]. The seven steps for convergent mixed methods design were followed, namely (1) Collect the quantitative and qualitative data concurrently (2) Independently analyse both sets of data using best suited approaches (3) Decide how data sets will be compared (4) Decide what information will be compared (5) Complete analyses to produce needed comparative information (6) Represent comparisons (7) Interpret how the combined results answer the research questions.

For the quantitative results, categorical data were described using counts and percentages. Continuous data that approximated a normal distribution were described using means and standard deviations. Skewed data was described using medians and interquartile ranges. Differences in age and reason to listen to music by demographic variables were tested using independent sample t-tests or the Mann-Whiney U test where appropriate. The association between categorical variables was tested using the chi-squared test.

Cohen's d was used to measure the size of the effect for continuous variables across two groups, with d=0.2 representing a small effect, 0.5 medium and 0.8 large. Eta^2 was used to measure effect size for 3 or more groups, where 0.01, 0.06 and 0.14 represent a small, medium and large effect. Cramer's V was used to measure the size of the effect between categorical variables, with V= 0.1, 0.3 and 0.5 for a small, medium and large effect respectively.

A 5% level of significance was used for all statistical tests with no adjustment made for multiple testing. All statistical analysis was undertaken using SPSS Version 22.

A full summary of measures used in the survey are included in Appendix Two.

The qualitative data was analysed using thematic analysis [16]. Merged results were compared with the research questions and assessed to see if they were congruent or divergent. Side-by-side comparison for merged data analysis was used at this stage and results were presented in a discussion format [15].

Results

Quantitative Results

The respondents were 63 females (58.9%) and 43 males (40.2%), with one respondent not specifying gender. The mean age of respondents was 53 years, with a range of 25 to 84 years and two respondents not specifying their age. The mean age of female respondents was 52 years with an age range of 26 to 84 years. The mean age of male respondents was 55 years with an age range of 25 to 79 years. The majority of respondents were married (*n*=62, 57.9%) or single (*n*=20, 18.7%) and seventy were educated to secondary school level (65.5%).

Quality of life and health

Respondents were asked to rate their quality of life on a five-point scale (very poor, poor, neither good nor poor, good or very good). The majority of respondents rated their quality of life as good (*n*=34, 31.8%) or poor (*n*=26.2, 26.2%) The average rating was neither good nor poor. Health satisfaction was rated on a similar five-point scale ranging from very dissatisfied to very satisfied. Most respondents were dissatisfied with their health (*n*=45, 42.0%) or neither satisfied nor dissatisfied (*n*=26, 24.3%).

The extent to which physical pain prevents a respondent from doing what they need to do was also rated on a 5-point scale (not at all, a little, a moderate amount, very much, an extreme amount). Over half of the respondents (*n*=54, 50.5%) said pain very much prevented them from doing things with twenty-nine percent (*n*=31) being affected a moderate amount.

Frequency of music listening and importance of music

Two questions were asked in relation to how often respondents listened to music. Firstly, a five-category rating scale for frequency was given and then respondents were asked to write the number of hours spent listening per day. The results from the first question are displayed below (see Table 1).

Table 1. *Frequency of music listening*

Frequency	All respondents	Female respondents	Male respondents
Not very often	15.9% (*n*=17)	14.3% (*n*=9)	18.6% (*n*=8)
Some days	20.6% (*n*=22)	19.0% (*n*=12)	23.2% (*n*=10)
Most days	33.6% (*n*=36)	33.3% (*n*=21)	32.6% (*n*=14)
Once a day	5.6% (*n*=6)	4.8% (*n*=3)	7.0% (*n*=3)
Often as possible	22.4% (*n*=24)	25.4% (*n*=16)	18.6% (*n*=8)
No response	1.9% (*n*=2)	3.2% (*n*=2)	0% (*n*=0)

The greatest percentage of respondents (33.6%) can be seen in the table above as listening to music most days. This is true across gender also (F=33.3% and M=32.6%). A further 28% listen to music once a day or more. The number of hours on average for listening to music per day ranged between zero and twelve hours. 84 respondents gave a numerical figure, 9 respondents described their listening habits in words (e.g. "as much as I can", "varies" or "night time") and fourteen respondents did not answer. The descriptive responses were omitted from further analysis. The mean number of hours spent listening to music was two hours. There was a small difference noted in the average hours spent listening between the genders (F=2.1hrs, M=1.9hrs). Over half of the respondents (55.9%) reported listening to more than an hour of music per day.

The survey also asked respondents to rate how important music is to them. A 4-category rating scale was used to capture this, and one hundred and seven responses were obtained. The results are presented below (see Table 2).

Table 2. *Importance of music*

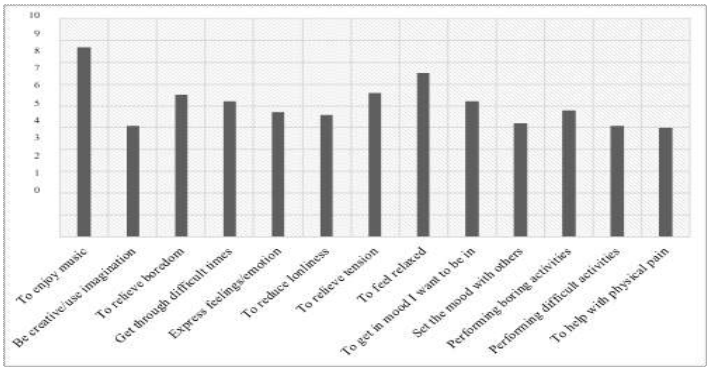
Importance	All respondents	Females	Males
Not at all important	9.4% (*n*=10)	8.0% (*n*=5)	11.6% (*n*=5)
A little important	**37.4% (*n*=40)**	33.3% (*n*=21)	**44.2% (*n*=19)**
Quite important	30.8% (*n*=33)	**34.9% (*n*=22)**	25.6% (*n*=11)
Very important	22.4% (*n*=24)	23.8% (*n*=15)	18.6% (*n*=8)

Most respondents (37.4%, *n*=40) rated music as a little important in their lives with a further 53 % (*n*=57) rating music as more important than this. Overall females rated music as more important than males with 60% (*n*=37) of females rating music as quite or very important compared to 44% (*n*=19) of males. Ninety one percent rated music as somewhat important to them.

Reasons for listening to music

Participants were asked to rate the reasons why they listen to music. 13 options were given with a rating from 0 to 10 in a matrix format. The mean ratings for each reason are presented below (see Figure 1).

Figure 1. *Reasons for listening to music*



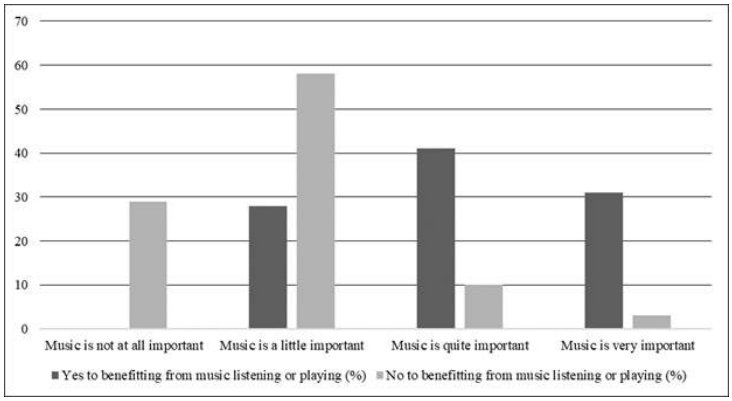
The highest rated reason for listening to music was "to enjoy music" with a mean rating of eight point seven (*n*=82, SD=2.0). This was followed by "to feel relaxed" (7.5, SD=2.8), "to relieve tension" (6.6, SD=3.1) and "to relieve boredom" (6.5, SD=3.3). "To help with physical pain" was the reason with the lowest mean score (5.0). The mode score for this reason was 0 (*n*=16) and 10 (*n*=16) with a standard deviation of three point eight. The largest disparity between the genders were in "to be creative/use my imagination" (F=5.3, M=4.4) and "to set the mood with others" (F=5.4, M=4.5). Eleven respondents (10.3%) left this question completely blank and forty-eight respondents (44.9%) had the matrix fully filled.

Playing, benefitting from and accessing music

In addition to questions modelled on the Mitchell et al. survey, questions were included to investigate whether respondents play or sing, if they benefit from music playing or listening, and if pain has changed the way they access music [15]. 12 % (*n*=23) of respondents answered yes to playing an instrument or singing. 16 respondents reported that they sing while nine play an instrument (two doing both).

69% percent (n=74) of respondents find they benefit in some way from music listening or playing. A higher percentage of females (75.4%) find they benefit from music than males (62.7%). Seventy respondents chose to comment further on how they benefit. These findings are presented with the qualitative results. Interestingly, those who said "yes" to benefitting in some way from music listening or playing, had a higher rating of personal importance of music. This can be seen below in Figure 2.

Figure 2. *Personal importance of music in relation to yes/no respondents*



Participants were next asked to rate if chronic pain has changed the way they access music on a five-point scale ranging from not at all to an extreme amount. It was found that forty-eight percent stated that it had not changed their access while forty-six percent found it had. Seven respondents chose not to answer.

Interest in Music Interventions

To assess the potential for music interventions within the outpatient pain clinic setting, participants were asked about their interest in availing of music therapy or partaking in a choir for people with chronic pain. A short definition of music therapy was given as follows; "Music Therapy is the use of music to accomplish goals (such as relaxation, emotional expression or interaction) within a therapeutic relationship with a trained music therapist". Participants were then asked to rate their interest on a 5-point scale. The results are presented below (see Table 3).

Table 3. *Interest in Availing of Music Interventions*

Interest	MT (all)	MT (f)	MT (m)	Choir (all)	Choir (f)	Choir (m)
Not at all	25.2%	23.8%	27.9%	61.7%	63.5%	58.1%
A little interested	16.8%	20.6%	11.6%	8.4%	6.3%	2.3%
A moderate amount	18.7%	17.4%	18.6%	5.6%	6.3%	11.6%
Very much interested	20.6%	22.2%	18.6%	7.5%	9.5%	4.7%
Unsure	12.2%	8.0%	18.6%	11.2%	6.3%	18.6%
Unanswered	6.5%	8.0%	4.7%	5.6%	8.0%	4.7%

The results show 56% of respondents as having an interest in availing of music therapy as part of their treatment while only twenty-one percent of respondents would be interesting in partaking in a choir. Male respondents showed lower levels of interest and higher levels of uncertainty in availing of music interventions. 60% of female respondents were interested in music therapy compared to 49% percent of male respondents. Of those who expressed an interest in music therapy (n=60) 97% percent had rated music as somewhat personally important (a little/quite/very important).

Staff Survey

There were 7 responses to the staff survey, two doctors, four nurses and one administrator (F=5, M=2). Similar to the patient survey, a five-point scale was used to measure personal importance of music. The average rating for staff was 4. It was found that half of staff currently use music in the workplace (in the office, during procedures and in theatre). Staff were also asked if they thought music listening is of benefit to patients with chronic pain and if they thought playing music or singing could be of benefit to patients with chronic pain. For both questions a 5-point rating scale was used ranging from not beneficial to very beneficial. The mean rating for both questions was five (very beneficial).

Finally, staff were given a brief definition of music therapy ("Music Therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a trained therapist") and asked if they see a role for music therapy in the treatment of patients with chronic pain. One hundred percent of respondents answered yes. Two respondents chose to comment at the end of the survey. One said, "I see a role in preparing patients for consultation (among others)" and the other said "Music lifts the soul, it can evoke many emotions, it can take you to another place, when listening to calm, melodic music the body relaxes".

Qualitative Results

Three questions in the patient survey gathered open responses. The first question asked in what way respondents felt they benefitted from music listening or playing, the second asked whether respondents felt that music has helped in coping with any aspect of illness, the final question was left open for any further comments. From these responses three major themes emerged in analysis, as presented below (see Table 4).

Table 4. *List of themes and subthemes*

1. Music for relaxation
Calming the mind
Tension relief
Sleep
2. Positive response to music
Positive mood: happiness, uplifting, feel good
Love and enjoyment of music
Connection to heart and soul
3. Music for coping
Distraction from pain
Coping with negative emotion
Getting through tough times

Theme 1: Music for relaxation

Unsurprisingly, in the open response questions many respondents commented on the relaxation that comes with music listening both as a benefit and as a way of coping with illness. Over half of respondents (*n*=54) mentioned finding music relaxing or calming in some way. Some mentioned relaxing the body in pain and relieving tension, while others mentioned calming the mind and using music as an aid for mindfulness or meditation. Some mentioned both: "I find music relaxes the mind and body". A subtheme that was identified within relaxation was sleep as five respondents commented on music aiding sleep.

It helps me relax and sleep better. I always listen to music when I go to bed at night.

Theme 2: Positive response to music

Many respondents (*n*=33) mentioned how music can elevate or improve their mood. Music was described as something that brings happiness, joy, cheer and is uplifting. Some respondents mentioned their love of music and how they benefit from enjoyment:

> *Music helps create positive mental attitude. I've loved music since childhood. Mood and pain have an awful impact on enjoyment. Fortunately, I'm starting to enjoy music again.*

Music was also described as something for the heart, soul and spirits.

It brightens my spirits, it lifts my heart, and it is good for the soul.

Theme 3: Music for coping

Many respondents commented on how music helps them cope.

> *I think music helps you cope sometimes when you feel bad with your pain; you don't have to complain about how you feel to anyone.*

Coping with negative emotion and with pain were both identified. Using music to help get through the day or difficult times was also mentioned. The concept of forgetting, focussing on music rather than pain or "taking my mind off pain" was mentioned most often:

> *It sometimes helps me to focus on something else and I can take my mind off pain.*

Depression, anxiety, loneliness, stress, grief and "feeling down" were mentioned as emotional states that music helps in coping with:

> *You cope better when you are depressed when you listen to music.*

Some respondents commented that music does not help them in coping with illness (*n*=30).

Notable responses outside themes.

Although not falling within the three major themes, there were some notable comments that seem particularly relevant to this population, particularly how music does not always help take pain away:

> *[Music] does not take away physical pain and despite being a distraction, when I'm at my highest peak of pain it irritates me.*
> *Takes my mind off pain and try to settle when it's bad. But it does not take my pain away.*

Others commented on trying new ways of coping:

> *I would love to find a way that my struggle with living would be made easier especially my mental health.*
> *I will try anything if it benefits me.*

To summarize the results from the quantitative data give an indication of the music listening habits of one hundred and seven respondents and show their interest in further music interventions as part of their chronic pain treatment. The qualitative results show themes arising including music for relaxation, positive responses to music and music for coping. In the following section the quantitative and qualitative results will be linked through side-by-side comparison and checked for congruency. The results will be interpreted further in relation to the research questions and integrated with other studies findings.

Recommendations for further research will also be discussed.

Discussion

This study discovered that patients with chronic pain use music for a number of reasons, primarily for enjoyment, relaxation, to change mood and for coping. Personal importance and choice of music is paramount. The out-patients surveyed showed interest in receiving music therapy and there is some evidence that music is used to aid sleep, relieve tension and may be a useful therapy to improve quality of life and coping. However, findings should be treated with caution and further research is required with larger samples.

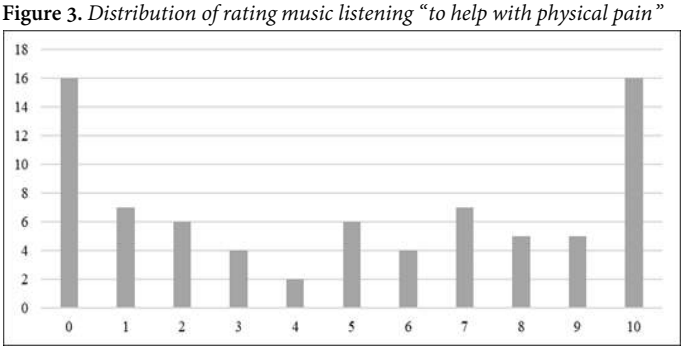
A side by side comparison of the quantitative and qualitative results (see table 5) shows congruency in the findings on using music listening for enjoyment and relaxation, the benefits of listening and playing, using music to change mood and using music for coping. There seems, however, to be some discrepancy in the results around using music to help cope with physical pain (See Table 5).

Table 5. *Side by side comparison of quantitative and qualitative results*

Finding	Quantitative Result	Qualitative Result
Listening to music for enjoyment	Most highly rated reason for listening (mean rating of 8.7).	Enjoyment and other positive responses to music reported (uplifting, happiness, love of music).
Listening to music for relaxation	"To feel relaxed" rated as second highest reason for listening to music (mean rating of 7.5). "To relieve tension" rated third highest (mean rating of 6.6).	Using music to relieve tension. Using music to calm the mind. Using music to aid sleep.
Benefitting from listening to or playing music	69% of respondents reported benefitting.	Over half of respondents to open questions mentioned finding music relaxing or calming in some way.
Using music to change mood	"To get in the mood I want to be in" rated 6.2. "To express feelings or emotions" rated 5.7.	33 respondents mentioned how music can elevate or improve their mood. Respondents mentioned using music to cope with negative emotions such as stress, depression or anxiety.
Using music for coping	"To get through difficult times" rated 6.2 as reason for listening. "To perform difficult activities" rated 5.1 as reason for listening. 56% respondents interested in availing of music therapy as part of their treatment.	Using music to help get through the day or difficult times, forgetting, focussing on music rather than pain. Some respondents commented that music does not help them in coping with illness (n=30).
Using music for pain	"To help with physical pain" rated lowest of all reasons for listening to music (mean rating of 5.0)	Using music to divert from pain mentioned by a few: "taking my mind off pain".

The lowest rated reason for listening to music was "to help with physical pain". However, when we look at the distribution of the ratings (figure 3) and consider the standard deviation (SD=3.8), the picture appears more complex. The personal importance of music appears to be an influencing factor here, as with the findings on benefitting from music listening or playing. Those who rated "to help with physical pain" with zero had also rated the personal importance of music as low. Those who rated "to help with physical pain" with ten, had rated the personal importance of music as high. A similar result and standard deviation was found in the Mitchell et al. (2007) postal survey. The inconsistency in response was comparable in the qualitative findings where using music for coping with pain was mentioned by some, but others stated outright that music does not take away their pain (See Figure 2).

Figure 3. *Distribution of rating music listening "to help with physical pain"*



It is unsurprising that many respondents chose to comment on their enjoyment of music when this was rated the highest reason for listening to music. In childhood, music is a natural part of play and is seen as a fun activity. As we grow music is often a pastime or hobby to be enjoyed. Enjoyable activities and meaningful occupation are often things that can impact on our quality of life. As stated earlier quality of life may be reduced, as pain disrupts social engagement, relationships, employment status and daily activities.

Enjoyment should not be overlooked as an important aspect of self care and coping [6]. With the mean quality of life rating for this sample being "neither good nor poor", perhaps music listening is an enjoyable activity that can serve to improve this. In the context of music therapy, enjoyment of music is rarely a goal and music therapists generally aim to discourage referrals simply because a client likes music. However, important improving quality of life and identifying enjoyable activities may be a suitable goal for music therapy with this population [17].

Relaxation and tension relief were highly rated reasons for listening to music in the quantitative findings (see Table 6). This is reflected in the qualitative findings where the relaxation that comes with music listening was mentioned both as a benefit and as a way of coping with illness. An additional finding in relation to relaxation was: the use of music for sleep. In chronic pain, sleep disturbance is a prevalent complaint [18]. The use of music for aiding sleep

may be another way in which music is used for coping with chronic pain (see Table 6).

Table 6. *Ranking of reasons for listening to music*

Reason for listening to music	Mean rating
1. To enjoy music	8.7
2. To feel relaxed	7.5
3. To relieve tension	6.6
4. To relieve boredom	6.5
5. To help me get through difficult times	6.2
6. To help get me in a mood I want to be in	6.2
7. Helps perform activities I would normally find boring	5.8
8. To express my feelings/emotions	5.7
9. To reduce loneliness	5.6
10. To set the mood when I'm with others	5.2
11. To be creative/use my imagination	5.1
12. Helps perform activities I normally find difficult	5.1
13. To help with physical pain	5

Differences were also seen in the perceived benefits in relation to gender and personal importance of music [15]. In relation to gender, this study found an additional link between gender and interest in availing of music therapy as female respondents were more interested in music therapy than male respondents (F=60%, M=49%).

As stated earlier in the literature review, psychological disorders, such as major depressive disorder, have been linked to chronic pain [6, 7, 8). The qualitative results of this study saw respondents mentioning depression, anxiety, loneliness, stress, grief and "feeling down" as emotional states that music helps in coping with. One respondent mentioned wanting to find ways in which their struggle with living, especially with mental health, could be eased. The Cochrane review on music therapy for depression found short-term beneficial effects including improvement in depressive symptoms, decreased anxiety levels and improved functioning of depressed individuals [19]. This could be of significance for those with chronic pain if we look to a more holistic treatment approach that addresses not only the physical pain but the wider impact this may have on a person and their life.

A rationale for music therapy in this context

From the data gathered, it seems that there is potential for the use of music therapy at an outpatient pain clinic. The responses from staff indicate that they see music as beneficial for patients with chronic pain, and that they see a role for music therapy in the treatment of these patients. There is also interest from the patients surveyed in availing of music therapy as part of their treatment. Music therapy could potentially assist in areas that were not so highly rated as reasons for music listening, such as emotional expression and managing physical pain. Group music therapy could address social isolation and reduce loneliness which often occurs in chronic illness [20, 21].

Music therapy could potentially assist patients in developing music-based tools and strategies for coping with chronic pain (physically and emotionally). This could build on findings supporting the use of music as an effective self-management treatment [12]. A music therapist could provide techniques to be employed by the patient in their daily lives to cope with chronic pain. In doing this, a resource-oriented approach to music therapy may be suitable for music therapists working with people with chronic pain. This approach puts the client's resources and strengths at the centre of the collaborative process as things to be acknowledged, activated and developed [22]. Rolvsjord describes a person's resources as having "a moderating or buffering function, which reduces the negative effects of life stress" (2010, p.76). In the context of chronic pain, activating a person's resources could empower them in managing and coping with their chronic illness.

Limitations

A limitation of this study can be seen in the qualitative section which would add more depth of understanding if extended, as well as a small sample size for the staff survey. It is advised that larger sample sizes for quantitative study and in-depth interviews would extend the findings and allow generalisation of results.

In this survey response rate was not accurately captured as the researcher could not be present to record this due to limited time. A general sense of response rate being high was fed back verbally to the researcher from staff at the pain clinic. In reflection, this is a limitation of the study and a potential source of bias.

Recommendations

It is recommended that a trial of music therapy be undertaken at an outpatient pain clinic to test and develop the relevance of these findings for music therapy in the chronic pain experience. There appears to be enough interest in the intervention and a strong rationale for the use of music therapy to address some of the complex needs that individuals with chronic pain may have. A feasibility study could further examine the potential for integrating music therapy into treatment for people with chronic pain. A feasibility study looking at vocal music therapy for chronic pain management for inner-city African Americans could be a suitable model for such a study [20]. This was a mixed methods study which used qualitative data imbedded within a randomised control trial. More evidence-based studies in this area with larger sample sizes and longer duration would be recommended to strengthen the rationale for music therapy in chronic pain. In addition to this, it may be interesting to compare the

outcomes of music therapy for those who rate music as highly important to those who rate it as less important.

Not many patients with chronic pain or doctors treating chronic pain use music in treatment. This is to be expected, given that the volume of research in this area is relatively small. The support and approval from a consultant anaesthetist and other staff members at a hospital outpatient pain clinic at a general hospital were integral to the success of this project. Music therapy is slowly beginning to become more visible and utilised in medical settings.

People in this pain clinic setting rated music as somewhat important to them (91%) with over half listening to more than an hour of music per day. Sixty-nine percent of patient respondents benefit in some way from music listening or playing. The benefits include relaxation, enjoyment, positive responses to music, tension relief and coping. This indicates potential for a low-cost, non-invasive intervention with minimal side effects and warrants further investigation.

Staff rated music as very beneficial for people with chronic pain and one hundred percent said they see a role for music therapy in the treatment of people with chronic pain. This research shows that there is potential to use music therapy as a non-pharmacological approach to assist people in developing music-based resources and strategies for managing chronic pain. Music therapy could be used not only to address physical needs related to pain, but also the surrounding social, emotional and psychological needs of people with chronic pain. Further investigation is recommended to test the outcomes of music therapy specifically in this setting and to develop the evidence.

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References

1. Aldrich S, Eccleston C, Crombez G. Worrying about chronic pain: vigilance to threat and misdirected problem solving. Behaviour Research and Therapy. 2000;38:457–470.
2. Larsen DK, Taylor S, Asmundson GG. Exploratory factor analysis of the Pain Anxiety Symptoms Scale in patients with chronic pain complaints. Pain. 1997;69:27–34.
3. Fullen B, Hurley, Power C, Canavan, O'Keeffe S. The need for a national strategy for chronic pain management in Ireland. Irish Journal of Medical Science. 2006;175(2):68-73. doi: 10.1007/BF03167954.
4. History of Chronic Pain Ireland. Chronic Pain Ireland web site. Available from: http://www.chronicpain.ie/about-us/history. Accessed 2nd January, 2018.
5. Garza-Villarreal E. Music-induced analgesia: The neurobiology of the analgesic effects of music in acute and chronic pain. In: Hashefi E, ed. Music therapy in the management of medical conditions. New York, NY: Nova Science; 2016:35 – 61.
6. Allen JL. Pain management with adults. In: Guidelines for music therapy practice in adult medical care. Gilsum, USA: Barcelona Publishers; 2013.
7. Bernatzky B, Presch M, Anderson M, Panksepp J. Emotional foundations of music as a non-pharmacological pain management tool in modern medicine. Neuroscience & Biobehavioral Reviews. 2011;35(9):89-1999. https://doi.org/10.1016/j.neubiorev.2011.06.005
8. Siedliecki SL, Good M. Effect of music on power, pain, depression and disability. Journal of Advanced Nursing. 2006;54:5:553-562. doi:10.1111/j.1365-2648.2006.03860.x
9. What is chronic pain? Chronic Pain Ireland website. Available from http://www.chronicpain.ie/getting-help/what-is-chronic-pain. Accessed 12th December, 2017.
10. Clark I, Tamplin J. How music can influence the body: Perspectives from current research. Voices: A World Forum for Music Therapy. 2016;16(2). doi:10.15845/voices.v16i2.871
11. Lee JH. The effects of music on pain: A meta-analysis. Journal of Music Therapy. 2016; 53(4):430-477. http://dx.doi.org.proxy.lib.ul.ie/10.1093/jmt/thw012
12. Gold A, Clare A. An exploration of music listening in chronic pain. Psychology of Music. 2012;41(5):545-564. doi:10.1177/0305735612440613
13. Hopper MJ, Curtis S, Hodge S, Simm RA. A qualitative study exploring the effects of attending a community pain service choir on wellbeing in people who experience chronic pain. British Journal of Pain. 2016;10(3):124-134. doi:10.1177/2049463716638368
14. Mitchell LA, Macdonald RAR, Knussen C, Serpell MG. A survey investigation of the effects of music listening on chronic pain. Psychology of Music. 2007;35(1):37-57. doi: 10.1177/0305735607068887
15. Creswell J, Plano Clark VL. Designing and conducting mixed methods research (2nd Ed.). London, UK: Sage Publications. (2011).
16. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006;3(2):77-101. doi: 10.1191/1478088706qp063oa
17. Koenig J, Warth M, Oelkers-Ax R, et al. I need to hear some sounds that recognize the pain in me: An integrative review of a decade of research in the development of active music therapy outpatient treatment in patients with recurrent or chronic pain. Music and Medicine. 2013; 5(3):150-161. doi: 10.1177/1943862113490739
18. Morin CM, Gibson D, Wade J. Self-reported sleep and mood disturbance in chronic pain patients. The Clinical Journal of Pain. 1998;14(4):311-314. https://doi.org/10.1097%2F00002508-199812000-00007
19. Aalbers S, Fusar-Poli L, Freeman RE, et al. Music therapy for depression. Cochrane Database of Systematic Reviews. 2017;11:1-80. doi:10.1002/14651858.CD004517.pub3.
20. Bradt J, Norris M, Shim M, et al. Vocal music therapy for chronic pain management in inner-city African Americans: A mixed methods feasibility study. Journal of Music Therapy. 2016;53(2):178–208. https://doi.org/10.1093/jmt/thw004
21. Öhman M,,Söderberg S, Lundman B. Hovering Between Suffering and Enduring: The meaning of living with serious chronic illness. Qualitative Health Research. 2003;13(4)528-542. doi: 10.1177/1049732302250720
22. Rolvsjord R. Resource-oriented music therapy in mental health care. Gilsum, USA: Barcelona; 2010.

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APPENDICES

Appendix One - Patient Survey

PATIENT'S USE OF MUSIC IN THEIR EXPERIENCE OF CHRONIC PAIN

CONFIDENTIAL SURVEY

Question One

What is your gender? Male / Female (please circle)

Question Two

How old are you? _____ (age in years)

Question Three

What is the highest education you received?

None at all / Primary / Secondary / Tertiary (please circle)

Question Four

What is your marital status?

Single / Married/ Living as married / Separated / Divorced / Widowed (please circle)

Question Five

Please read the following statements and tick the box that best describes your thoughts and feelings over the last two weeks.

How would you rate your quality of life?

- ☐ Very poor
- ☐ Poor
- ☐ Neither good nor poor
- ☐ Good
- ☐ Very good

How satisfied are you with your health?

- ☐ Very dissatisfied
- ☐ Dissatisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Satisfied
- ☐ Very satisfied

To what extent do you feel that physical pain prevents you from doing what you need to do?

- ☐ Not at all
- ☐ A little
- ☐ A moderate amount
- ☐ Very much
- ☐ An extreme amount

Question Six

How often do you listen to music? (please tick)

- ☐ Not very often
- ☐ Some days
- ☐ Most days
- ☐ Once a day
- ☐ Often as possible

Question Seven

On average, how many hours per day do you spend listening to music?

_____

Question Eight

How important is music to you? Please tick one option that applies to you below.

- ☐ Not at all important
- ☐ A little important
- ☐ Quite important
- ☐ Very important

Question Nine

Please rate the following reasons on why you listen to music.

0 meaning you disagree, 10 meaning you fully agree.

Reason	0	1	2	3	4	5	6	7	8	9	10
To enjoy music											
To be creative/use my imagination											
To relieve boredom											
To help me get through difficult times											

To express my feelings/emotions											
To reduce loneliness											
To relieve tension											
To feel relaxed											
To help get me in a mood I want to be in											
To set the mood when I'm with others											
Helps me perform activities I would normally find boring											
Helps me perform activities I would normally find difficult											
To help with physical pain											

Question Ten

Do you play an instrument or sing?

- ☐ Yes (please describe) _____
- ☐ No

Question Eleven

Do you find you benefit in any way from music listening or playing?

- ☐ Yes
- ☐ No

If yes, in what way?

_____

_____

_____

Question Twelve

Has chronic pain changed the way you access to music?

- ☐ Not at all
- ☐ A little
- ☐ A moderate amount
- ☐ Very much
- ☐ An extreme amount

Question Thirteen

Please comment freely on whether you feel that music has helped in coping with any aspect of illness.

_____

_____

_____

Question Fourteen

Music Therapy is the use of music to accomplish goals (such as relaxation, emotional expression or interaction) within a therapeutic relationship with a trained music therapist.

If music therapy was offered as part of your treatment, would you be interested in availing of it?

- Not at all
- A little interested
- A moderate amount
- Very much interested
- Unsure

Question Fifteen

Would you be interested in partaking in a choir specially set up for people with chronic pain?

- Not at all
- A little interested
- A moderate amount
- Very much interested
- Unsure

Please feel free to comment on any part of the survey above.

_____

_____

_____

_____

Thank you for participating in this survey.

Appendix Two - Staff Survey

STAFF PERCEPTIONS OF THE USE OF MUSIC IN CHRONIC PAIN

CONFIDENTIAL SURVEY

Question One

What is your gender? Male / Female (please circle)

Question Two

What is your role at the pain clinic? (please circle)

Doctor

Nurse

Administration

Psychologist

Clinical Therapist

Healthcare Assistant

Other (please explain) _____

Question Three

Is music personally important to you? (please circle rating)

Not important Very important

1 2 3 4 5

Question Four

Do you ever access music in the workplace (music listening or otherwise)?

Yes / No (please circle)

If yes, please give details

_____

_____

Question Five

Do you think music listening is of benefit to patients with chronic pain? (please circle rating)

Not beneficial Very beneficial

1 2 3 4 5

Question Six

Do you think playing music or singing could benefit patients with chronic pain?

Not beneficial Very beneficial

1 2 3 4 5

Question Seven

Music Therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a trained therapist.

Do you see a role for music therapy in the treatment of patients with chronic pain?

Yes / No / Unsure (please circle)

Please feel free to comment on any of the above.

_____

_____

_____

_____

Appendix 3 Survey statistical analysis

Demographic variables:

Gender, age, education

Marital status: recoded into three categories for analysis; single, married/living as married, separated/divorced/widowed.

Quality of life and health variables:

Quality of life (QOL): Respondents were asked to rate their QOL on a five-point scale (very poor, poor, neither good nor poor, good or very good. This was recoded for purpose of analysis to 'very poor / poor', 'neither good nor poor', 'good / very good'.

Health: Health satisfaction was rated on a similar five-point scale ranging from very dissatisfied to very satisfied. The extent to which physical pain prevents a respondent from doing what they need to do was also rated on a five-point scale (not at all, a little, a moderate amount, very much, an extreme amount). These were recoded into three categories .

Music habit variables:

Music frequency: A five-category rating scale was used to measure the frequency of music listening. Recoded into 4 categories.

Music importance: A four-category rating scale.

Reasons for listening: Participants were asked to rate the reasons why they listen to music. Thirteen options were given, with a 0-10 rating.

Music participation: Participants were asked if they play/sing.

Access: if chronic pain has changed the way they access music on a five-point scale ranging from not at all to an extreme amount.

Music intervention:

Music intervention: To assess the potential for music interventions within the outpatient pain clinic setting, participants were asked about their interest in availing of music therapy or partaking in a choir for people with chronic pain. A short definition of music therapy was given as follows; "Music Therapy is the use of music to accomplish goals (such as relaxation, emotional expression or interaction) within a therapeutic relationship with a trained music therapist". Participants were then asked to rate their interest in both on a 5-point scale.

Full-Length Article

Part 1:

Community Music Therapy and El Sistema: *Addressing the Empowerment Needs of Individuals and Communities Facing Socioeconomic Marginalization*

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Abstract

Music is an accessible tool that has been used to foster change within people and societies, even in those places facing socioeconomic marginalization due to poverty, discrimination, and lack of access to resources. Social capital has to do with the resources and networks available within a society, which may help confront issues faced by individuals and communities. Community Music Therapy (CoMT) and the music education movement known as *El Sistema*[*] both utilize music—understood as social capital—to address social justice. Part I of this article defines CoMT and examines the purpose and goals of CoMT and El Sistema comparatively, and the ways in which their programs may address the empowerment needs of individuals and communities facing socioeconomic marginalization. Part II reviews the findings of a study that leads toward a suggestion of how these two approaches may be able to work synergistically to achieve their shared goals. Findings reveal many parallels and divergences between El Sistema and CoMT which may be useful in advancing change. This article defines the role of the music, program structure, social justice goals, outcomes, music education practice, areas of intersection, existing scholarly research, and criticisms each has received, in an effort to further advance the understanding and possibilities music's influence may have on society.

Keywords*: CoMT, El Sistema, social justice, social capital, community*

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In theory, both Community Music Therapy (CoMT) and *El Sistema* see participation in music-making and the arts as drivers for social justice and change. The purpose of this study was to comparatively examine the ways in which CoMT and El Sistema programs may address the empowerment needs of individuals and communities facing socioeconomic marginalization and suggest how these two approaches may be able to work synergistically to achieve their shared goals. This is an important topic, because a comparative analysis of CoMT and El Sistema programs had yet to be studied. The independent successes achieved so far with the CoMT and El Sistema approaches demonstrate that music can indeed be made accessible to anyone. While there are some differences in the ways CoMT and El Sistema provide access to music, there are also some ways in which they align. One of the most important points at which these two disciplines intersect is that both offer the capacity to promote change in those directly involved, such as students, clients and group members, as well as those involved indirectly, such as families and the larger community.

Community Music Therapy

CoMT is considered a practice, subdiscipline, and professional specialty.[1] Its principles shift from those of conventional music therapy theory and practice.[1-4] CoMT is challenging, redefining, and expanding aspects of music therapy.[1,3,5-14] One of the main ways in which CoMT is challenging and expanding on conventional music therapy is that the focus is not only on the individuals and their needs. It is also on increasing possibilities for action, and the promotion of health and well-being of the clients who often face obstacles to health due to an inability to fully participate in social and cultural life.[1,3,15] Additionally, there is an emphasis on considering aspects of culture and the context in which the process takes place.[5,6,10-14] The client is both the individual and the community.[1,3,6,12-14,16]

CoMT practice guidelines PREPARE, participatory, resource-oriented, ecological, performative, activist, reflective, and ethics-driven, are applied based on context and needs.[1,3,11,13] Since the work is dependent on the

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[*] *El Sistema* is a music education program founded by Jose Antonio Abreu in the 1970s in Venezuela. From the beginning, the main aims have been to provide access music education at no cost , as well as addressing social goals. Over the years its success stories have spread and many El Sistema-inspired programs have been started around the world.

environment, the context or circumstances, and the setting, it cannot be standardized; it changes with time and place.[1,3,12,13] This allows CoMT to address a broad range of goals such as cultural participation, health promotion, and the social and political issues faced by individuals and their communities or societies across a variety of contexts.[1,3,5,7,12,13,16] CoMT goals are addressed by promoting social justice and welfare in the community by deconstructing historical isolation and marginalization, addressing specific social challenges, promoting safety and engagement, encouraging community integration while building and strengthening the identity and culture of the individuals and the community, and by shifting the focus into developing and implementing new social policies in which health, education, and culture come together.[1,3,5,7,12,13,16,17]

Working musically with groups and individuals within communal situations is a natural part of what music can offer.[6,16,17] Musicking is a "communal phenomenon" that plays an integral role in allowing the work to unfold in CoMT settings.[1,3,5-7,10,11,13,16,17] Musicking in the broadest meaning of the term can be seen as a representation of what the world is like, as well as a model of what the individuals and community wish it to be, which can then address different aspects of individuals' lives.[5,6,13,16,17]

According to Stige[13,16] and Stige and Aarø[1], the traditional therapeutic triad (client, therapist, music) is expanded to include the community, the culture, the context, and other relationships. The music therapist is not considered an expert but a collaborator in the process, and the role of the therapist expands. The music therapist becomes a "musicking community worker...who promotes social welfare [by reducing barriers to participation] in and through a community."[13] The expanded role of the therapist within CoMT creates tension with conventional music therapy practice and ethical guidelines.[2,4] The music therapists must get immersed in the culture of the community and make an effort to constantly evolve and understand the societies in which they practice.[12,14] Most importantly, these therapists facilitate the natural process of connecting, healing, and evolving by staying open to the various therapeutic opportunities that music offers within the various ecological layers and systems, seeing the clients as cultural and musical beings, and taking part in the music while being there psychologically and physically in order to help clients find their place within the community.[1,3,5,11,14,16,18]

Goals, Aims, and Purposes

In CoMT, aesthetic objectives are social objectives, since playing together increases the participants' possibilities for action.[12,19] One of the main goals in CoMT is to be able to reach musical *communitas* and flow, where participants share musical companionship and a musical community: A common world, time, and space that allows for both individuality and unity.[6,10,19-22] Participating in CoMT allows for social change (through social learning) and for building a community in which both individual and communal cultural identity development can occur.[1,13] Once the cultural identity of individuals and the group starts to form, participants are able to get an increased sense of belonging and participation in the community, which helps to break down barriers and give access to hopes and dreams about what the world could be like, while at the same time addressing the health and well-being of participants.[1,5,6,13]

Methodology

CoMT methods can include all four of traditional music therapy's interventions (recreation/orchestration, improvisation, songwriting, and receptive experiences) with an emphasis on successful and meaningful participation, as well as an opportunity for fun and free play.[8,10] Interventions are carried out within hypertextuality, in which there are many different paths to follow and explore as the relationships change and evolve throughout the music therapy process.[13] In addition, performance takes on an important role, creating opportunities for socialization and subjectivity among members and functioning as a medium of expression, empowerment, and sharing the music with others in the community.[1,3,5,7,8,10,13,14,16] The music therapist also carries out assessments that take into consideration the role of health affordances, formulates goals and objectives that can be met collaboratively with the group, implements interventions, and evaluates the therapy process in a reflective manner.[1,10,13]

Outcomes

CoMT has a wide variety of outcomes, both for individuals and for the community. Outcomes for individuals can include increased self-esteem, self-worth and communication; emotional expression and catharsis; gaining personal control; mental stimulation; relief of stress and anxiety; gaining a sense of pride and achievement; decreased isolation through finding a place in society; an increased feeling of responsibility; finding meaning, hope, and happiness in life; increased creativity; increased independence and empowerment; discovering how to connect with a healthy place within themselves; increased ability to experience trust and recognize the humanity of others through the music; and having the opportunity to be a leader and try out different social roles.[1,5,7,8,10,12,15-17]

Outcomes for the community include gaining a sense of emotional closeness; forming relationships and increased proximity to others; feelings of acceptance and belonging; community development and integration; reducing barriers to participation within the community; learning about social organization; reflecting the community's musical culture; the reduction of stigma and opening up of integration processes; and transmitting community history and heritage while

creating bridges among different cultures.[1,3,5,7,8,12,13,15-17] Last, both the individual and the community are able to develop and strengthen their cultural identities and experience increased possibilities for action.[1,3,5,8,12,15-17,19,21]

CoMT in the United States

According to Ghetti[3], the practice of CoMT is not as common or widespread in the United States as it is in Scandinavia and Latin America. The fact that this kind of practice is less common may be due to hesitation about engaging in something that is in conflict with the American Music Therapy Association Code of Ethics, especially number 3.5, which states that the music therapist "will not enter into dual relationships with clients/students/research subjects."[2,23] While working to fulfill the many roles within CoMT practice, dual relationships can easily form. Despite this conflict, CoMT practice is still more common in places like New York City. Current examples include work in the Thirtieth Street Men's Shelter, Turry's community performance practices, Jampel's work at Baltic Street helping individuals with mental health needs integrate into the community, Ramsey's "Happy Hour," and Sensory Friendly Concerts.[3,24]

El Sistema

El Sistema, also known as Fundación del Estado para el Sistema Nacional de Orquestas Juveniles e Infantiles de Venezuela (FESNOJIV) or Fundación Musical Simón Bolivar (FMSB), is a music education program that started in Venezuela.[25,26] This program provides access to various aspects of music education to children and young adults who primarily come from a low socioeconomic status.[25-30] When the program started, music was only available for the elite. Jose Antonio Abreu saw that there was a need for orchestras in which everyone could participate and decided to take action.[25,26,31]

Abreu's vision was to expand as much as possible, so the orchestra rehearsed during the week, and then on weekends the musicians would travel, spread the word, and teach others what they were doing in Caracas.[26] Even though Abreu's vision seemed impossible—maybe even crazy—everyone trusted him and did as asked. [25,26] The way that El Sistema started is important because it set the stage for the immense expansion that occurred in the years that followed. There are now many educational centers around Venezuela reaching almost half a million children and young adults, and its success has inspired programs in many countries around the world, including the United States.

Philosophy and Principles

El Sistema's motto is *Tocar, Cantar y Luchar*— "to play, to sing and to strive."[25-27] While artistic excellence is one of its goals, El Sistema's focus is on music for social change, social and emotional development, and the formation of empathic human communities.[26,28,29] El Sistema is about giving access to music to all children, especially those who may not be able to have contact with music otherwise, by providing music instruction at no cost.[25,26,29] But it is more than that; it is about accomplishing "democratic ideals, justice and social inclusion, rescuing children and young people through art, increasing people's sensitivity, [and] work and education as a road to collective and self-fulfillment."[25]

El Sistema is an artistic and humanitarian revolution where access to music has been democratized to anyone.[25,29] It is a mission to create better human beings, or citizens of the world.[26] This is true not only for the children who participate but also for their families and the community that surrounds them.[25,26,28,30] It is a fight against conventional standards that say that intellect is more important than feelings and emotions, and that the arts are only for the few.[26,29] Abreu did not accept those standards as a reality and was often quoted saying that "culture for the poor must never be poor culture"[26] In other words, a person's socioeconomic status should not dictate the level of culture that he or she is able to experience and participate in. Once people are able to create and express beauty by playing a musical instrument, they are able to understand the essence of humanity.[27]

Practice

El Sistema teaches that the orchestra (or choir or band) is an interdependent community that fundamentally agrees and has a common goal, one in which members are responsible for each other.[27] It is a place where there are no class distinctions and where social roles are equalized, yet it has its own identity and fingerprint—a sort of *communitas*.[19,27] The orchestra has the ability portray representations and symbols of harmony, order, the aesthetic and the beautiful, the universal, and the language of the invisible; it represents the essence of its members.[27] This is something has been a source of criticism about El Sistema, however, as orchestras are inherently hierarchical, competitive, and respond to the will and wishes of a single ruler, the conductor.[31,32]

In Venezuela, El Sistema is mainly set up through educational centers, called *nucleos*.[25,26] While there is a set curriculum for all of El Sistema, so children can continue to play if they move, each *nucleo* has its own personality and way of working.[26] This curriculum is sometimes seen as lacking in flexibility.[31,32] El Sistema is in a permanent state of "being and not yet being."[26] This means that the way in which El Sistema works is constantly evolving and has the flexibility to be molded according to the specific needs that arise.[26,30] This is reflected in El Sistema–inspired programs around the world. An example of molding that has occurred based on the needs of the community is the special education program. There was no access to music for children with special needs in Venezuela, a *nucleo* in Lara, became the pioneer in inclusive groups and instruction.[26]

The guiding principles that hold El Sistema teaching together are social and emotional development, ensemble-based instruction and learning, high musical aspiration, artistic excellence, radical inclusion, peer learning, music as passion and expressivity, intensity of instruction and music making, family and community involvement, and most importantly, providing musical access as a way for children to break down barriers, with an emphasis on passion and fun.[25-30]

Outcomes

El Sistema has given birth to many great musicians, but not all participants pursue professional careers in music.[25,26] While there are programs that place great emphasis on artistic excellence and high musical quality, there are El Sistema *nucleos* that give more weight to the social and emotional development and well-being of their participants.[25,26,28,29]

El Sistema's individual and communal outcomes include participation in culture and society, access to expression through music, transformation of adversity into hope, transformation of challenge into action, and turning dreams into reality.[25,29,31] El Sistema involves social learning about discipline, responsibility, team practice and the experience of being in agreement.[26,27] It provides access to all classes, equalizes by taking away class distinctions, and has the ability to unite entire communities, thus creating a sense of belonging. [26-29] It allows for socialization and transmits values such as solidarity; a sense of harmony and order; compassion; and the expression of sublime feelings within the realms of the aesthetic, the beautiful, and the universal.[27,28,29]

El Sistema in the United States

The El Sistema movement in the United States is strong. The number of El Sistema–inspired programs is rapidly growing across the entire country. As of 2017, there are 161 programs across the country, each serving an average of 191 students.[33] There are also two organizations, El Sistema USA and Take A Stand, as well as a master's program, dedicated to the training and support of professional El Sistema teaching artists and administrators, with the aim of advancing the El Sistema presence in the United States. The configuration of programs in the United States reflects El Sistema practice around the world, as each program varies widely, even among programs that are in the same state or that are run by the same organization.[33]

Social Justice

Social justice is a complex concept, as its main linguistic elements, *social* and *justice*, have no universal definition or meaning; it manifests differently depending on context, requires the consideration of many different aspects of humanity, and is not carried out in equal measure across different societies.[24,34] Regardless of what social justice looks like at any given place or to any given person or community, it is fair to say that it is absent when individuals and communities face socioeconomic marginalization.[1,24,34]

Advancing social justice signifies working for the good of all in order to reach socioeconomic equality and democracy.[35] In other words, working for social justice means promoting and securing basic human rights.[15] Social justice can be advanced by focusing on social inclusion, health and well-being, people's right to exist, and engendering a sense of belonging to groups and/or society.[17] Social welfare is deeply connected to social justice, as welfare and equality are the antithesis of poverty, inequality, and discrimination.[1]

Social Welfare

According to the Ottawa Charter for Health Promotion[36], prerequisites for health include peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice, and equity. Social welfare pertains to the overall well-being, prosperity, and health of both the community and the individuals that live within it.[13] Due to lack of access, marginalized individuals often face obstacles that prevent them from reaching an optimal state of health and well-being.[37-39]

The welfare state is a concept applied by government and social agencies to attempt to guarantee social stability and justice by placing minimum public safety nets for the community and its individuals.[13] Such public safety nets usually include programs that aim to improve health and provide access to services to people in the community.[13] Even though traditional health programs are necessary to maintain the health of individuals in a community, there are different ways in which health issues can be addressed.

Welfare programs can motivate individuals to improve on their health behaviors and thus improve their quality of life.[21,40] When implemented across a group within the community, these health behaviors can be manifested as mutual care of people's biological, psychological, social, and cultural well-being.[13] In other words, health can be represented by the quality of interactions and activities that the community and its individuals engage in.[13] By taking into account the quality of the interactions, health becomes a part of the relational and communal aspects of a person's life.[13,21] As a result, health is no longer only about the individual but also actively seeks to address human coexistence.[13,21] Social justice and social welfare can therefore be advanced with resources that exist within individuals and society, such as social capital.

Social Capital

Social capital plays a role in the health of individuals and society as a whole. It can be a positive resource that consists of social networks, connections among people, relationships (friends, family, groups), norms and values, sense of

reciprocity and social obligations, trust, and individuals' overall feelings of group membership and belonging.[40,41] Social capital is the basis for a civil society, as it is the "glue that holds communities together" and helps generate cooperation and trust in a mutually beneficial manner.[40]

There are several indicators of social capital. These include active group participation, community and civic involvement, the presence of social networks or connections (at any level), trust, the formation of norms and values, empowerment, reciprocity, and formal or informal learning.[40] It is essential that participation be active, as it strengthens social capital development by becoming a basis for inclusion, praxis for social goods, a source of information flow, and the using and sharing of resources among people.[24,40] Since social capital has to do with resources, one of the ways in which welfare state programs can address the health of communities and individuals is by providing them with opportunities for and access to social capital.

Social capital can be an important by-product of cultural activities, such as music, that require active participation and have an artistic purpose.[40,41] Music can be a resource for the development of social capital and community building, as it strengthens individuals and communities by encouraging people to engage positively in the world and society.[40] Social capital can therefore be expanded through musical participation within a community by decreasing barriers and increasing the possibilities for action.[12,16,21]

Music as Social Capital

Music can influence an individual's health and mode of being and play a role in the process of forming and strengthening an individual's social and cultural identity.[5,19,21] It provides resources for increasing feelings of vitality; increasing emotional awareness; constructing an environment conducive to feelings of belonging, integration, and community; planting a sense of agency; instilling hope and security; and providing a sense of meaning and coherence in life.[5,14,15,19,21] Participating in music-making activities can increase an individual's social competency and communications skills and provide sense of trust, while increasing the ability to see other people's humanity.[14,15,21] Music-making is semiotic activity that can act as symbolic capital, enabling people to feel at home in the surrounding culture and environment.[19,21] Music-making activities can be a representation of human interaction and can lead to cultural innovations within noncultural realms.[8,19]

In working with musical capital, aesthetic objectives are social objectives.[12] Musical capital can therefore act as a template for nonaesthetic matters, making musical capital a cultural and political enterprise.[12,19] Musical capital can be a source of world building, which includes social formation, social ordering, and social enrichment, and a vehicle for cultural development.[19] Musical capital represents the performance of relationships and roles in communal practices through musicking and musicing, and the formation of musical *communitas*, which allows for building bridges and utopian imaginations.[1,6,13,14,19,20,42] One example of programs that have addressed social capital through music throughout history can be found in the practices of community music around the world.[42]

Community Music

Community music practices have and continue to address issues of social justice and social change by utilizing musical capital through a wide variety of representations around the world.[42] Community music resists categorization, as there is no national or global consensus about what it entails.[24,42] In its most basic form, community music involves teaching, experiencing, and performing music.42 Community music programs do not have a global definition, but they do adhere to a few principles. These basic principles include active participation, mixed age and ability, group communication, skills sharing, and inclusion of diverse groups and people.[34] Community music practice is responsive to local needs and values.[24] Different interpretations of the basic principles and the imperative to respond to local needs and values call for different kinds of structures.

Community music usually emphasize lifelong learning and access for all, whether the projects are occasional, one-time, or ongoing.[42] In aiming to offer equal access to all, community music can serve a restorative social justice role, where the focus is on supporting a more equitable social order and building or restoring the community served by increasing its social capital.[24,40,42] Some initiatives may focus on music aesthetics; others may focus on personal and social well-being; and still others may focus on both.[4,42]

Community music programs utilize music to meet the social, cultural, emotional, aesthetic, and intellectual needs of individuals and their communities.[34] Community music has a positive impact on individuals, families, schools, and community relationships.[34] Active participation in community music not only results in acquiring musical skills but also in emotional growth, increased confidence, increased self-worth and agency, a sense of mastery, a sense of fulfillment, and empowerment.[34] Furthermore, community music can increase social capital by emphasizing shared experiences, participation and engagement, sense of belonging, mutual respect, trust and reciprocity, collaboration, the development of social networks and resources, shared norms and values, and fellowship.[34,40]

Due to the great variety of structures, goals, and purposes of community music programs, practitioners find themselves needing to perform a number of different roles. These include musician, teacher, researcher, and activist; the role taken is determined in response to the particular situation.[42] The community music practitioner's skills are important, but knowledge and understanding of the community being served is essential, as that plays a part in determining a program's

ability to successfully address its goals.[34] Ethics should also be at the forefront of the community music practitioner's skill set.[24] Since there is no governing body that community practitioners respond to, their standards of practice and ethics are determined by each practitioner's own set of morals and values.[4,24]

Finding Connections

Community music practices have deep similarities with both CoMT and El Sistema. Given community music's aims and purposes, its focus on equity and access, and the ways in which community music practices are structured according to the needs of the community served, it can be said that El Sistema programs are a community music practice. The same can be said about CoMT. An important difference, however, is that El Sistema focuses on children, while community music works with people across the life span. In this sense, community music practices are more like CoMT.

According to O'Grady and McFerran4, health should be considered as a nonlinear continuum involving four stages: acute illness/crisis, rehabilitation, community, and well-being. Community music practices work with people in the community and well-being stages while CoMT practices work with people throughout the entire health care continuum.[43] When taking this into consideration, the notion that El Sistema can be considered a community music practice is strengthened, as El Sistema programs are most likely to serve people in the community and well-being stages of health. Regardless of the health stages that are addressed through El Sistema and CoMT programs, aspects of their essence and practice have the potential to aid, inform, and be mutually beneficial in achieving their shared goals.

References

1. Stige B, Aarø, LE. *Invitation to Community Music Therapy*. New York, NY: Routledge; 2012.
2. Aigen KS. Community Music Therapy. In McPherson GE, Welch GF, eds. *The Oxford Handbook of Music Education*. Vol 2. New York, NY: Oxford University Press; 2012:138-154.
3. Ghetti CM. Performing a family of practices: Developments in Community Music Therapy across international contexts. *Music Ther Persp*. 2016;34(2):161-170. doi:10.1093/mtp/miv047.
4. O'Grady L, McFerran K. Community music therapy and its relationship to community music: Where does it end? *Nordic J Music Ther*. 2007;16(1):14-26.
5. Amir D. Community Music therapy and the challenge of multiculturalism. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:249-266.
6. Ansdell G. Rethinking music and community: Theoretical perspectives in support of Community Music Therapy. In Pavlicevic M & Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:65-90.
7. Barcellos LRM, Alvares TS. A changing Society and a changing concept of music therapy in Brazil. In Goodman KD, ed. *International Perspectives in Music Therapy and Training: Adapting to a Changing World*. Springfield, IL: Charles C. Thomas Publishers; 2015:173-201.
8. Davidson J. What can the social psychology of music offer Community Music Therapy? In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:114-128.
9. DeNora T. The pebble in the pond: Musicing, therapy, community. *Nord J Music Ther*. 2005;14(1),57-66. doi:10.1080/08098130509478126.
10. Krout RE. Music therapy community-based clinical learning experiences here and abroad: A focus on community engagement. In Goodman KD, ed. *International Perspectives in Music Therapy Education and Training: Adapting to a Changing World*. Springfield, IL: Charles C. Thomas Publishers; 2015:103-129.
11. Pavlicevic M. Learning from Thembalethu: Towards responsive and responsible practice in Community Music Therapy. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:35-47.
12. Procter S. Playing politics: Community Music Therapy and the therapeutic redistribution of musical capital for mental health. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:214-230.
13. Stige B. Community Music Therapy: Culture, care, and welfare. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:91-113.
14. Zharinova-Sanderson O. Promoting integration and socio-cultural change: Community music therapy with traumatised refugees in Berlin. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:233-248.
15. Krüger V, Stige B. Between rights and realities – music as a structuring resource in child welfare everyday life: A qualitative study. *Nord J Music Ther*. 2015;24(2):99-122. doi:10.1080/08098131.2014.890242.
16. Stige B. *Culture-Centered Music Therapy*. Gilsum, NH: Barcelona; 2002.
17. Vaillancourt G. Music therapy: A community approach to social justice. *Arts Psychother*. 2012;39:173-178. doi:10.1016/j.aip.2011.12.011.
18. Bruscia KE. *Defining music therapy*. 3rd ed. University Park, IL: Barcelona Publishers; 2014:210-215.
19. DeNora T. *Music in Everyday Life*. Cambridge, MA: Cambridge University Press; 2000.
20. Aigen KS. *Music-Centered Music Therapy*. Gilsum, NH: Barcelona; 2005.
21. Ruud E. *Music Therapy: Improvisation, Communication, and Culture*. University Park, IL: Barcelona Publishers; 1998.
22. Turner VW. *The ritual process: Structure and anti-structure*. Chicago, IL: Aldine Pub. Co; 1969.
23. American Music Therapy Association Code of Ethics. Musictherapy.org. https://www.musictherapy.org/about/ethics/. Published November 14, 2015. Accessed March 15, 2018.
24. Silverman M. Community Music and Social Justice: Reclaiming Love. In McPherson GE, Welch GF, eds. *The Oxford Handbook of Music Education.* Vol. 2. New York, NY: Oxford University Press; 2012:155-167.
25. Borzacchini C. *Venezuela Bursting with Orchestras*. Caracas: Banco del Caribe; 2005.
26. Tunstall T. *Changing lives: Gustavo Dudamel, El Sistema, and the Transformative Power of Music*. New York: Norton; 2012.
27. *Tocar y Luchar*. (2006). [DVD] Directed by A. Arvelo. Venezuela: Explorart Films.
28. Booth E, Tunstall T. Five encounters with "El Sistema" international: A Venezuelan marvel becomes a global movement. *Teach Artist J*. 2014;12(2):69-81. doi:10.1080/15411796.2014.878134.
29. Osborne MS, McPherson GE, Faulkner R, Davidson JW, Barrett MS. Exploring the academic and psychosocial impact of El Sistema-inspired music programs within two low socio-economic schools. *Music Education Research*. 2016;18(2): 156-175. doi:10.1080/14613808.2015.1056130.
30. Tunstall T, Booth E. *Playing for their Lives: The Global El Sistema Movement for Social Change through Music*. New York, NY: W. W. Norton & Company; 2016.

31. Baker G. *El Sistema Orchestrating Venezuela's Youth*. New York, NY: Oxford University Press; 2014.
32. Baker G. "Citizens or subjects? El Sistema in critical perspective." In Elliot D, Silverman M, Bowman W, eds. *Artistic Citizenship: Artistry, Social Responsibility, and Ethical Praxis*. New York, NY: Oxford University Press; 2016:313-338.
33. Elements of Organizational Success: Understanding Differences in Structure and Values in El Sistema USA Programs. Arts.gov. https://www.arts.gov/sites/default/files/Research-Art-Works-Duke.pdf. Published September 1, 2017. Accessed February 15, 2018.
34. Woodward S, Pestano C. Marginalized Communities: Reaching Those Falling Outside Socially Accepted Norms. In Veblen KK, Messenger SJ, Silverman M, Elliott DJ, eds. *Community Music Today*. New York, NY: Rowman & Littlefield; 2013:185-197.
35. Green P. *Equality and Democracy: A New Press Back-to-Basics Book*. New York, NY: The New Press; 1998.
36. The Ottawa Charter for Health Promotion. Who.int. https://www.who.int/healthpromotion/conferences/previous/ottawa/en/. Published November 21, 1986. Accessed October 4, 2017.
37. Fitzpatrick T, Rosella LC, Calzavara A, Petch J, Pinto AD, Manson H, Goel V, Wodchis WP. Looking beyond income and education: Socioeconomic status gradients among future high-cost users of health care. *Am J Prev Med*. 2015;49:161-171. doi:10.1016/j.amepre.2015.02.018.
38. Slinger KN. Socioeconomic Status. In Darity WA Jr., ed. *International Encyclopedia of the Social Sciences*. 2nd ed. Vol 7. Detroit, MI: Macmillan Reference USA; 2008:655-660. Retrieved September 7, 2016 from http://go.galegroup.com.ezproxy.montclair.edu.
39. Venkataramani AS, Chatterjee P, Ichiro K, Tsai, AC. Economic opportunity, health behaviors, and mortality in the United States. *Am J Public Health*. *2016;*106(3):478-484. doi:10.2105/AJPH.2015.302941.
40. Jones PM, Langston TW. Community Music and Social Capital. In McPherson GE, Welch GF, eds. *The Oxford Handbook of Music Education.* Vol. 2. New York, NY: Oxford University Press; 2012:120-137.
41. Putnam RD. *Bowling alone: The collapse and revival of American community.* 3rd ed. New York, NY: Simon & Schuster; 2007.
42. Veblen KK. The Tapestry: Introducing Community Music. In Veblen KK, Messenger SJ, Silverman M, Elliott DJ, eds. *Community Music Today*. New York, NY: Rowman & Littlefield; 2013:1-9.
43. Ansdell G. Community Music Therapy & the winds of change. *Voices: A World Forum for Music Therapy.* 2002;2(2). doi:10.15845/voices.v2i2.83.
44. Silverman M. Music in the Social and Behavioral Sciences: An Encyclopedia. In Thompson WF, ed. *SAGE Reference*. SAGE Publications; 2014:168-171.
45. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3:77-101. doi:10.1191/1478088706qp063oa.

Biographical Statements

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Full-Length Article

Part 2:

Community Music Therapy and El Sistema: *A Multiple Case Design Study Reflecting Music's Empowerment in Marginalized Communities*

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Abstract

Music is an accessible tool that has been used to foster change within people and societies, even in those places facing socioeconomic marginalization due to poverty, discrimination, and lack of access to resources. Social capital has to do with the resources and networks available within a society, which may help confront issues faced by individuals and communities. Community Music Therapy (CoMT) and the music education movement known as *El Sistema*[*] both utilize music—understood as social capital—to address social justice. Part I of this article defines CoMT and examines the purpose and goals of CoMT and El Sistema comparatively, and the ways in which their programs may address the empowerment needs of individuals and communities facing socioeconomic marginalization. Part II reviews the findings of a study that leads toward a suggestion of how these two approaches may be able to work synergistically to achieve their shared goals. Findings reveal many parallels and divergences between El Sistema and CoMT which may be useful in advancing change. This article defines the role of the music, program structure, social justice goals, outcomes, music education practice, areas of intersection, existing scholarly research, and criticisms each has received, in an effort to further advance the understanding and possibilities music's influence may have on society.

Keywords*: CoMT, El Sistema, social justice, social capital, community*

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Statement of Purpose

Musical capital can be a powerful source of change and health in communities and individuals, a fact demonstrated by the values, principles, and outcomes of CoMT and El Sistema. CoMT focuses on the health and welfare of society and its individuals, while El Sistema focuses on artistic excellence, social and emotional change, and well-being through music. While the focus of these programs lies in different aspects of the health care continuum, both CoMT and El Sistema rely on the fundamental positive outcomes that can be obtained when communities and individuals have access to and are able to participate in music-making and culture. There is no literature that comparatively examines the ways in which CoMT and El Sistema programs may address the empowerment needs of individuals and communities facing socioeconomic marginalization and suggests how they may work synergistically to achieve their shared goals. This study was undertaken to begin to answer such questions and provide a basis for further research.

Method

Design

The study utilized a multiple case study design. This allowed the researcher to learn about CoMT and El Sistema programs from experts with a variety of perspectives. The multiple-case design was comparative and explanatory. All the cases were studied simultaneously. The researcher conducted qualitative interviews, using a constructionist approach, with participants in CoMT and El Sistema or El Sistema–inspired programs. This type of qualitative research was chosen because it allows for enough flexibility to be able to fully explore all aspects of the programs.[44] The information obtained from the interviews was coded and categorized into emerging themes and subthemes. The theoretical sensitivity of the design was evaluated by triangulating with existing peer-reviewed literature, relating to the researcher's personal and professional experience, and by member-checking (i.e., obtaining feedback from participants by sharing the study results after the initial analysis).

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[*] *El Sistema* is a music education program founded by Jose Antonio Abreu in the 1970s in Venezuela. From the beginning, the main aims have been to provide access music education at no cost , as well as addressing social goals. Over the years its success stories have spread and many El Sistema-inspired programs have been started around the world.

Participants and Setting
Four participants were recruited for the study. They included professionals who provide CoMT and professionals who work in El Sistema programs around the world. Interviews were conducted in person or via Skype.

Recruitment. Two of the participants recruited were professional music therapists who provide CoMT services. The other two participants were music educators and researchers who work in El Sistema or El Sistema–inspired programs. The sampling method used for recruitment was both purposive and convenience-based; based on prominence in the literature. The participants had to be at least 18 years old to participate. The recruitment process involved an e-mail.

Consent process. All participants were asked to sign the informed consent form prior to beginning the interview. All participants were informed about the study, including its aims and purposes, as well as their role in choosing to participate. Participants were offered the option to receive the results at the end of the study.

Instruments and Equipment
A set of basic questions served as the point of departure for the interviews. All interviews were recorded with a Zoom H2n audio recorder, as well as with an iPhone 6s Voice Memo for backup.

Procedure
The basic questions served only as a guide for the interviews. Interviews were semi-structured yet open-ended. The participants could decide to move on to a different question at any time.

Data collection. Data was collected in the form of interviews. The raw data was transcribed rigorously and culled prior to analysis. Data transcriptions were checked against the original recordings to ensure accuracy and to ensure they captured the original nature of the participants' responses. The researcher compiled a written case summary record for each interview as well as a master inventory of the data corpus for the study. Data analysis alternated with data collection. Member-checking was performed after initial analysis.

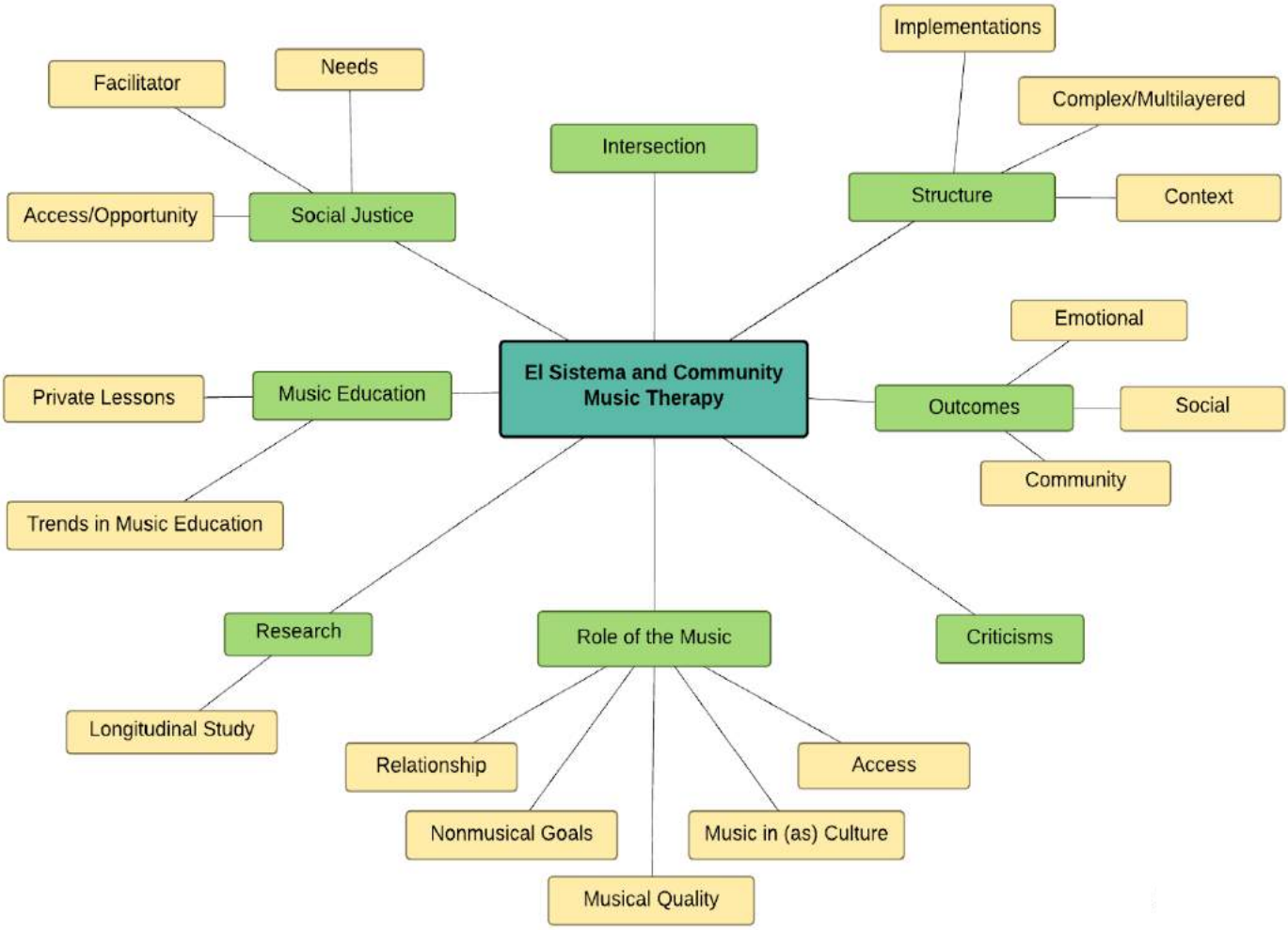
Data analysis. The researcher conducted a thematic analysis of the data. The data was approached through an inductive perspective. Due to the nature and goals of these programs, the researcher focused on a constructionist approach. The researcher inspected the themes and subthemes at the latent level. As per thematic analysis procedures set forth by Braun and Clarke,[45] there were six steps to data analysis; these were not carried out sequentially but in a recursive manner. The first step to data analysis was becoming familiar with the data. The second step was separating the interview data into meaning units, or basic segments and elements, for the entire data set. Each meaning unit was assigned a unique code. Data extracts were copied from individual transcripts, making sure each code was inclusively collated. The third step in data analysis was searching for themes. No themes, patterns, or meaning units were abandoned at this stage. The fourth step in data analysis was reviewing the themes for internal homogeneity and external heterogeneity. Recoding of the data occurred throughout this process, but the coding process ended once refinement of meaning units, themes, and subthemes ceased to add meaning to the analysis. The fifth step in data analysis was defining and naming each theme and analyzing the data within the themes. A visual representation of the themes and subthemes together was developed (Fig. 1), as well as individual diagrams for each theme, subtheme, and their codes (Figs. 2–26). The last step in data analysis was writing the report. Internal validity was assured by triangulation with existing literature, member-checking, and making the researcher's bias explicit. External validity was assured by providing a rich description of the data collected and by means of expert review.

Ethical Considerations and Precautions
The study was submitted to the IRB at Montclair State University for approval prior to recruitment. Participation in the study was voluntary. Participants could choose to stop at any time. Interviews were transcribed and coded so there was no identifying information from the participants. All material from interviews was kept confidential. The researcher maintained all digital files and media in a password-protected personal computer, to maintain privacy, security, and confidentiality during and after the completion of this project.

Data Results
Eight themes and seventeen subthemes were generated from the meaning units from all the interviews (Fig. 1). The following themes/subthemes were found: *role of the music (relationship, nonmusical goals, musical quality, music in(as) culture, access)*; *music education (private lessons, trends in music education)*; *outcomes (emotional, social, community)*; *structure (implementations, complex/multilayered, context)*; *social justice (needs, facilitator, access/opportunity)*; *research (longitudinal study)*; *intersection*; and *criticisms*.

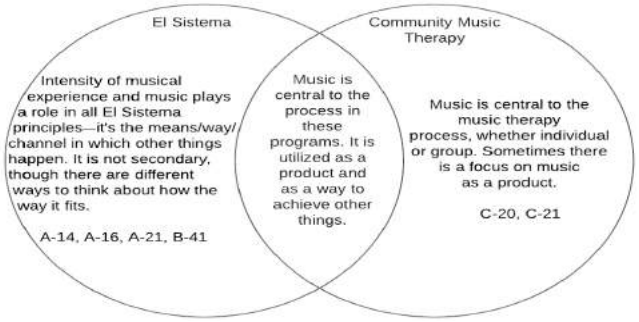
Role of the Music
Data on El Sistema and CoMT reveals that they align in considering music as central to the process and as something that can be utilized, whether as a product or not, to achieve other things (goals). (Fig. 2). Data on El Sistema shows that music has a role in all of the basic tenets of El Sistema as it is "the way, it's like the means through which all these other things happen" (Interview A). El Sistema programs also focus on intensity of musical and social experience. While the focus appears to be in a spectrum between social and musical aims,

Figure 1. *Themes and Sub-Themes*



music is not secondary to El Sistema. Data on CoMT shows that "music is often central to the therapeutic processes" and it belongs to the whole group (Interview C). At times, music as a product in the form of performance and skill acquisition is a focus within CoMT practice.

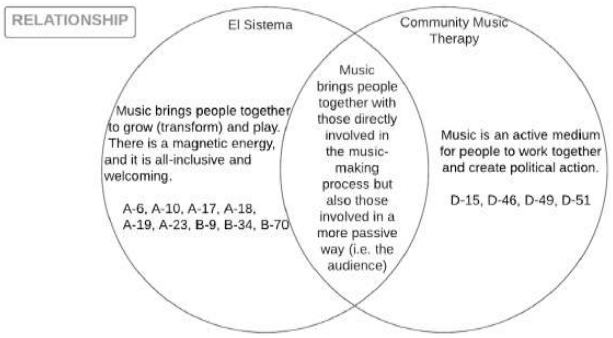
Figure 2. *Role of the Music*



Relationship. The role of the music in relationships is emphasized in the data for both CoMT and El Sistema, as it brings people together both directly in the music-making process and indirectly for those involved in a more passive way (i.e., families, the community, audiences) (Fig. 3). Aspects of El Sistema practice that deal with relationships include ensemble learning and playing experiences (making music together), radical inclusion, peer learning, family and community involvement, engagement, and bringing people together as a whole. "[It's about] developing relationships, it's about understanding that music is about relationships. In my view, the relationships are so important to build because otherwise it becomes these two parts that are coming together, but not" (Interview B). The role of music in relationships also emerges in the CoMT data. Music is an active medium for people to become equal, work together, and create political action. It "is an active medium that you work through, with

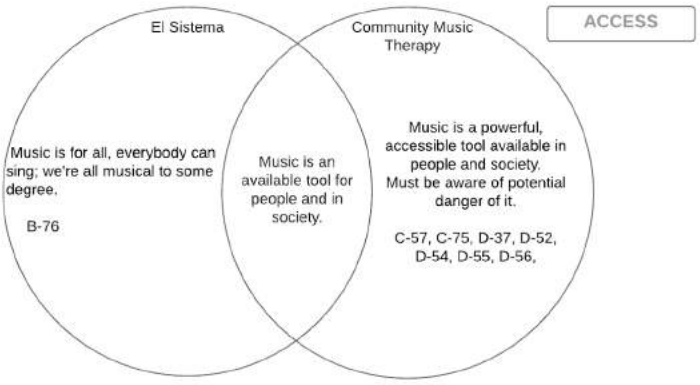
people in action" (Interview D). It can act as a vehicle of communication between groups.

Figure 3. *Role of the Music*



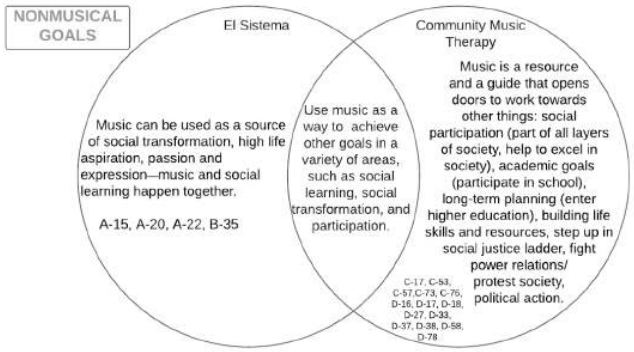
Access. Data from both CoMT and El Sistema programs shows that music is a readily available tool for people and in society (Fig. 4). Data from El Sistema characterizes music as being for all, as "everybody can sing...we're all musical to some degree" (Interview B). On the other hand, data on CoMT reveals music as a powerful and "accessible tool" available to people and society (Interview C). Music has a high degree of social and cultural capital, which can be used to promote movement up the social justice ladder. The data also shows, however, that "music can [also] be dangerous, it can be harmful, it can be boring, it can be annoying," which is important to keep in mind when working in marginalized communities (Interview D).

Figure 4. *Role of the Music*



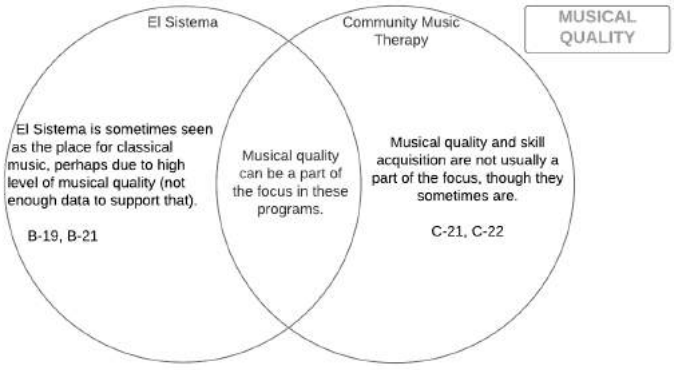
Nonmusical goals. Data gathered demonstrates the use of music as a way to achieve nonmusical goals such as social learning, social transformation, and social participation in both approaches (Fig. 5). Data on El Sistema shows that music can be used as a resource or instrument of social transformation, high life aspiration, and passion and expression. It shows that music and social learning happen together: "[Y]ou can't separate it out, like there is social learning over here and music learning over there. They are together, and at the same time" (Interview A). Similarly, data about CoMT shows that music can be seen as a resource and a guide that "opens different doors" (Interview C) and can be used to work towards other things, such as social participation; future planning; building life skills and resources; and moving up the social ladder by getting involved in political action, fighting power relations, and protesting society (Interview D).

Figure 5. *Role of the Music*



Musical quality. Data shows that although musical quality can be part of the focus in these approaches, it all depends on the needs of the population being served (Fig. 6). Data about El Sistema reveals that it is sometimes seen as *the* place for classical music. This perhaps has to do with people saying: "that there is that rigor in El Sistema, in terms of the musical quality," yet there probably isn't "enough data to be able to say that" (Interview B). El Sistema seems to place a much greater emphasis on musical quality, but it depends on the focus of the specific program. Data shows that musical quality is not usually the focus in CoMT: "[S]ometimes there could be more of a focus on the music as a product" (Interview C).

Figure 6. *Role of the Music*



Music in (as) culture. Data on El Sistema and CoMT shows that there is an important place for music in many cultures but practitioners in these programs place a greater value on music as a way of coming together; there are places where music is understood as social and cultural capital or as a resource in culture and the community (Fig. 7). Data on El Sistema shows

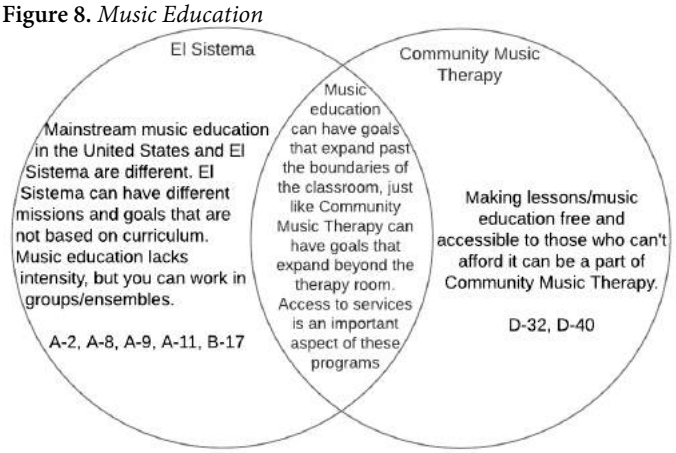
that Latin America has a deep cultural understanding of music and the role it can play in social engagement, as well as of the place of the arts in the strength of a culture. North American and European cultures value music highly but music is not prized so much as a "way of coming together" (Interview A). Data on CoMT shows that South Africa has a deep understanding of music in culture (Interview C), in which music is seen as being for everyone as "music has a very high degree of social capital" (Interview D).

Figure 7. *Role of the Music*

Music Education

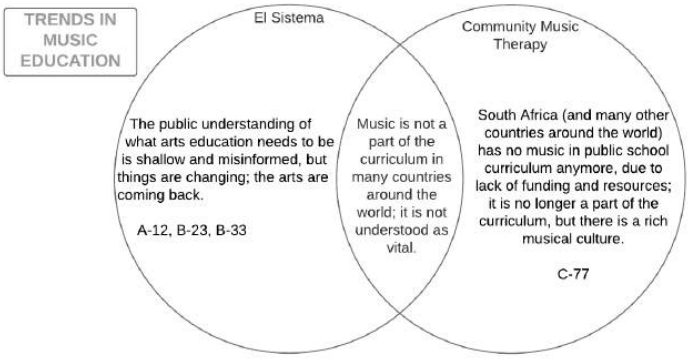
Data on El Sistema and CoMT shows that music education can have goals that expand past the boundaries of the classroom, just as CoMT can have goals that expand beyond the therapy room (Fig. 8). Data on music education reveals that mainstream public music education in the United States is very different from that provided within El Sistema-inspired programs. The main reason for this disparity is that "El Sistema–inspired programs tend to have the ability to afford to have different missions and goals, where in the schools the goals are based on the curriculum and the national and state standards" (Interview B). Further, music education in schools is perceived to lack the element of intensity often found in El Sistema. Data on CoMT shows that making lessons or music education free and accessible to those who can't afford it can be a part of CoMT, such as by helping "a young man [to] learn some guitar chords, [which he] can easily exchange...into social capital" (Interview D).

Figure 8. *Music Education*



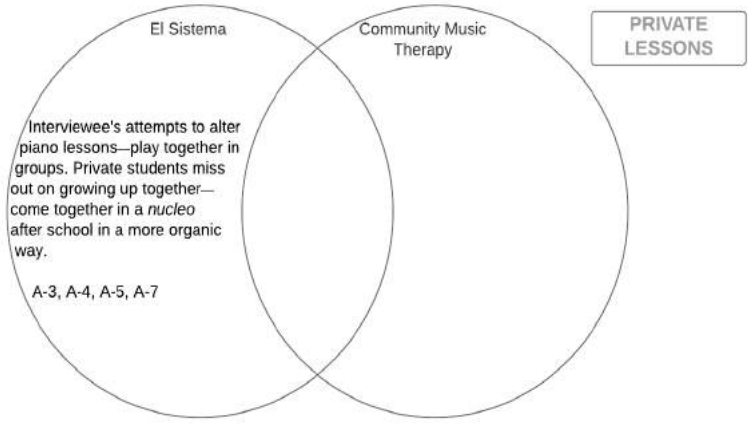
Trends in music education. Data on El Sistema and CoMT reveals that music is not a part of the educational curriculum in many countries around the world and that music education is not often seen as vital (Fig. 9). Data on El Sistema shows that the "public understanding of what arts education needs to be is shallow and misinformed" (Interview A). However, "music education is coming back...and in some ways, we have to thank El Sistema for that" (Interview B). There is also a "positive trend in music education to...try new things and break the norm" (Interview B). Data on CoMT and music education shows that South Africa, as well as many other countries around the world, has no music in schools any more: "[M]usic education is not part of the [public] school curriculum any more, [due to lack of resources]," despite the country's rich musical culture (Interview C).

Figure 9. *Music Education*



Private lessons. Data on El Sistema includes an account of one interviewee's attempts to alter piano lessons so as to include some of the experiences that El Sistema offers (Fig. 10). She had students play together in groups, as "piano students miss a lot in the fact that they don't grow up playing with other kids. They grow up playing by themselves" (Interview A). Students in El Sistema "come together in a *nucleo* after school in a more organic way" (Interview A). There was no data obtained on private lessons from CoMT practitioners, even though private lessons can be a part of CoMT practice.

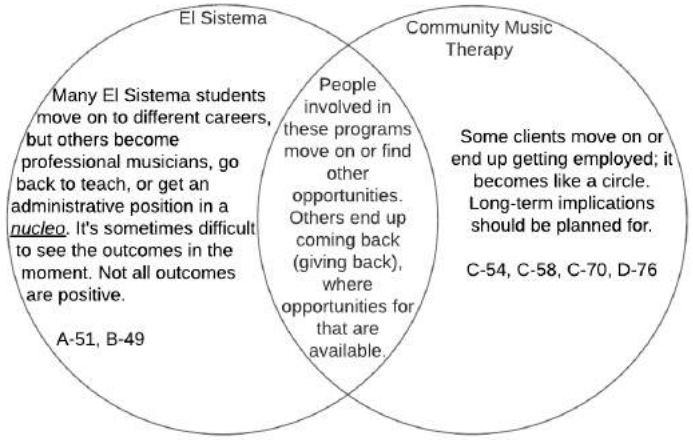
Figure 10. *Music Education*



Outcomes

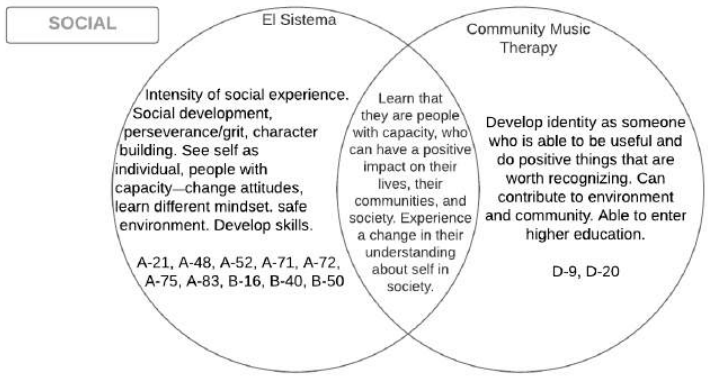
Data from both El Sistema and CoMT showed that people who participate in these programs may either move on and find other opportunities or come back and work in the program, when this is possible (Fig. 11). Data on El Sistema reveals that many students move on to different careers while others become professional musicians, go back to teach in a *nucleo*, or even obtain an administrative position in a *nucleo*. Not all outcomes are positive, however, as some students become too dependent on the program and can't move on: "[T]his documentary...show[s] one kid who became so dependent on the program that…it was hard for him to leave, so he went back into the world of drugs" (Interview B). Data from CoMT shows that while some clients move on from therapy, others end up employed to run younger groups as a community musician (if such an opportunity is available for them in the program). Thus "it [can be] like a circle: Start in therapy, then the after-school program, and then come back as an employee/intern" (Interview C).

Figure 11. *Outcomes*



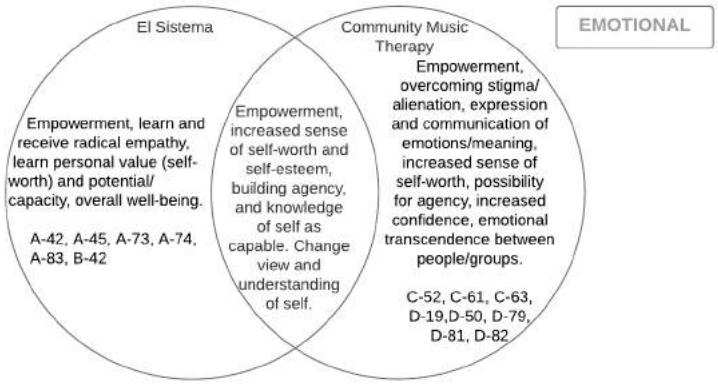
Social. Data on El Sistema and CoMT shows that participants are able to learn that they are people with capacity, people who can have a positive impact on their own lives, on their communities, and on society; they experience a change in their understanding about themselves *in* society (Fig. 12). Data on El Sistema reveals that students experience transformational social development through the intensity of the social interactions they encounter within a safe environment. This aids in learning perseverance and grit, builds character, changes attitudes and capacities for intellectual growth and social cooperation, and helps participants learn to see themselves both as individuals and people with capacity, which is a "different mindset than a lot of kids grow up learning" (Interview A). Data on CoMT shows that participants develop an identity "as someone who is able to do something positive, something useful, something worth recognizing" (Interview D), as well as someone able to contribute to the environment and the community. Participation can also "facilitate the possibilities the individual has to have to enter higher education" (Interview D).

Figure 12. *Outcomes*



Emotional. Data on El Sistema and CoMT substantiates the idea that the emotional outcomes for participants include empowerment, increased sense of self-worth, increased self-esteem, building agency, and knowing and understanding oneself as capable; these programs can fundamentally change the view and understanding of the self (Fig. 13). Emotional outcomes for El Sistema participants include empowerment, learning and receiving radical empathy, increased self-esteem and sense of self-worth, improved overall well-being, and learning "that each one of them is a person with value, who is really important and has good things to offer" (Interview A). Emotional outcomes for CoMT include empowerment, overcoming stigma and alienation, expression and communication of emotions or meaning, increased sense of self-worth, increased possibility for agency, the sense of mastering a skill, increased confidence (self-esteem), and "emotional transcendence between people, and [experiencing a] community of understanding" (Interview D).

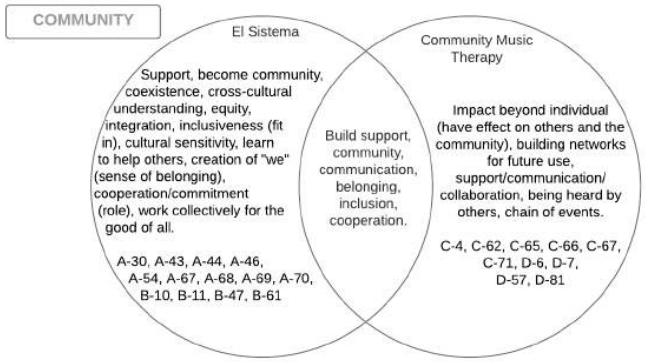
Figure 13. *Outcomes*



Community. Data on El Sistema and CoMT shows that for both programs, community outcomes include building support, building a community, strengthening communication among people, creating a sense of belonging,

inclusion of all, and encouraging cooperation and collaboration (Fig. 14). Community outcomes for El Sistema can include receiving support, community building, gaining cross-cultural understanding and cultural sensitivity, increasing equity, facilitating "fitting in" (inclusiveness), learning about people's capacity to help others, the creation of a "we" (sense of belonging), increasing cooperation and commitment, and "coexistence [among participants], integration, and working collectively for the good of all" (Interview A). Community outcomes for CoMT can include building networks (social capital) for future use, building structures of participation, support, communication and learning collaboration, being heard by others, and creating a chain of events or "ripple effect," which means that the outcomes are "broader that just the one person, that [they stretch] out back into the community" (Interview C).

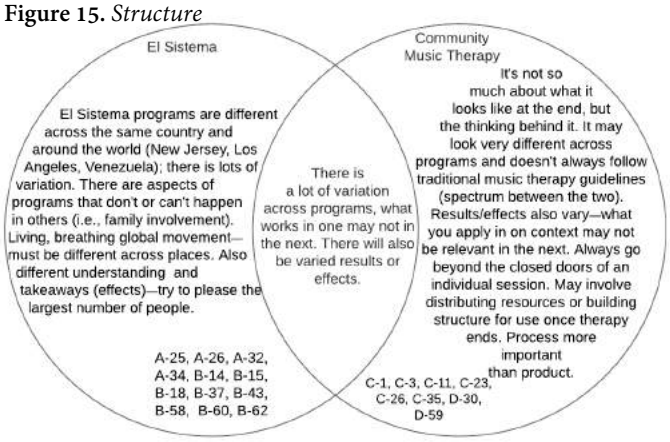
Figure 14. *Outcomes*



Structure

Data on El Sistema and CoMT shows that there is a lot of variance across both types of approaches; what works in one may not work in the next. As a result, there will also be varied results and effects (Fig. 15). Data from El Sistema showed that there is a lot of variation among El Sistema programs around the world; each program, even within the same country, is different. This is the case for the programs in New Jersey and Los Angeles, as well as in Venezuela. There can be certain aspects of one program that don't or can't happen in others (i.e. family involvement). Furthermore, different people are going to have different understandings of the program and different takeaways, but the idea is to attempt to please "the largest number, not just two or three" (Interview B).

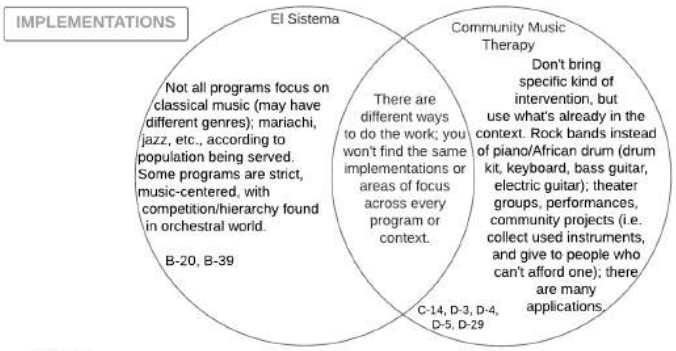
Figure 15. *Structure*



Data from structure on CoMT shows that it "has more to do [with] how you're thinking about it and how you're understanding the work" (Interview C). There is also a spectrum between traditional music therapy and CoMT practice, and the latter does not always follow conventional guidelines. The results and effects also vary, since what "you apply in one context [may] get similar results, but it might not necessarily be relevant to another context" (Interview C). The idea is to allow the work to expand beyond the closed doors of a session by distributing resources or building structures for use once therapy ends.

Implementations. Data about El Sistema and CoMT shows that for both approaches, there are many different ways to do the work; one is unlikely to find the same areas of focus and implementations across every program or context (Fig. 16). Data for El Sistema reveals there are programs that are not based just on classical music. Each program is implemented to best suit "the population [and community] that they serve" (Interview B). There are, however, some El Sistema programs that are strict and music-centered and where one finds the competition and hierarchies that are common in the orchestral world. Data on CoMT shows that therapists don't bring specific interventions but use what already exists and is already available in the contexts in which carry out the work. There are many different types of CoMT implementations, such as rock bands, theater groups, performances, and community projects. One interviewee gave as an example of a community project collecting "used music instruments to hand them over to people who can't afford their own" (Interview D). Another type of implementation is the use of instruments usually associated with rock bands (drum kits, keyboards, and electric guitars) instead of the more "traditional" music therapy instruments (piano, African drum).

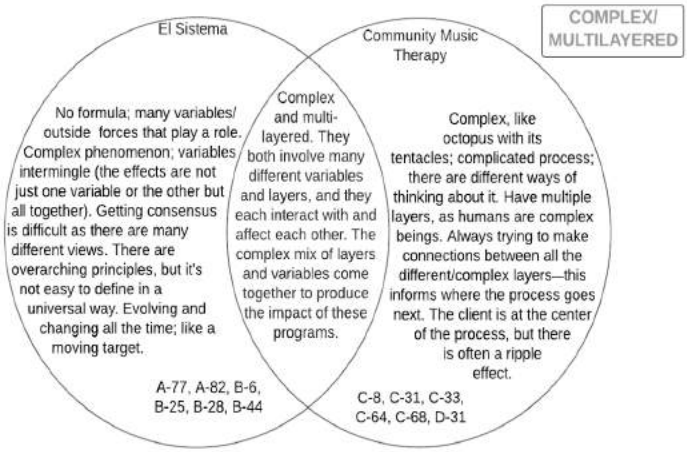
Figure 16. *Structure*



Complex/multilayered. Data for El Sistema and CoMT demonstrates that both of these approaches are by nature complex and multilayered; they both involve many different variables that interact with and affect each other. The complex mix of layers and variables comes together to produce the

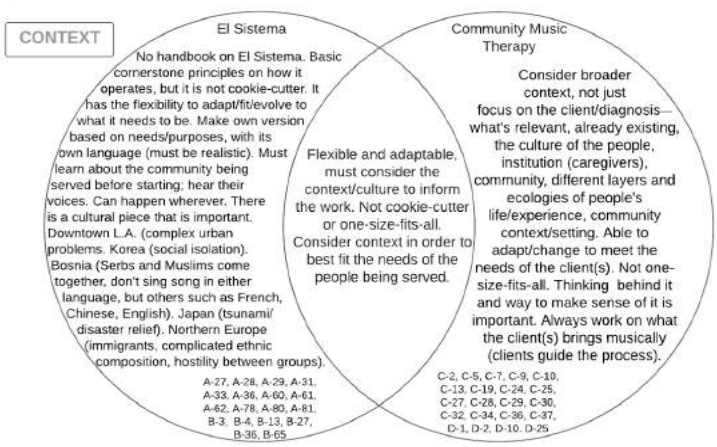
impact of these programs (Fig. 17). Data on El Sistema reveals that there is no one "formula." There are many variables and outside forces that play a role in creating the structure of El Sistema programs; it is "always changing; it's like trying to pinpoint a moving target" (Interview A). El Sistema is a complex phenomenon, whose variables intermingle. It is difficult to get a consensus, as there are many different views. There are overarching principles, but it's not easy to define or "universal in any way" (Interview B). Data on CoMT also shows that it is complex, like an "like an octopus with its tentacles" (Interview C). CoMT is a complicated process, and there are many different ways to think about it. It has many different layers, as it reflects the complex nature of human beings. The client is at the center of the process; the therapist is always trying to make connections between all the different, complex layers; and there is often a ripple effect.

Figure 17. *Structure*



Context. Data for El Sistema and CoMT shows that both of these approaches are flexible and adaptable; they both use careful consideration of the context and culture of the people and community served to inform the work and best meet the needs of their participants; neither approach is cookie-cutter or one size fits all (Fig. 18). Data on El Sistema reveals that while there are basic, cornerstone principles regarding how it operates, there is no "handbook" to follow. El Sistema is "not cookie-cutter" (Interview A), as it has the flexibility to adapt, fit, and evolve into what it needs to be. It is important to learn about the needs and hear the voices of the community being served before beginning a program, as the cultural piece is important. Examples from downtown Los Angeles, Korea, Bosnia, Japan, and northern Europe—places that have vastly different needs—show the context-specific nature of El Sistema (Interviews A and B).

Figure 18. *Structure*

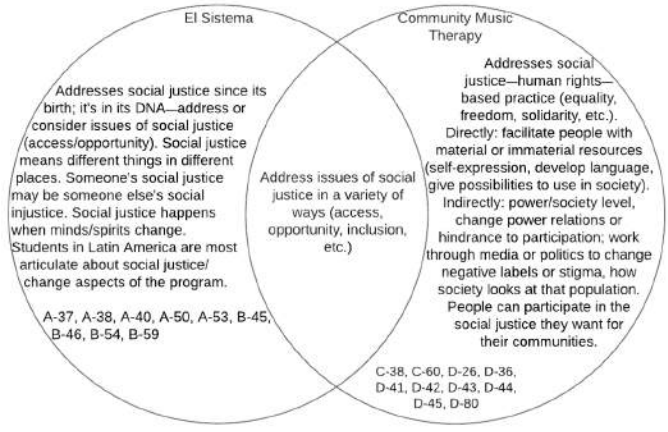


Data about CoMT shows that programs consider the broader context in which the work occurs rather than merely focusing on the client and the individual diagnosis. CoMT programs are able to adapt and change to meet the needs and demands of the clients and the context; it is "not a one-size-fits-all approach" (Interview C). The thinking behind the work and the way to make sense of it is important, as the process is guided by what the clients bring in musically. Examples of the diverse contexts in which CoMT work can occur include schools; child welfare programs (in institutions, in foster care); mental health units; and elder care.

Social Justice

Data for El Sistema and CoMT shows that both of these programs address issues of social justice in a variety of ways (Fig. 19). Data on El Sistema shows that it addresses or at least considers issues of social justice, such as access and opportunity, since its birth. Social justice is "like in its bones, in its DNA" (Interview A). It means different things in different places, and one person's social justice may be someone else's social injustice (Interview B), yet it happens when minds and spirits change (Interview A).

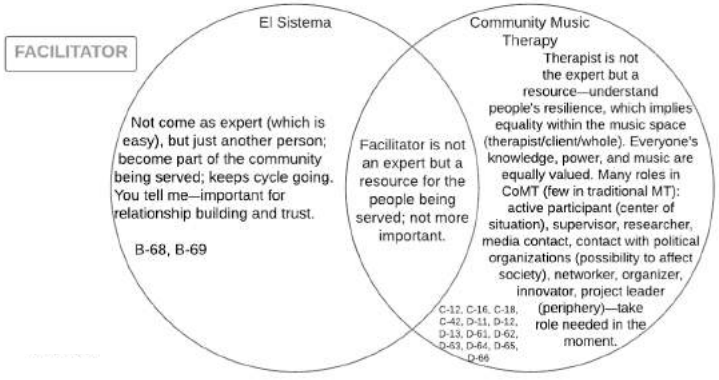
Figure 19. *Social Justice*



Data on CoMT shows that it also addresses social justice, as "the practice is human rights–based" (Interview D). It focuses on issues such as equality, freedom, and solidarity. Social justice goals may be addressed directly or indirectly in CoMT practices. They are addressed directly by providing people with material or nonmaterial resources, such as self-expression, language development, and giving possibilities to use in society, and addressed indirectly through changing power relations or removing hindrances to participation. In other words, CoMT practice works at the level of power and society, through media and politics, to attack negative labels or stigmas and change how society views a particular population. It also works by showing people that they can be a part of the social justice they want for their communities.

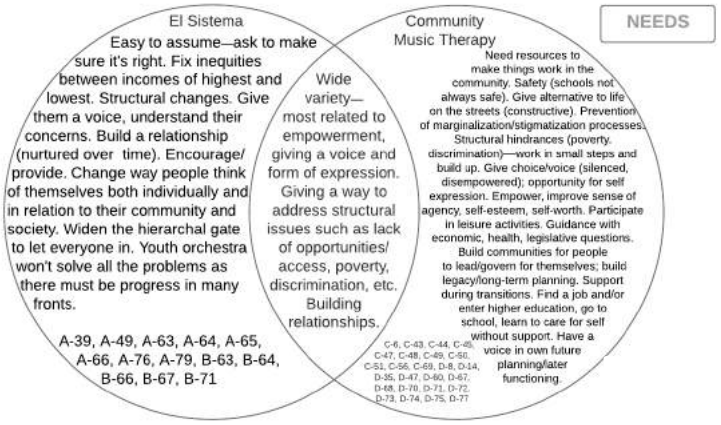
Facilitator. Data about El Sistema and CoMT shows that in both approaches the facilitator is not an "expert" or seen as more important. Instead, the facilitator is a resource for the people being served (Fig. 20). Data on El Sistema shows that the facilitator must "not come in as the expert, which is easy, but just a person just like everybody else" (Interview B). Instead, facilitators should aim to become a part of the community being served by sharing, relating, finding middle ground, and asking about participants' needs. Data from CoMT shows that the therapist is not the expert but looks at the resources and resilience within the space and the client population, which implies equality within the therapy space (therapist/client/whole). Everyone's knowledge, power, and music are equally valued. The CoMT therapist is perceived to perform many different roles, "[taking on] the role that they need to in the moment" (Interview D).

Figure 20. *Social Justice*



Needs. Data about El Sistema and CoMT shows that both of these approaches address a wide variety of needs. Most of these needs are related to empowerment, giving people a voice and form of expression, building relationships, and giving people a way to address structural issues, such as lack of opportunities and access, poverty, and discrimination (Fig. 21). Data on El Sistema needs underlines that although it is easy to assume what people need, it is important to ask to make sure one's understanding is correct. The types of needs addressed include structural changes, such as redressing inequities between the incomes of the highest and lowest in society, and changes within the person, such as giving people a voice, understanding people's concerns, encouraging and providing support, building a relationship over time, widening the opening opportunities to let everyone in, and changing the way people think about themselves both individually and in relation to their community and society (Interview A and B).

Figure 21. *Social Justice*



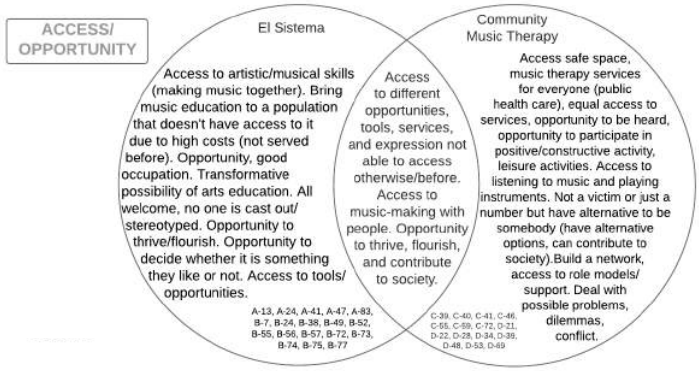
Data on needs in CoMT reveals that we need resources to make things work in the community. The types of needs addressed include safety, prevention of stigmatization and marginalization, and dealing with structural hindrances, such as poverty and discrimination. Emotional needs include giving people a choice and voice; providing opportunities for self-expression; empowerment; and improving people's sense of agency, self-esteem, and self-worth (Interviews C and D). Participation needs include providing opportunities to participate in leisure activities, building communities for people to lead and govern for themselves, and giving a constructive alternative to life on the streets (Interviews C and D). Guiding needs include providing guidance in economic, health and legislative questions, building a legacy and long-term planning, providing support during transitions, and providing help in finding a job or entering higher education (Interview D).

Access/Opportunity. Data from El Sistema and CoMT reveals that these approaches provide access to opportunities, tools, and services that participants have not been able to access otherwise or before. These programs give participants the opportunity to thrive, flourish, and contribute positively to society (Fig. 22). Data on El Sistema shows that there is a focus on providing access to transformational artistic and musical skills, as well as to other tools and opportunities, by learning an instrument and making music together. El Sistema is perceived by practitioners as providing an opportunity to thrive and flourish, as a good way to occupy one's time by

providing opportunities for advancement, thus having implications in the long-term (Interviews A and B).

Data shows that CoMT practice can be about being able to access a safe space where there is equal access to services—music therapy services for everyone (Interview C). It is an opportunity to be heard (empowerment) and to participate in positive and constructive leisure activities (Interview D). It is about providing access to listening to music and playing musical instruments, and in that process learning that one is not just a number or a victim of circumstances: there are alternative options (Interviews C and D). It is also about building a network; having access to role models and support; and dealing with possible problems, dilemmas, and conflicts (Interview D).

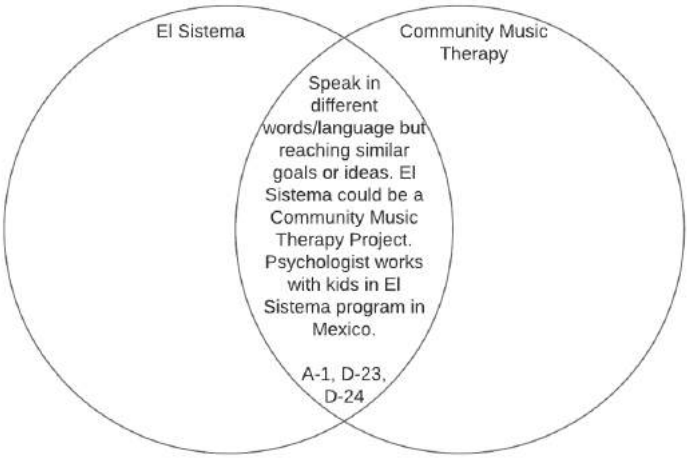
Figure 22. *Social Justice*



Intersection

According to interview D, El Sistema "sounds like a CoMT project...we share some of the same thinking here a bit…it is spoken [about] in different words [or] language but [it seems to be] reaching [the] same goals [and] ideas" (Fig. 23). In Mexico, there is a psychologist who works with the kids in an El Sistema *nucleo*—bringing education and therapy into one place.

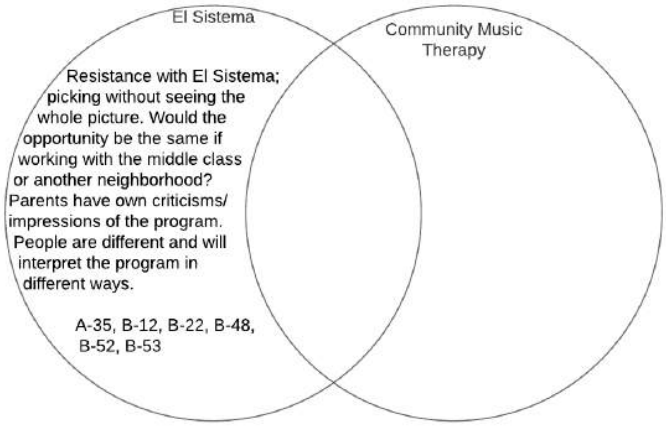
Figure 23. *Intersection*



Criticisms

Data shows that "some people have resistance with El Sistema" (Interview B) (Fig.24). These critics seem to be picking at something without seeing the whole picture (Interview A). Parents also seem to have some criticisms and negative impressions of the program; this makes sense, as people are different and will interpret the program in different ways (Interview B). Data obtained reveals no specific criticisms of CoMT, though some criticisms exist especially in terms of boundaries.

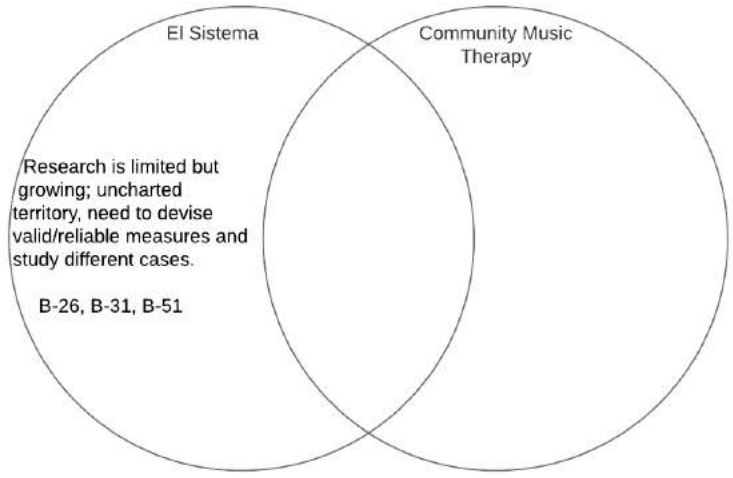
Figure 24. *Criticisms*



Research

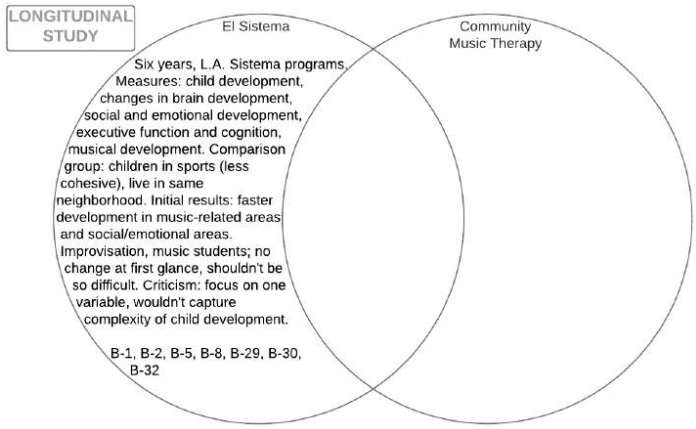
Data data shows that there is a limited body of research on El Sistema (Fig.25). It is growing, however, and diverse cases must be studied (Interview B). Since this is "uncharted territory in some ways," it is a "problem of us devising [valid and reliable] measures, really capturing what we're looking for" (Interview B). Neither interviewee made comments with respect to research on CoMT.

Figure 25. *Research*



Longitudinal study. A longitudinal study about the Los Angeles Sistema programs has recently been published (Fig. 26). The study has been done over the course of the past six years. It looks at a variety of measures, such as child development and changes in brain development, executive function and cognition, social and emotional development, and musical development. The comparison group is made up of children in sports and children who live in the same neighborhood but do not participate in an El Sistema program. Initial results found faster development in music-related areas and social and emotional areas for El Sistema participants. Music students were asked to improvise and showed no changes at first glance. Researchers utilized case studies and found that young musicians can be strong improvisers only under certain conditions. The study was criticized by those who say it should focus on just one variable. That would not capture the complexity of child development, however. Data obtained did not reveal anything specific regarding research in CoMT.

Figure 26. *Research*



Discussion and Analysis

The purpose of this study was to comparatively examine the ways in which CoMT and El Sistema programs may address the empowerment needs of individuals and communities facing socioeconomic marginalization and suggest how these two approaches may be able to work synergistically to achieve their shared goals. Interview data provided insight into aspects of the purpose and questions of this study that both reflect and expand on the information that already exists in the literature about these approaches. This study found that these programs show parallels as well as divergences in several areas, including the role of the music, their structure, their social justice aims, their outcomes, their implementation of music education, the existing research, and the amount of criticism each has generated.

Music, both as an object and as a resource, is central to both El Sistema and CoMT practice. This study found that for El Sistema and CoMT, music is an accessible resource that exists within people, communities, and culture and that can provide a way to accomplish nonmusical goals, such as forging relationships between people who participate in music-making. These programs rely on the basic premises that all people are innately musical, and that music is a resource that exists in some form across many different cultures.[5,16,20] They also focus on the fact that participation in music-making can lead to positive change in other areas of individual and community life and thus have an impact that goes beyond the immediate action of making music together.[6,8,19]

In these programs, music is not only about the art, but also about other social objectives; musical and nonmusical goals are intertwined and interrelated.[12,26,28,29] Their social objectives include the formation and performance of relationships, which reflect aspects of daily life and society—by reaching *communitas*, a state where social distinctions disappear, allowing everyone to become equal within the community that is being formed in the moment.[16,19,20,27,42] Being able to access *communitas* within the social space of the *nucleo* or the CoMT session can have a positive impact on other aspects of life outside that space, such as health, emotional well-being, and social development.[1,9]

One main difference El Sistema and CoMT practice has to do with the emphasis on musical quality. While performance can be an important aspect of both programs, CoMT places a greater emphasis on the process that takes place and the thinking behind what's offered, rather than the product that results.[1,6,16] While El Sistema programs vary as to how much emphasis they place on the music versus the social and emotional well-being of their participants, there seems to be a greater emphasis on overall musical quality and excellence in general.[30]

A lack of structural uniformity is also one of the main similarities between El Sistema and CoMT. There is a lot of variation of designs and implementations across different El Sistema and CoMT programs, as each implementation is context-based and addresses a number of complex and multilayered variables to best serve the needs of the particular population being served. Both of these programs are flexible and evolve according to the needs of the participants. In CoMT, practitioners always consider the culture and context in which the work is taking place, and practice is not standardized.[1,6,13] In El Sistema, each *nucleo* has the flexibility to develop its own personality and way of working while evolving constantly to meet the needs of the children and communities being served.[26,28,30]

Even though each approach starts out with a superficially similar structure for its programs, the way of working is fundamentally different, especially as they come from two different fields. Both El Sistema and CoMT place an important emphasis on performance.[1,13,16,26] But El Sistema focuses on orchestra, choir, and band, with an emphasis on musical

excellence,[26,28,29] while CoMT makes use of different types of interventions, such as theater groups, community projects, and musicking in any form it may take; for CoMT, the process is always more important than the product.[1,3,6,13,16] Regardless of the structure in which the service is provided, both of these programs may show a deep commitment to addressing social justice goals.

Both El Sistema and CoMT work to address the needs of people or communities facing social and/or economic marginalization. This study found that El Sistema and CoMT practice may address issues of social justice, especially in terms of access, opportunity and inclusion, by making an effort to understand and listen to the needs of the people and the community being served and by emphasizing that the facilitator is not an expert but just another member of the community. People dealing with socioeconomic marginalization face a host of issues, including lack of access and opportunities, structural issues such as poverty and discrimination, inequality, and injustice; these issues often lead to stress, disconnection from people and society, decreased health, and a persistent and debilitating sense of injustice.[1,15,34]

El Sistema and CoMT work to address issues of social justice in a variety of ways, but primarily by providing access to and opportunities for music-making and social participation.[1,26] They address the most basic human rights, promote empowerment, provide equal access to resources and opportunities participants would not otherwise have, create opportunities for expression through music-making, give people a voice, build relationships, encourage a sense of belonging in a group, and make sure that everyone is included.[1,15,17,24,26,30,35]

El Sistema and CoMT view the role of the facilitator differently and target different populations as participants who will engage in music-making. Even though not coming as an expert is an aspect of El Sistema practice, it does not appear to be emphasized in the literature. CoMT places a relatively greater emphasis on the many different roles that a therapist can play in the process. These include participating actively in music making; being a supervisor, researcher, or contact person for media and political organizations; performing organizational work; and leading projects, i.e., taking on the role that is needed across the different ecologies.[1,4,13,14,16,18]

El Sistema and CoMT emphasize access and inclusion for everyone within their practice. El Sistema, however, only provides access to children and adolescents, while families and other community members are not directly involved in active music-making; they are only involved musically by attending concerts.[26-28,30] They may still receive some benefits, but if so, they are not due to direct involvement in active music-making. On the other hand, CoMT works with people across the life span.[1,4]

This study found that participation in El Sistema and CoMT brings outcomes within the social, emotional, and community realms. Social outcomes include learning that they are people with capacity who can contribute to society, while experiencing trust and trying out different social roles.[1,16,26,27] Emotional outcomes include empowerment, gaining a sense of hope, increased sense of self-esteem and self-worth, ability to express themselves through music, and sense of pride and achievement.[1,16,25,29] Lastly, community outcomes include healthy community and relationship building, increased sense of belonging, experiencing equality and inclusion, increased cooperation, and participation in society and culture.[15,17,26-28]

Participants in both El Sistema and CoMT may have the opportunity to move on or create a career out of working in these programs, wherever the opportunity is available, though the literature on CoMT does not emphasize this.[25,26] In Venezuela, however, El Sistema is well known for producing many great musicians and has a number of professional groups that travel around the world giving concerts and providing outreach to other El Sistema–inspired programs.[25,26]

Though this study finds that El Sistema and CoMT intersect in a variety of ways, it also shows that they diverge from each other in two principal areas: criticism and research. There are a number of criticisms that have been leveled at El Sistema over the years, a fact that is evident in some of its literature.[31,32] Criticism of CoMT exists, especially in terms of defining the boundaries in which music therapy starts or ends, but these were not evident in the literature. Furthermore, this study finds that the literature about El Sistema is limited but growing. The same can be said about CoMT research, even though this study did not produce data directly confirming this.

As explained above, this study finds that both El Sistema and CoMT often incorporate goals that go well beyond their immediate setting (classroom or therapy room) and differ from the goals pursued by conventional music education and music therapy.[3,4,23,31] This study also confirms that music is not a part of the public-school curriculum in many places around the world and that making lessons and music education free and accessible to those who can't afford it can be a part of CoMT. Although this fact does not appear in the CoMT literature surveyed (except perhaps as implied by the emphasis placed on providing resources), it is extremely important as it places what El Sistema does directly into the framework of what CoMT could look like. The literature shows that there are connections between CoMT and Community Music practice.[4] If El Sistema were to be considered a Community Music practice, then the connection with CoMT would become even more apparent and clear.

Implications and Applications

This research study has helped me learn that CoMT and El Sistema cannot be conceptualized as fixed models but should instead be considered terms that encompass a broad range of contextually-based practices. Taking this into consideration, I believe that CoMT and El Sistema practice would each benefit from combining with each other. Given the flexible and adaptable nature of these programs, there is almost an infinite number of possible ways they could come together. I believe that El Sistema would benefit from combining with CoMT by expanding the populations served and by allowing the positive outcomes to reach more people and areas of society. CoMT would also benefit from combining with El Sistema by incorporating its high level of musical excellence into the outreach that performing groups engage in, where that is in accordance with the needs of the participants being served.

From what I have seen across a number of programs in the United States, El Sistema–inspired programs are doing a wonderful job of providing access to music for many different children and adolescents. Yet there does not seem to be an emphasis on including students with disabilities. There could be many reasons for this, but if one has to do with staff members' not feeling prepared to work with children and adolescents with disabilities, then that opens up an opportunity to consult and work with music therapists. Doing so would both address the lack of opportunities for disabled children and adolescents to engage in music-making and increase the type of access and resources the programs are able to provide.

Another way services could be expanded in El Sistema programs is to serve populations other than just children and adolescents. Given that music is an accessible resource within many people and communities, it makes sense to try to provide access to music to people across the life span. The specific implementation would of course vary across contexts and the needs within them. Furthermore, musical performances could become more than just aesthetic experiences: they could serve as advocacy or as political protest and action. If these performances demonstrate a high degree of musical excellence, then the impact on the target audience and the message would be even stronger.

I have recently begun providing music therapy services at Union City Music Prouect, an El Sistema-inpired program in Union City, NJ. At the moment, music therapy occurs separately from the regular activities of the after-school program. As the program continues to grow, however, the goal is to find ways in which both aspects of the program can be integrated. I have begun thinking about different possibilities. Some of my ideas include preparing music therapy clients to perform with the orchestra or choir by providing specific parts or adaptations as needed. I would also like to start an ongoing group in which everyone in the program can participate, including students, clients, staff members, caregivers, and other members of the community.

Future Research

The area of focus in this study would benefit from further research. This study has focused on the theoretical side of how El Sistema and CoMT could come together to work synergistically towards their shared goals. The next step would be to use this theoretical framework in action research.

Conclusion

Combining these two seemingly disparate approaches can have some implications in a larger scope in communities around the world, as well as in the fields of music therapy and music education. It seems like El Sistema and El Sistema-inspired programs are either more widespread or a little more well-known around the world than CoMT or music therapy in general. Bringing CoMT into the picture would not only expand the types of services that people across different communities have access to and increase opportunities for involvement in music-making, but it would also help educate and advocate for the impact that music therapy can have on people and their communities. It could also highlight the impact that involvement in active music-making and performance can play in people's lives.

Socioeconomic marginalization causes a number of barriers to participation in life and society. People facing socieconomic marginalization deal with barriers such as lack of access to resources and opportunities, lack of connection with people and society, stigmatization, inequality, and injustice. Even though El Sistema and CoMT show parallels in the role of the music, the way in which the programs are structured, addressing social justice, and potential outcomes to participants, there are still some significant differences that likely stem from the fact that these approaches draw from two disparate fields. Despite these differences, it is probable that working synergistically would be beneficial to both CoMT and El Sistema.

References

1. Stige B, Aarø, LE. *Invitation to Community Music Therapy*. New York, NY: Routledge; 2012.
2. Aigen KS. Community Music Therapy. In McPherson GE, Welch GF, eds. *The Oxford Handbook of Music Education*. Vol 2. New York, NY: Oxford University Press; 2012:138-154.
3. Ghetti CM. Performing a family of practices: Developments in Community Music Therapy across international contexts. *Music Ther Persp*. 2016;34(2):161-170. doi:10.1093/mtp/miv047.
4. O'Grady L, McFerran K. Community music therapy and its relationship to community music: Where does it end? *Nordic J Music Ther*. 2007;16(1):14-26.
5. Amir D. Community Music therapy and the challenge of multiculturalism. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:249-266.
6. Ansdell G. Rethinking music and community: Theoretical perspectives in support of Community Music Therapy. In Pavlicevic M & Ansdell G,

eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:65-90.
7. Barcellos LRM, Alvares TS. A changing Society and a changing concept of music therapy in Brazil. In Goodman KD, ed. *International Perspectives in Music Therapy and Training: Adapting to a Changing World*. Springfield, IL: Charles C. Thomas Publishers; 2015:173-201.
8. Davidson J. What can the social psychology of music offer Community Music Therapy? In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:114-128.
9. DeNora T. The pebble in the pond: Musicing, therapy, community. *Nord J Music Ther*. 2005;14(1),57-66. doi:10.1080/08098130509478126.
10. Krout RE. Music therapy community-based clinical learning experiences here and abroad: A focus on community engagement. In Goodman KD, ed. *International Perspectives in Music Therapy Education and Training: Adapting to a Changing World*. Springfield, IL: Charles C. Thomas Publishers; 2015:103-129.
11. Pavlicevic M. Learning from Thembalethu: Towards responsive and responsible practice in Community Music Therapy. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:35-47.
12. Procter S. Playing politics: Community Music Therapy and the therapeutic redistribution of musical capital for mental health. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:214-230.
13. Stige B. Community Music Therapy: Culture, care, and welfare. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:91-113.
14. Zharinova-Sanderson O. Promoting integration and socio-cultural change: Community music therapy with traumatised refugees in Berlin. In Pavlicevic M, Ansdell G, eds. *Community Music Therapy*. London: Jessica Kingsley Publishers; 2004:233-248.
15. Krüger V, Stige B. Between rights and realities – music as a structuring resource in child welfare everyday life: A qualitative study. *Nord J Music Ther*. 2015;24(2):99-122. doi:10.1080/08098131.2014.890242.
16. Stige B. *Culture-Centered Music Therapy*. Gilsum, NH: Barcelona; 2002.
17. Vaillancourt G. Music therapy: A community approach to social justice. *Arts Psychother*. 2012;39:173-178. doi:10.1016/j.aip.2011.12.011.
18. Bruscia KE. *Defining music therapy*. 3rd ed. University Park, IL: Barcelona Publishers; 2014:210-215.
19. DeNora T. *Music in Everyday Life*. Cambridge, MA: Cambridge University Press; 2000.
20. Aigen KS. *Music-Centered Music Therapy*. Gilsum, NH: Barcelona; 2005.
21. Ruud E. *Music Therapy: Improvisation, Communication, and Culture*. University Park, IL: Barcelona Publishers; 1998.
22. Turner VW. *The ritual process: Structure and anti-structure*. Chicago, IL: Aldine Pub. Co; 1969.
23. American Music Therapy Association Code of Ethics. Musictherapy.org. https://www.musictherapy.org/about/ethics/. Published November 14, 2015. Accessed March 15, 2018.
24. Silverman M. Community Music and Social Justice: Reclaiming Love. In McPherson GE, Welch GF, eds. *The Oxford Handbook of Music Education*. Vol. 2. New York, NY: Oxford University Press; 2012:155-167.
25. Borzacchini C. *Venezuela Bursting with Orchestras*. Caracas: Banco del Caribe; 2005.
26. Tunstall T. *Changing lives: Gustavo Dudamel, El Sistema, and the Transformative Power of Music*. New York: Norton; 2012.
27. *Tocar y Luchar*. (2006). [DVD] Directed by A. Arvelo. Venezuela: Explorart Films.
28. Booth E, Tunstall T. Five encounters with "El Sistema" international: A Venezuelan marvel becomes a global movement. *Teach Artist J*. 2014;12(2):69-81. doi:10.1080/15411796.2014.878134.
29. Osborne MS, McPherson GE, Faulkner R, Davidson JW, Barrett MS. Exploring the academic and psychosocial impact of El Sistema-inspired music programs within two low socio-economic schools. *Music Education Research*. 2016;18(2): 156-175. doi:10.1080/14613808.2015.1056130.
30. Tunstall T, Booth E. *Playing for their Lives: The Global El Sistema Movement for Social Change through Music*. New York, NY: W. W. Norton & Company; 2016.
31. Baker G. *El Sistema Orchestrating Venezuela's Youth*. New York, NY: Oxford University Press; 2014.
32. Baker G. "Citizens or subjects? El Sistema in critical perspective." In Elliot D, Silverman M, Bowman W, eds. *Artistic Citizenship: Artistry, Social Responsibility, and Ethical Praxis*. New York, NY: Oxford University Press; 2016:313-338.
33. Elements of Organizational Success: Understanding Differences in Structure and Values in El Sistema USA Programs. Arts.gov. https://www.arts.gov/sites/default/files/Research-Art-Works-Duke.pdf. Published September 1, 2017. Accessed February 15, 2018.
34. Woodward S, Pestano C. Marginalized Communities: Reaching Those Falling Outside Socially Accepted Norms. In Veblen KK, Messenger SJ, Silverman M, Elliott DJ, eds. *Community Music Today*. New York, NY: Rowman & Littlefield; 2013:185-197.
35. Green P. *Equality and Democracy: A New Press Back-to-Basics Book*. New York, NY: The New Press; 1998.
36. The Ottawa Charter for Health Promotion. Who.int. https://www.who.int/healthpromotion/conferences/previous/ottawa/en/. Published November 21, 1986. Accessed October 4, 2017.
37. Fitzpatrick T, Rosella LC, Calzavara A, Petch J, Pinto AD, Manson H, Goel V, Wodchis WP. Looking beyond income and education: Socioeconomic status gradients among future high-cost users of health care. *Am J Prev Med*. 2015;49:161-171. doi:10.1016/j.amepre.2015.02.018.
38. Slinger KN. Socioeconomic Status. In Darity WA Jr., ed. *International Encyclopedia of the Social Sciences*. 2nd ed. Vol 7. Detroit, MI: Macmillan Reference USA; 2008:655-660. Retrieved September 7, 2016 from http://go.galegroup.com.ezproxy.montclair.edu.
39. Venkataramani AS, Chatterjee P, Ichiro K, Tsai, AC. Economic opportunity, health behaviors, and mortality in the United States. *Am J Public Health. 2016;*106(3):478-484. doi:10.2105/AJPH.2015.302941.
40. Jones PM, Langston TW. Community Music and Social Capital. In McPherson GE, Welch GF, eds. *The Oxford Handbook of Music Education.* Vol. 2. New York, NY: Oxford University Press; 2012:120-137.
41. Putnam RD. *Bowling alone: The collapse and revival of American community.* 3rd ed. New York, NY: Simon & Schuster; 2007.
42. Veblen KK. The Tapestry: Introducing Community Music. In Veblen KK, Messenger SJ, Silverman M, Elliott DJ, eds. *Community Music Today*. New York, NY: Rowman & Littlefield; 2013:1-9.
43. Ansdell G. Community Music Therapy & the winds of change. *Voices: A World Forum for Music Therapy.* 2002;2(2). doi:10.15845/voices.v2i2.83.
44. Silverman M. Music in the Social and Behavioral Sciences: An Encyclopedia. In Thompson WF, ed. *SAGE Reference*. SAGE Publications; 2014:168-171.
45. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3:77-101. doi:10.1191/1478088706qp063oa.

Biographical Statements

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Full-Length Article

The Myth of Schubert's Syphilis: *A Critical Approach*

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Abstract

This is a critical examination of the diagnosis of syphilis in Schubert's case, a diagnosis for which there has never been any medical evidence. It was a conjecture made by an art historian at the beginning of the twentieth century that has since been uncritically repeated by subsequent biographers and commentators. This is an attempt to challenge it from an epistemological point of view. At the time of Schubert's death, not only were there no tests for this condition, but even its pathogen, Treponema Pallidum, had not yet been isolated. The composer's nonspecific, multi-system signs and symptoms are compatible with many conditions not yet identified in his time.

Keywords*: Schubert, syphilis, myth, epistemology*

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Franz Peter Schubert (1797-1828) was born in Vienna, the twelfth child of a school teacher. He was exposed to death early in life as many of his siblings died before reaching puberty and his beloved mother died when he was 15. These early losses made an indelible impression on his young mind, thus love and sorrow became a hallmark of his music. In his own words: "For years and years, I sang my songs. When I would sing of love, it would be like pain to me. And yet when I would sing of pain, it was like love to me. Thus, was I divided by love and pain" [1; p. 362]. Affectionally nicknamed by his friends as *Schwammerl* ('little mushroom'), Schubert was myopic, of short stature and with a tendency to put on weight. Said to be of robust physique, he survived small pox in childhood. A passionate man, who enjoyed the company of friends, he held regular soirées (*Schubertiads*) where current cultural and political events were discussed, interspersed with his piano playing and singing. Schubert never married and was rumoured to have frequented brothels. He drunk wine rather heavily and smoked cigars throughout his adult life [1].

Schubert's precocious musical genius was recognised early, and he was appointed assistant director of an orchestra at the age of 14. During his short life, he composed over 600 *Lieder* (songs) for piano and solo voice, almost as many piano pieces, 40 liturgical compositions, a dozen symphonies, 20 string quartets, several quintets, and more. His creative output was not impeded by his six-year illness, and during the years 1823-1828, he wrote his most famous pieces. In 1823, he composed many of his great songs, such as *Du bist die Ruh* (D. 776) and *Auf dem Wasser zu singen* (D. 774) and a Piano Sonata in A Minor (D. 784). His much-loved song cycle, *Die schöne Müllerin*, was also written in this year. In 1824, he wrote the Piano Sonata in C (D. 812) and an evocative String Quartet in D minor (D. 810), *Death and the Maiden*, with its 'rhythm of the dead'. The year 1825 was particularly productive for him, and he composed the famous *Ave Maria* (D. 839) *based on* Walter Scott's epic poem *The Lady of the Lake.* Deeply affected by the death of Beethoven in 1827, Schubert took part in his funeral as a torch bearer. Not long afterwards, he wrote the song cycle *Die Winterreise* (D. 911), a haunting journey through the realm of death. During the last year of his life – 1828 – Schubert composed many of his masterpieces, including *Impromptus* (D. 899–935), *Fantasie* in F minor (D. 940), *Schwanengesang* (D. 957), the *String Quintet in C major* (D. 956) and his last three Piano Sonatas (*D 958–960).* The Sonata in A major (D. 959), with its tragic Andantino, gives an arresting glimpse of "the undiscovered country, from whose bourn no traveller returns".

The illness

Disappointingly, little is known about Schubert's illness. The earliest symptoms, which can be gleaned from the surviving records, date back to February 1823 when he was 25. In the autumn of that year, a deterioration in his health required a hospital admission lasting several weeks, but regrettably no medical records can be found in the archives. He was put on a regimen of diet and baths. A letter of his friend Schober reads:

PRODUCTION NOTES: Address correspondence to:

Eva Maria Cybulska, E-mail: corsack@btinternet.com| COI statement: The author declared that no financial support was given for the writing of this article. The author has no conflict of interest to declare.

"Schubert is better, and it won't be long now before he will have his own hair again, which had to be cut off because of the rash..." [1; p. 372]. This is the only reference to a skin rash found in Schubert's biographies.

In February 1824, he was "really doing well" and his hair was showing "the first signs of sweet little curls" [letter from von Schwind to Schober dated 22 February 1824, 1; p. 372]. Von Schwind also observed that Schubert "lavishly drank tea" [2; p. 331]. In April that year, the composer complained of defuse severe pains in his left arm and throat problems which prevented him from singing. These symptoms have been uncritically interpreted by McKay as "associated with syphilis" [3; p. 184].

There are no recorded health problems in any extant documents from the year 1825, but Schubert was sick in early 1826 and plagued by his "usual" headaches in October 1827 [1; p. 380]. In September of 1828, he was reported as feeling poorly and complained of rushes of blood to the head and dizziness. Yet, at the beginning of October, in the company of his brother Ferdinand and two friends, he undertook a three-day excursion on foot to Joseph Haydn's tomb near Eisenstadt (approx. 50 km outside Vienna). He was apparently in good spirits and full of musical ideas.

The final illness began in October 1828. Schubert could not finish a meal, claiming that he felt nauseated and as if he had ingested a poison. On 3 November, he went to hear his brother's requiem composition, followed by a three-hour walk. Afterwards, he ate and drank little. Around 13 November, he underwent blood-letting (common treatment for all kind of ailments at the time) and soon afterwards, weak and with fever, he sank into his sickbed. Yet, he still managed to discuss harmonies and rhythms with friends and read the proofs of *Winterreise*. A fluctuating delirium set in on 17 November and Schubert talked about lying next to Beethoven in a strange underground room. He died on 19 November and was buried a few feet from his immortal idol, Beethoven, at Währing Cemetery (later exhumed and transferred to *Zentralfriedhof*). On his death certificate the cause of death was recorded as *Nervenfieber*, which has been interpreted as typhoid fever [1; pp. 391-396]. Although this disease was said to be endemic in Vienna, there are no records of a typhoid epidemic at the time of his death.

In recapitulation, the scant accounts of Schubert's illness include a transient, unspecified rash on his head, headaches, rushes of blood to the head, general malaise, transient weakness of the arm, transient throat problems, possible polydipsia (excessive tea drinking), with a fluctuating course spanning over 6 years. Cardinal features of syphilis, conspicuously absent in the description of Schubert's illness:

- No chancre, rash on the thorax, hands or soles, or mucous plaques of the mouth, genitals and anus have ever been documented.
- There is no mention of fever in any surviving documents during the earlier years of his illness. Only shortly before his death did he develop a fever, thought to be typhoid.
- Not a single reference to pupil abnormality (such *as Argyll Robertson pupil*[1]*),* gait ataxia, dysarthria or tremor can be found in Schubert's biographical documents, and the handwriting in his last letters shows no dysgraphia [see a sample of his steady handwriting, 1; p. 381]. He was highly productive until shortly before his death and showed no signs of syphilitic dementia or tabes dorsalis.
- There is no clear evidence that Schubert was ever treated with mercury.

The growth of a diagnostic myth

There is no record of a diagnosis of syphilis made by the physicians who treated Schubert. Among them, Joseph von Veering, was a published specialist in venereal diseases in early nineteenth century Vienna. This diagnostic silence has been used as an indirect evidence of the composer's 'shameful' illness, and the absence of any contemporary reference has been interpreted as a deliberate attempt to hide the diagnosis by destroying the evidence [4, p. 93].

The first mention of syphilis in relation to Schubert was in 1907 (79 years after the composer's death) by the cataloguer of his works, Otto Deutsch, in an article in *Behen and Welt* (cited by Sams, 1980). This art historian relied on oblique references by Schubert's friends and acquaintances, drawing conclusions from what was *not* said. With unsubstantiated certainty, he claimed that the composer's illness was venereal, probably syphilis (2; p. 287). Afterwards, the diagnosis of syphilis has been repeated uncritically by various biographers and commentators, and it has now become firmly attached to the composer's name [1;2;3;4;5;6].

Initially, the speculations were drawn *ex hypothesi*. Sams, a musicologist and Shakespeare scholar, wrote that "the rash *would be* manifested not later than mid-April 1823" and "this secondary syndrome *would have* lasted a month or two and *may* have been severe enough to warrant hospital treatment" [5; p. 16]. McKay, also a musicologist, went further and her diagnosis was no longer hypothetical. She wrote with conviction: "Schubert was either ill or to some degree unwell throughout 1823. The symptoms from which he suffered are now recognised with certainty as those of syphilis" [3; p. 168]. She also stated authoritatively that the ultimate cause of Schubert's death was typhoid fever "in a man afflicted with active tertiary syphilis and compounded by the toxic effects of treatment" [Ibid, p. 331]. Gibbs, while conceding that a definitive posthumous diagnosis was impossible, joined the chorus proclaiming syphilis as Schubert's illness. He believed

[1] A condition described by a Scottish ophthalmologist in the mid-1860s, in the context of neurosyphilis.

that "his symptoms and treatments –rashes, aches pains and so forth – are consistent with primary and secondary stages of the disease" [4; p. 93]. Disappointingly, this professor of musicology did not consider that they could be also consistent with many other diseases. Hayden, a marketing executive, relying on the authority of previous biographers, announced that "Schubert was hiding, since he was exhibiting the socially embarrassing signs of syphilis. At first, he kept his illness a secret, but it became common knowledge among his friends, shared in their letters, although of course it was never named" [6; pp. 90-91]. This is an example of inference based on *what is not said*. She also promoted the notion of syphilis as a 'great imitator'.

Neumayr (1; pp. 400-401], the only biographer with a medical background, acknowledged that two exhumations of Schubert's body revealed no "suspicious alterations to the bones of the skull" and also that "no medically attested description of the specific symptoms of his disease has come down to us". Despite this, he was unable to challenge the myth and stated that there was no question that the composer's chronic affliction was syphilis.

Critical Discussion

Until the important discoveries regarding the aetiology, the transmission and the treatment of syphilis were made, the disease had often been described as 'the great imitator'. This may have been due to ignorance which led to many conditions being misdiagnosed as syphilis, out of fear rather than knowledge. The cause of syphilis was discovered in 1905 (77 years after Schubert's death), when Schaudinn and Hoffmann identified Treponema Pallidum as its etiological agent. The first, crude and non-specific test for syphilis, the Wassermann Test, was introduced in 1906. VDRL was developed by Harris, Rosenberg and Riedel in 1946, while the specific tests (such as FTA, Trep-Sure) came later still. Early treatments, which aimed to expel the pathogen out of the body, included blood-letting, laxatives and baths in wine, herbs or olive oil. In addition, mercury was used in the nineteenth century and derivatives of arsenic in the early twentieth century. Penicillin, discovered by Fleming in 1928, came into clinical use in 1942 and soon became a standard treatment for syphilis.

It is highly improbable that Schubert had tertiary syphilis. He died at the young age of 31, and too short a time would have lapsed between the alleged infection and his symptoms. Crucially, there is no evidence that he had a single feature of late syphilis. Whether he had any syphilis at all is impossible to determine. Although the diagnosis of some conditions can be hypothesised on clinical description alone (e.g. manic-depressive illness), when a a physical illness is suspected – as in Schubert's case – the patient must be examined, and tests must be performed; such are the requirements of good medical practice.

No differential diagnosis has been considered by any of the commentators. Schubert's nonspecific, multi-system signs and symptoms such as general malaise, headaches, transient skin rash, transient bone pain and sore throat could have formed a part of many diseases. Among them, not yet identified at the time of his death, are: leukaemia (first described by Virchov in 1847), anaemia (first described by Herrick in 1910) and Hashimoto disease (identified by Hashimoto in 1912). Schubert's unspecified rash on the head, which by now has achieved an almost legendary status, could have been due to many conditions, from measles (virus isolated in 1954 by John F. Enders and Thomas C. Peebles) to endocarditis (first described by William Osler in 1885). Thyroid diseases (including Hashimoto) can produce various skin problems [7] and bone pains occur in leukemia [8]. Conn's syndrome (identified in 1955), a primary hyperaldosteronism due to an adrenal gland tumour, could be a viable hypothesis for Schubert's six-year illness. An excess of aldosterone can lead to fatigue, headaches, polydipsia, high blood pressure and poor vision, muscular aches, and its complications include kidney failure [9]. Mercury poisoning (first reported in 1865) cannot be excluded, even though there is no clear record that Schubert was ever treated with it. It is also conceivable that various episodes of ill health spanning last six years of the composer's life were unrelated and did not constitute a distinct, single illness. If any of the above diagnoses were to be considered as an alternative, an examination of the patient as well as the performance of additional tests would have been imperative.

The diagnosis of Schubert's syphilis was a piece of guesswork informed not by science or clinical knowledge but by a need to tell a story. And the will to certainty – not the will to scientific truth – seems to have powered its perpetuation. Repeated countless times in crescendo fashion, it has ossified into a dogma with no doubt admitted. Doubt is a function of knowledge and little knowledge provokes no doubt. Although at the time of Schubert's death the aetiology of syphilis was unknown and there were no serological tests for it, none of his biographers regarded this as a hindrance to the diagnosis. Instead, they seem to have resorted to spurious confirmations: his every sign and symptom only confirmed the diagnosis of syphilis. The notion of syphilis as a 'great imitator' often provided a safety net for all inconsistencies and contradictions, and the various conspiracy theories filled the gaps.

Although, as Karl Popper [10] boldly asserted, scientific theories often start as myths, what finally prevents them from being consigned to mythology is the test against reality. Also, in search for scientific truth, one must accept the limits of human knowledge. The inability to accept the unknown and the unknowable forms the kernel of pseudoscience which admits only confirmations. This is compounded by a 'confirmation bias' in publications, which strongly leans towards positive correlations. It is unfathomable why the

diagnosis of syphilis should be so compulsively attached to Schubert whenever he is mentioned, or his music played in the media. Whatever illness the composer suffered from appears to have had no direct bearing on his music; not a single 'syphilitic note' can be heard in any of his compositions. Tragically, his exceptional creativity was cut short by his untimely death. And as Gibbs aptly observed, had Beethoven carried out the suicide he contemplated around the time of his Heilingenstadt Testament in 1802, the quantity and quality of his compositional legacy would have hardly matched Schubert's [4; pp. 65-6].

Be it the intimate lyricism of the *Neugierige* from the *Die Schöne Müllerin* cycle, the sorrowful bleakness of *der Leiermann* from the *Winterreise* or the sublime pathos of the String Quintet in C major, Schubert's music continues to reach the deepest emotional recesses of human soul. Few other composers can boast such an achievement. Perhaps, echoing the pleading passage from his *Ave Maria*, the time has come to allow Schubert the man to lay in peace.

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The composer's glasses, an indispensable element of his iconic image. Author's own photo taken at Schubert Geburtshaus in Vienna.

References

1. Neumayr A. Music and Medicine. transl. B C Clarke. Illinois, US: Medi-Ed Press; 1994. (Original German version, 1988, Verlag: Edition Wien; Auflage: 2)
2. Deutsch OE. Schubert: A Documentary Biography. transl. E Blom. London, England: JM Dent & Sons LTD, 1946.
3. McKay EN. Franz Schubert: a Biography. Oxford, UK: Oxford University Press; 1996.
4. Gibbs CH. The Life of Schubert. Cambridge UK: Cambridge University Press; 2000.
5. Sams E. Schubert's Illness re-examined. *The Musical Times*. 1980; January: 15-22
6. Hayden D. Pox: Genius, Madness and the Mysteries of Syphilis. New York, US: Basic Books; 2003.
7. Burman KD. & McKinley-Grant L. Dermatologic aspects of thyroid disease. Clin Dermatol. 2006 Jul-Aug;24(4):247-55.
8. Hiroyuki S. et al. Acute leukemia presenting as bone pain with normal white blood cell count. Acute Med Surg. 2014; **1**: 249; doi: 10.1002/ams2.46
9. Thompson CJ, Baylis PH. Mechanisms responsible for thirst and polyuria associated with primary aldosteronism. Br Med J. 1987; September 295: 578-579.
10. Popper K. Conjectures and Refutations: The Growth of Scientific Knowledge. London, England: Routledge & Kegan Paul plc; 2000.

Biographical Statements

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Full-Length Article

Use of Acoustically Modified Music to Reduce Auditory Hypersensitivity in Children

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Abstract

Background: Some children cannot tolerate sounds so their systems "shut down" and stop taking in what they hear, or they fight not to listen or run away from listening situations. Research has demonstrated that the underlying problem is not with the children's auditory systems, but with the connections between the auditory system (listening) and the emotional system leading the children to have over sensitivities to sound and respond with negative emotional reactions when listening[1,2].

One treatment found effective in helping children with hypersensitive hearing is the use of specially recorded and acoustically modified music and sound, such as found in The Listening Program® (TLP)[3]. Following a regiment of daily listening to this music, research has demonstrated significant improvements in listening (called auditory processing) and educational performance as noted by greater focusing and listening in the classroom, improvements in educational performance on standardized measures, and greater participation in educational activities[4,5].

Objective: The purpose of this paper is to discuss TLP describing some of the acoustic methods used to enhance the sound to make it therapeutic for listening.

Methods: What specific music was chosen and why that music is used is discussed. An overview of the material and equipment used in TLP training is presented. To demonstrate the effectiveness of TLP training, research completed on children who went through such training is presented as well.

Results: Review of the research on the effectiveness of TLP demonstrates that through the use of the specially recorded music, significant improvements can be found in children's listening, auditory processing, and educational abilities.

Keywords*: acoustically modified music, listening therapies, the listening program, hypersensitive hearing*

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Use of Acoustically Modified Music to Reduce Auditory Hypersensitivity in Children

Health care professionals come across children having overly sensitive hearing. These children cannot tolerate sounds, often loud sounds. Research has demonstrated that the underlying problem for children with hypersensitive hearing is related to the connections between the auditory system and the emotional system so that the children have over sensitivities to sound and respond with negative emotional reactions when listening[1,2]. Often, one recommended treatment is through a listening therapy. One such program uses special, acoustically modified music and sounds to help improve listening skills; this is The Listening Program® (TLP) developed by Advanced Brain Technologies[3]. The recorded music and sounds are carefully chosen and systematically produced to enhance positive emotional and calming reactions during listening. The listening method uses specially recorded instrumental music. The music is acoustically modified to lead the child to react less negatively to sounds and, thus, reduces the child's hypersensitivity while opening the auditory system to listen more effectively.

In TLP, a trained provider oversees the program. The provider typically establishes the actual protocol based on the individual child's needs. The listening therapy may be carried out in the child's home, at the child's school, or in the professional's clinical practice. When using TLP, especially through specially designed air and bone conduction headphones, the sound signal is believed to travel along both the classical and non-classical auditory pathways[1,2]. One of the first outcomes often see in children undergoing TLP training is that they are calmer. This is a good indicator that the listening has tapped into the emotional areas of the limbic

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Jay R. Lucker, E-mail: apddrj@gmail.com| COI statement: The authors declared that no financial support was given for the writing of this article. The authors have no conflict of interest to declare.

system via the non-classical auditory pathways. Over the course of training, children are often reported to be more attentive to sounds, better able to detect sounds they hear, and more verbally communicative, likely because they are more open to listening. As the training proceeds, the child continues to relax and becomes calmer when listening. It is hypothesized that this is because a reprogramming of emotional memory in the amygdala is occurring. The training reprograms listening and sounds as positive experiences and helps improve stress regulation so the child no longer has fight/flight responses to non-threatening sounds. When the child is in real-world situations and hears sounds that may have been frightening or annoying in the past, the training allows the child to process the sounds in a more neutral manner[1,2]. For many children, the use of a program such as TLP is sufficient to reprogram their systems so that sound is no longer frightening.

Research using TLP has largely been anecdotal, but the evidence base is growing as studies continue to be conducted. For example, Gee, Thompson, and St. John[6] present a case study of a child with ASD who was overly sensitive to sound and completed TLP training. They report that the child showed a decrease in negative behavioral reactions to previously "annoying" and feared sounds after completing this training.

In contrast to anecdotal studies, some investigations have used groups of subjects. Two such studies provide more quantitative analyses of the findings. They were conducted and published by Jeyes[7,8]. Both studies looked at changes after TLP training in the subjects used. In the study, Jeyes [8] reported improvements in auditory processing abilities in 12 children diagnosed with autism spectrum disorder (ASD). The children were evaluated using one of the standard measures of auditory processing called the SCAN-3:C[9]. Their auditory processing abilities were found to improve significantly when the effect size, or improvement after therapy, was statistically analyzed[4,5]. The effect size found was 1.67, meaning that an improvement of one-and-two-thirds standard deviations was seen after completing the listening therapy. Thus, TLP training demonstrated large improvements in auditory processing and listening skills for these children with ASD after they listened to the special acoustic recordings provided through TLP.

In the other study, Jeyes[7] looked at changes in educational performance for a group of 38 children identified as academic underachievers which, likely, meant that the children had learning disabilities which may have included auditory processing deficits. These children also completed TLP training and were found to show a large effect size on statistical analyses after such training when tested on educational tasks including measures of reading and writing abilities as well as some listening/auditory processing tasks involved with auditory discrimination and memory. The effect size found[4,5] was 1.19, over one standard deviation improvement. Thus, again, listening to this special, acoustically modified, and enhanced music improved listening and academic abilities in these children.

A review of other studies and descriptions of individual cases can be found at the Advanced Brain Technologies website (http://a.advancedbrain.com/scienc.jsp?scienceLink=research). The research has demonstrated that after going through this listening program, children, adolescents, and adults find their abilities to tolerate sounds improves for both loud sounds and other annoying sounds. Many find listening to be more pleasurable and positive so that negative emotional reactions rarely, if ever, occur. From the limited evidence available, there appears to be indications that TLP training provides a reduction in negative emotional reactions when listening. Additionally, quantitative research has demonstrated positive outcomes from TLP training improving auditory processing abilities and educational factors[4,5]. Thus, professionals working with and parents of children who have auditory hypersensitivities might wish to try TLP training focusing on seeing changes in the children's reactions to listening tasks and sounds in their environment. Since listening is an important part of learning, it is expected that the improvements in listening will improve learning for these children.

The Acoustics of The Listening Program

The classical music recorded for The Listening Program® includes original arrangements of works by Mozart, Haydn, Vivaldi and Danzi for strings and woodwinds, performed by the Arcangelos Chamber Ensemble. Production is focused on enhancing the natural attributes inherent to the music in such a way that the brain can better pick up on each acoustic element and learn to better discriminate and understand what is heard.

The acoustic features include frequency, amplitude, temporal and spatial elements, melodic structure, key, and more. Each recording is done with a 24-bit depth, and 192 kHz sampling rate to capture a High Definition image of each instrument across the entire range of human hearing. Recordings are done in commercial studios with rooms that are acoustically designed and treated, providing the best recording conditions. Each musician plays in an individual, live room to capture separate channel recordings of each instrument and for complete isolation of the microphones. This ensures no spill between instruments and microphones; thus, each instrument is recorded in complete isolation. During recording, the complete ensemble plays together wearing monitoring headphones with the ability to see and interact with one another while playing. When recording is complete the individual tracks are edited and mixed in post-production prior to digital signal processing (DSP). The primary DSP methods applied to the music include the following.

Audio filters are applied for frequency enhancement from 20 Hz - 20 kHz including carefully selected and applied low-pass, band-pass, and high-pass filters, which are set to enhance multiple bands of low, mid, and high frequencies which correlate to the tonotopic organization of the inner ear (cochlea) and auditory cortex like the keys of a piano are organized from high to low pitch. This method is intended to enhance frequency discrimination. The child moves through phases listening first to full spectrum sounds without filters, then low frequency bands, followed by mid to high frequency bands, progressing to high frequency bands, then in reverse sequence over the course of training.

Certain sounds, provided in the right context, can re-organize neural activity, support health, balance emotions, bring calm, and provide energy to carry one through the entire day. The Listening Program® trains the brain through listening to modules of music which is acoustically-modified and arranged into frequency zones. These zones are mapped to brain regions which respond to different properties of sound according to their vibratory frequencies, just as the keys on a piano are tuned to play different musical notes. This mapping is referred to as tonotopicity.

Four training zones (blue, red, orange, and green) provide music which progresses across the full range of human sound perception. Each zone focuses on a different band of frequencies which have qualities contribute to one's brain health and performance. Within each zone, the listener progresses through different types of training which are rated by level. Higher levels of training are presented as the listener gains listening experience.

Auditory tone bursts are applied during brief periods in the middle of each listening session. The bursts vary in duration and amplitude to help the individual attune to sounds in the environment, such as human speech, and to attenuate background noise and loud annoying sounds. These tone bursts are specific to instruments within the target frequency bands and are mixed with lower amplitude full spectrum music to provide a ground sound reference for the dynamic figure of the tone bursts.

Spatial Surround® is a music recording and production process developed for TLP in which multi-channel sound is presented to provide music in five individual channels or locations. Spatial Surround Dynamic is Spatial Surround® with movement of the individual instruments or nature sounds using dynamic panning. Spatial Surround® was developed to replicate the natural environment to provide more complete training to the auditory system. Rather than simply stimulating perception of sound from the right and left, which can be done in stereo, Spatial Surround® increases perception of all directions. Mixing is done so the listener is the center reference with a front left, front right, and center channel, as well as rear left and rear right channels. At certain points in TLP, instruments are dynamically panned between channels, left to right, right to left, front to back, back to front, clockwise and counterclockwise in various spatial patterns to stimulate sound localization, and other skills of auditory perception. The music is encoded using a specialized algorithm owned and licensed from Dolby Laboratories that provides playback of five channels through stereo headphones.

ABC Modular Design is critical to the success in producing the recordings for TLP. This sound design is important because effective stimulation depends on more than carefully selected classical music and neuroacoustic modifications. It also helps the listener's brain to be prepared to receive acoustic information.

When someone experiences stress or anxiety, the ear cannot easily discriminate higher frequency sounds. This leads to a decline in attention and auditory processing. Further, research asserts that a listener needs to be relaxed to receive appropriate neural feedback from the ear to the brain and back to control and to improve the function of the brain. The ABC Modular Design enhances the effect of TLP specially engineered music which prepares the person to listen as well as providing the right amount of stimulation to restore the listener to a state of focused relaxation.

Each module of TLP follows Advanced Brain Technologies' proprietary ABC modular progression which takes the listener through multiple levels of sound training in 15-minute segments. The modules include seamless tempo entrainment from moderate tempos of 50-60 beats per minute (bpm), increasing to 120-150 bpm, then back to 50-60 bpm. There are transitions of musical complexity, tone density, spatial training, frequency focus, and volume dynamics. These transitions move through a sequence of low-moderate-high-moderate-low intensity training over the course of the 15-minute segments, which provides a balance of stimulation and grounding to support self-regulation to provide the brain with the right training challenge without overloading the child.

Procedures for Completing TLP Training

The Listening Program® training is personalized to each child based on the individual's presenting functional needs and goals for the protocol which may go beyond reducing auditory hypersensitivity. The provider gathers information regarding the child, determines the best protocol for the child and sets the schedule. The child does not choose which music will be used, the choices are made by the provider. Each protocol has specific music recordings used for the listening therapy.

There are several protocol options and schedules available with TLP. Protocols include Spectrum (developed specifically for listeners with sensory sensitivities), Spectrum Plus, Achieve, Achieve Plus, Level One, and Level Two. Schedules include Extended which is once daily for 15 minutes; Base, twice daily for 15 minutes; and Condensed, once daily for 30 minutes. Schedules are selected based on age, attention, and behavioral characteristics of the child. The child engages in quiet play or art activities during listening sessions which are

done five days per week. The duration of TLP is a minimum of 50 hours training carried out over the course of 20-40 weeks. The training is typically continued for another 20-40 weeks to build on the improvements experienced during the initial cycles of training.

The provider conducts a training session with whomever will implement the program (known as the monitor). The professional checks-in weekly, bi-weekly or monthly through in-person appointments, video conferences, or phone calls with the monitor, as well as keeping in contact between these regular sessions to make sure any questions are answered. Listening is done through high-quality headphones tested and approved based on performance for use with TLP. Both open-air (preferred) and closed type circumaural headphones are used depending on the noise level in the listening environment.

Advanced Brain Technologies has developed a specialized semi-open circumaural headphone system optimized for TLP called Waves. Waves is a multisensory audio system delivering sound using the two natural modes of hearing: through the ears (air conduction) and through the bones of the head (bone conduction). This bimodal approach provids simultaneous air and bone conduction sound delivery which is a more immersive listening experience than conventional headphones provide.

Benefits of Bone Conduction

The choice for using bone conduction (along with air conduction) is that this bimodal method of delivering the auditory stimulation supports stress reduction and regulation of the "fight or flight" response to help achieve a state of calm and relaxed/alertness. Using TLP with combined bone and air conduction offers internal and external sound stimulation, which can increase vocal awareness and supports the development and refinement of language and communication skills.

The Waves headphones are driven by a dedicated headphone amplifier which allows for separate control of volume for air conduction and the vibrational output of the bone conduction transducer. The Waves amplifier has USB rechargeable batteries and connects to TLP audio source via a 3.5mm input cable provided with the program's equipment.

The audio sources used in TLP training are high-quality digital media players having the program's music files preloaded loaded using audio codec (Apple Lossless) available for the device. The programs are organized into specialized playlists which correspond to the protocol and schedule that has been determined for each child, so that the monitor knows exactly which files to play for the child each session.

Advanced Brain Technologies has developed a high-quality audio streaming platform called "TLP Online" in which the child can listen on virtually any web-connected device using the TLP Mobile Apps. The child obtains a membership to TLP Online and follows the same programs provided on digital media players. The child can access the personalized TLP protocol anywhere there is internet or data connection available by logging in with the child's username and password. TLP Online automatically tracks the child's progress with baseline and progress measures and instantaneously streams the correct module for listening for each session adjusting the program compliance. The provider can remotely monitor the child and make program and schedule changes as needed.

Research on The Listening Program®

Using this acoustically modified music and sound program may lead to significant changes in children's listening and auditory processing abilities. Research conducted on The Listening Program® has used small sample, case studies and small group studies. However, applying a meta-analytic approach, Vargas and Lucker[4,5] looked at changes in listening and auditory behaviors reported in nine studies. They used a quantitative, statistical analysis of the effect size changes in performance of children with a variety of disorders affecting listening, auditory processing, and learning. The effect size was based on comparing pre-training test results with post-training results using the same measures. The effect sizes demonstrated significant changes with the magnitude of the effect being highly significant. Some of the findings from their effect size research were discussed earlier in this paper. What was seen for studies using groups of subjects was that the effect sizes often revealed improvements of more than one standard deviation after completing TLP training. Thus, listening to this acoustically enhanced and modified music and sound can positively improve auditory skills in children.

Other research on The Listening Program® can be found at the Advanced Brain website (www.advancedbrain.com/research). Overwhelmingly, the research has found positive changes in listening, auditory processing, and learning for children who complete training. Thus, the specially modified and acoustically enhanced music used in TLP appears to improve listening. Other research[1,2] has identified that these changes appear to be related to improved emotional reactions.

How the Listening Program® Might Help Listening and Emotional Reactions

Earlier it was stated that this acoustically modified and enhanced music appears to calm the emotional system, reprogram emotional memory, and lead to changes by having neural reactions occur in the non-classical auditory pathways[1,2]. The following is a discussion of these non-classical auditory pathways and how they relate to the auditory system and the emotional system in the brain.

To begin, a brief review of the classical pathways is provided. Any standard textbook on auditory neuroanatomy shows the central auditory nervous system involving the following structures and pathways. From the inner ear, cochlea, the auditory signal is processed and converted to electrochemical neural impulses that travel from the cochlea to the low brainstem level via the auditory or eighth cranial nerve. The nerve transmits the initially processed signal to the cochlea nucleus with the signal from the cochlea nucleus traveling either to the same or opposite side superior olivary complex (SOC). From the SOC, the signal travels to higher brainstem levels including the lateral lemniscus, the inferior colliculus, and, then, the medial geniculate bodies of thalamus. At this upper brain stem level, the neural impulse travels to the auditory areas of cortex in the brain. The two cortices connect via the corpus callosum. Through this classical pathway, we process what we hear so that, eventually, we can make sense out of what we have heard.

In the early 2000, Moller and his associates[10,11] discussed another pathway involving the auditory system identified as the non-classical auditory pathway. Moller and his associates[10,11] discuss that research on this pathway began in the 1970s, but the best understanding of this pathway became apparent in studies from the early 2000s. In their research, Moller and his associate[10,11] identified that this non-classical auditory pathway was very active in young children, but by age eight years, the pathway was suppressed so that the classical pathway became the prominent one. However, under times of stress, the non-classical pathway may become reactivated.

According to Moller and his associates[10,11], the non-classical pathways begin from the classical auditory pathway at the level of the lateral lemniscus. The non-classical pathway branches off from the classical pathway with this non-classical pathway projecting and receiving neural input from the reticular system. The reticular system is involved in awareness activation. Under normal circumstances, when we hear loud or annoying sounds, we receive information from our reticular systems and determine whether that information is dangerous or scary. We then react. However, if the non-classical pathway receives the input that this is a danger situation. it sends information through this pathway to emotional neural systems in the limbic system of the brain deep in the temporal lobe. The limbic system then reacts to this "danger" by setting up a series of neural responses in the autonomic nervous system (ANS). These responses lead to negative emotional reactions often referred to as the "fight" or "flight" response. Thus, these non-classical pathways are protective mechanisms. In response to the "danger," we react and. Over time, learn to relate what sounds are "danger" and what are not. Eventually we learn to react to the sounds of danger and remain calm. This learning is remembered in the emotional memory center of the brain, the amygdala. But, what if the emotional system is not functioning properly or is not being regulated appropriately?

For some children older than eight years, Lucker[2] and Lucker and Doman[1] hypothesize that the non-classical auditory pathway remains active. Sounds initially frightening remain frightening, and when such sounds are heard, the still functioning non-classical auditory pathway reacts sending messages to the limbic system so that the emotional reaction is to continue to set up ANS responses, and the child continues to behave in a fight/flight mode. This reinforces the negative memories of these sounds which are stored in the amygdala. Thus, similar sounds even of less intensity pull from memory fear of the sound, and the reaction can lead to fight and flight responses which are seen in children with hypersensitive hearing.

For children who continue to have these negative emotional reactions to perceived loud and annoying sounds, the emotional memory continues to "label" these responses as fearful, extremely annoying, intolerable, and being out of control. However, listening to the specially modified and recorded acoustic characteristics of music in TLP seems to send messages through the non-classical pathways that sound and listening are not frightening or potentially harmful. The neural responses are that the music calms the system.

The importance of the non-classical auditory system was identified by other auditory researchers. Dr. Frank Musiek and his associates[12] write, "Some children with developmental disorders may have emotional learning problems caused by the brain's inability to reduce the involvement of the non-classical pathway and the amygdala" (p. 6). Thus, professionals involved in research regarding auditory hypersensitivity have identified the importance of this non-classical auditory pathway to hypersensitive hearing in children.

Autonomic Nervous System Responses

We have two nervous systems. The CNS responds to and processes incoming sensory stimuli to which we become aware and react. In contrast, the ANS reacts automatically to certain things such as getting us to respond appropriately when we are in a fearful situation. Typically, in a fearful situation, there is increase in heartbeat, faster breathing, loss of voice, upset feelings in the stomach, etc. These are due to ANS reactions.

ANS responses are often set forth by neural impulses from the emotional systems in the limbic system of the brain. One of these reactions is the secretion of neurochemicals such as GABA. This neurochemical helps to inhibit auditory sensory processing so that we do not over react to sounds we hear. One hypothesis is that abnormal production of GABA might occur in people with auditory hypersensitivities. Rubenstein and Merzenich[13] identified such abnormal production in children with auditory hypersensitivity,

especially children with autism spectrum disorder (ASD). Thus, when hearing sounds initially fearful, the child may have ANS responses, but the release of GABA inhibits such responses. For children with hypersensitivity hearing, the GABA release is abnormal and does not inhibit reacting to the sound. For these children, their reactions are of the fight/flight mode. However, after completing TLP training, the non-classical pathway re-program the negative emotional reactions so the children react more neutrally with less fear and fewer flight/flight responses. What may occur is that more appropriate GABA release occurs and more normal inhibitory reactions to sounds lead to the child being more open to listen and learn.

In addition to GABA, another neurochemical identified as being of abnormal functioning in children with hypersensitive hearing is 5-Hydroxytrypamine (5-HT) also known as Serotonin. Marriage and Barnes[14,15] identified that abnormal secretion of serotonin in animals led to a heighted behavioral response to sound compared with the reactions to such sound in similar animals with normal serotonin production and secretion who responded normally. The researchers hypothesized their animal research indicated that abnormal secretion of serotonin in reaction to sound could contribute to negative behavioral/emotional reactions in children with auditory hypersensitivities. Research by Baguley[16] identified how abnormal production of 5-HT can be associated with hypersensitive hearing in humans. Baguley investigated hypersensitive hearing in children with William's syndrome. Further research is needed to look at 5-HT/Serotonin functioning in children and relate this to listening and auditory hypersensitivities in these children.

When considering these neurochemical abnormalities which may come under better control after completing a listening therapy like TLP, one may wonder what specific neural mechanisms within the ANS might be responding. One theory related to such neural mechanisms is known as the "Polyvagal Theory". This theory, developed by Porges[17], hypothesizes that the vagus nerve provides the neural activity to change responses in different parts of the body when the nerve is innervated through ANS responses. One incoming response that can set the vagus nerve into action is sound. The initial reactions via the vagus nerve is through the ANS.

In 2010, Porges and Lewis[18] identified how the vagus nerve is innervated via limbic system connections, thus, through emotional system reactions. The nerve's response is in response to what is interpreted as the person being under emotional stress or involved in a fearful condition. The nerve innervates the heart, and under stress or negative emotional conditions, heart rate increases because of this innervation. The nerve also innervates the vocal folds which are involved in the production of voice. Under stress and fearful conditions, one can lose one's voice or the voice can crack or get out of control. These reactions may all be due to ANS reactions to the processed sound.

Another neural mechanism that may be innervated through the limbic system and react via ANS control is the hypothalamus. Mazurek et al.[19,20] looked at changes in behaviors of rats under different types of stressful conditions. What these researchers identified is that rats under stress were overly sensitive to sounds, and, thus, had auditory hypersensitivities. These rats were then investigated further and were found to have abnormalities in their hypothalamic functioning when under stress. The hypothalamus is one of the mechanisms within the limbic system, and the abnormal functioning of the hypothalamus led to abnormalities in the pituitary glands and adrenal glands of these rats. The stress that led to these abnormal functions was brought on by sound, thus, auditory hypersensitivity was present. Mazurek et al.'s research[19,20] suggests that children's hypersensitivity may also lead to abnormalities in their hypothalamus and contribute to abnormal functioning in ANS systems including the pituitary and adrenal glands.

Conclusion

Music and sound have been demonstrated to improve listening in people for many years. Using acoustically enhanced and modified music and sound recorded based on the descriptions provided in this paper has demonstrated significant improvements in listening skills, reductions in hypersensitive hearing, and significantly better auditory processing abilities and learning in children[4,5]. It is concluded that practitioners should consider recommending listening therapies such as TLP when they come across children with auditory problems not specifically involved with hearing loss.

When we consider the specific music used in TLP, one can see it is sound modified as described in this paper. Additionally, the music is modulated and varied between ears which is not the normal method for listening to music. The research supports that after completing TLP training, significant improvements of more than one standard deviation can be found for children's listening, auditory processing, learning, and tolerance of sounds.

The focus of this paper was to explain the value and importance in using acoustically modified music when the purpose of that music is to calm emotional reactions of people, i.e., reduce stress, relax people, improve overall listening. It is hoped that more research will be conducted revealing the benefits from listening to acoustically modified and enhanced music such as music developed for and used in The Listening Program®.

References

1. Lucker JR, Doman A. Auditory hypersensitivities and autism spectrum disorders: An emotional response. Autism Science Digest: 2012: 4, 103-108.
2. Lucker JR. Auditory hypersensitivity in children with autism spectrum disorder. Focus Autism Other Dev Disabil: 2013: 20(10): 1-8.
3. Advanced Brain Technologies. The Listening Program® (TLP) Available at: http://a.advancedbrain.com/tlp/the_listening_program.jsp. Accessed August 30, 2017.
4. Vargas S, Lucker JR. A Quantitative Summary of The Listening Program (TLP) Efficacy Studies: What Areas were found to improve by TLP intervention? Poster session presented at: The 2015 Annual Conference on The Listening Program, Ogden, UT, July 2015.
5. Vargas S, Lucker JR. A quantitative summary of The Listening Program (TLP) Efficacy Studies: What areas were found to improve by TLP intervention? Occup Ther Int: 2016: 23(2), 206-217.
6. Gee BM, Thompson K, St. John H. Music based intervention with a child with autism spectrum disorder and auditory sensory over-responsivity. Occup Ther Int: 2014: 21(1): 12-20.
7. Jeyes G. Evaluating the effectiveness of The Listening Program® intervention for children

1. who are underachieving in a state school. Paper presented at: The British Dyslexia Association International Conference, March 2004. Available at: http://www.advancedbrain.com/pdf/research/research_nottingham_tlp.pfd. Accessed August 30, 2017.

8. Jeyes G. A study to establish whether the use of The Listening Program® is effective in improving auditory skills for children with autism. Paper presented at: Children's Complementary Therapy Network Conference, Birmingham Children's Hospital, May18, 2013. Available at: http://www.advancedbrain.com/pdf/research/jeyes_study_autism.pdf. Accessed August 30, 2027.
9. Keith RW. SCAN-3:C Test of Auditory Processing Disorders in Children. New York: Pearson Education; 2009.
10. Moller AR, Rollins PR. The non-classical auditory pathways are involved in hearing in children but not adults. Neurosci Lett: 2002: 19(1), 41-44.
11. Moller A, Kern JK, Grannemann B. Are the non-classical auditory pathways involved in autism and PDD? Neurol Res: 2005: 27(6), 625-629.
12. Musiek F, Mohanani A, Wierzbinski E, Kilgore G, Hunter J, Marotto J. The non-classical pathway: Too great to be ignored. Hearing J: 2011: 64(10), 6–8.
13. Rubenstein JLR, Merzenich MM. Model of autism: Increased ratio of excitation/inhibition in key neural systems. Genes Brain Behav: 2003: 2(5), 255.
14. Marriage J, Barnes NM. Is central hyperacusis a symptom of 5-hydroxytryptamine (5-HT) dysfunction? J Laryngol Otol: 1995: 109(10), 915-921.
15. Marriage J, Barnes NM. Is central hyperacusis a symptom of 5-hydroxytryptamine (5-HT) dysfunction? Int J Audiol: 2003: 42(5), 279-288.
16. Baguley DM. Hyperacusis. J R Soc Med: 2003: 96(12): 582-585.
17. Porges SW. The polyvagal perspective. Biol Psych: 2007: 74(2), 116-143.
18. Porges SW, Lewis GF. The polyvagal hypothesis: Common mechanisms mediating autonomic regulation, vocalizations and listening. Handbook of Behavioral Neuroscience: 2010: 19, 255-264.
19. Mazurek B, Haupt H, Joachim R, Klapp BF, Stover T, Szczepek AJ. Stress induces transient auditory hypersensitivity in rats. Hear Res: 2010: 259 (1-2), 55-63.
20. Mazurek B, Haupt H, Klapp BF, Szczepk AJ, Olze H. Exposure of Wistar rate to 24-h psycho-social stress alters gene expression in inferior colliculus. Neuroscience Letters: 2012: 527(1), 40-45.

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Full-Length Article

Efficacy of Pain Management: *Integration versus Distraction*

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Abstract

The following is a position paper substantiating the recommendation for an integrative approach to evaluate, treat and manage the predictable and/or unpredictable experience of pain in medical procedures so frequently required for infants, children and adult patients. Although decades of articles in journals and texts support distraction as a recommendation for protecting and diffusing a patient's experience of procedural pain, the rationale for thorough evaluation followed by suggestions for the provision of integration as a treatment option is described and considered as a best practice intervention.

Keywords*: Pain, procedures, veni-puncture, music medicine, music therapy* multilingual abstract | **mmd.iammonline.com**

Introduction: Disclosure informing perspective

A 'hospitalist' is a descriptive term that refers to a type of practice coined in name, in 1996. Specifically hospitalists are "specialists in inpatient medicine ... who will be responsible for managing the care of hospitalized patients in the same way that primary care physicians are responsible for managing the care of outpatients [1]

Although this definition has expanded through the years to include teaching and research, 'hospitalists' who have trained in hospitals and work at the bedside, rounding daily, could still currently be defined as a rare breed of doctors, nurses, and therapists who encounter a unique subset of circumstances in the fast-paced world of patient care and medical management. As out-patient practices have grown, and hospital admissions including length of stays have decreased, the emergent themes and crises that comprise the acute care of disease-severity have, in a certain way, turned the training of hospitalists into an arguably growing refined subset of clinical practice.

I consider myself to be a 'hospitalist' -as the first 13 years of my hospital tenure was primarily at the bedside, first with Pediatric patients, and then within the department of Family Medicine, in ICUs and eventually with Oncology patients. My on-the-job learning and training alongside doctors and nurses was foundational to my understanding of, not only disease identification, stratification, course of treatment and traumatic circumstances, but has also served as a 'marker' and basis for my understanding the often subtle distinction that can exist between 'illness' and 'wellness.'

This is not unlike earlier training where my beginning work as a psychotherapist at a clinic within a school setting, behooved in-depth study of child development. This leant critical insight to the problems and circumstances I encountered in providing music therapy for children and teens with emotional disturbance, mental illness, and other varieties of labels and definitions. For me, this crystalized the realization that one cannot treat blindly- in a vacuum. We must understand the spectrum of well and not well, and it is imperative that we have at the very least, a most basic understanding of the 'norm' in 'normal' and the 'dis' of what pervades one's body sense and experience of 'dis'- 'ease.'

Music as an art, and primal expressive modality, recognizably can challenge such labels and diversifications in ways that we are only beginning to understand. Where memory is seemingly erased in dementias, for instance, we find study after study rendering succinct evidence of a 'music brain.'[2-5] We now have evidence of pathways that have upheld the imprint of musical neural mapping. Where mood and affect can be markedly impaired, we recognize through research, that there is significance in music therapy's capacity to improve functioning in depressed individuals, and also suggested efficacy in findings reflecting decreased anxiety.[6]

Furthermore, comprehensive research reviews have demonstrated that music can reduce opioid requirements, with evidence that its effect on postoperative pain may be potent. In a Cochrane Review [7] investigators examined the effect of music on acute, chronic, or cancer pain intensity, pain relief, and analgesic requirements. Of 51 studies evaluated, 4 of these findings reported that subjects exposed to music had a 70% higher likelihood of having pain relief than

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unexposed subjects. In the 3 studies that assessed opioid requirements 2 hours after surgery, subjects exposed to music required less morphine than subjects who did not hear music. Additionally, in 5 investigations that evaluated analgesic requirements in the 24-hour period following surgery, the music group required considerably less morphine than those in the control group.

The experience of treating pain

As a hospitalist, there is one area where education and training is vastly enriched with experience, and that is in facing patients who experience pain. While education and research related to the classification and training of pain management has grown, no one would deny that nothing is comparable to learning about pain from both the face-to-face experience of meeting and treating patients who are experiencing pain, coupled with seeing how various practitioners evaluate and treat patients' experience of pain. Suffice to reflect and report that although the status of pain reporting has made it "the fifth vital sign" and a required measurement on the patient bedside flow-sheet, the variances of how pain is treated in actuality is largely influenced by a host of complex variables including best practice guidelines, and practitioners' beliefs and values.

In 2015, for instance, a recent 4-year emergency room study of 6,710 emergency department (ED) visits revealed that minority patients were less likely than white patients, to receive analgesic medications for abdominal pain by 22-30 percent. [8] It is important to recognize that society's beliefs and the economics of pain can challenge practice activity. 20 years ago education was erring toward believing the patient's experience of pain at face value, and pharmaceuticals were seemingly prescribed more readily. Today, while the pharmaceutical industry may be booming, we are in an age of opioid crisis, and this has affected the assessment and treatment of pain. Prescribing has in turn become more complicated, and influenced by a myriad of non-medical factors.

Additionally, studies of procedural pain, the topic of this article, have not been well investigated. In 2008, a nursing study reviewed 1469 published articles on interventions for acute procedural pain in hospitalized children, for example, found only 5 reports were high-enough quality to be reviewed.[9] Admittedly, procedural pain is difficult to research.

Etiology

As a hospitalist, it is well understood that the most essential aspect of treating pain is to first understand its etiology. Because pain as a symptom helps doctors differentiate, or rule out aspects of one disease from another, its diagnostic implications may raise frustration. Witnessing patients' discomfort and having to wane through it is uncomfortable, even while knowing that pain can inform and render hints about the roots of its causes. Assessment, education, and treatment are the cornerstones of best practice. For music therapists, it may be useful to classify pain as chronic, acute or procedural. This will provide a foundation for creating a treatment plan.

This article is not about the disease aspects of pain related to its etiology, pathway, mechanism, nor is it related solely to the treatment of pain's physical manifestation. Indeed, there are music therapy treatments recommended for the experience of pain, particularly in the experience of chronic pain or acute pain crises where the physiological, social, and patient-role experiences are complicated topics and deserve specific attention as topics for research and study in their own right. These are beyond the confines of this article. As such, it cannot be overstated how essential it is for music therapists who treat pain to understand its roots diagnostically- e.g. whether pain is neuropathic, nociceptive, inflammatory, or non-inflammatory.

Equally important is our grasp of pain's emotional context, which is what I call the 'point of trauma' (POT). This is because the memory people associate with when (the context) and where the pain first started will likely forever be imprinted and related to aspects that influence the 'how' 'why' and/or even the root of the pain itself. We can work with this.

As well, theory and an adherence to reading about and familiarizing our database on the ever-growing knowledge related to pain theory may be well advised. How those who treat pain conceptualize aspects of the experience- be it through the lens of the Gate Control or subsequent Neuromatrix theories, or by focusing on the influence of genetics, culture and learning- can lead toward insightful explanation and deeper understanding of pain and its mechanisms:

"Although under most circumstances transmission of nociceptive information results in pain perception, many physicians and patients are unaware that nociception is dissociable from the experience of pain. In other words, nociception can occur in the absence of awareness of pain, and pain can occur in the absence of measurably noxious stimuli. This phenomenon is observable in instances of massive trauma (such as that which might be incurred by a motor vehicle accident) when victims exhibit a stoic painless state despite severe injury, and conversely, when individuals with functional pain syndromes report considerable anguish in spite of having no observable tissue damage."[10]

Pain, and in particular chronic pain is often affiliated with emotional and physical stress, which the neuromatrix theory defines as activation aspects that intertwine the perceptual, homeostatic, and behavioral experiences of discomfort. The actual output of a surging neural network that is reactive rather than primarily evoked by inflammation or pathology,

translates to there being direct potential for the influence of music in the patterning of the brain's response to activation aspects. As the neuromatrix may be modified by sensory experience and is genetically influenced, music might be able to serve as a primary mechanism to influence, re-direct, modulate activity generating the neural pattern that produces pain. The neuromatrix and subsequent theories take into account stress and tension, and furthermore the conditions under which the pain occurs.[11]

This article will address procedural pain, which is differentiated from acute or chronic pain. Acute pain is often the result of a crisis and implies a shorter duration than chronic pain, which is more likely affiliated with a (prolonged, long-term) disease or condition. Procedural pain, which takes place in the context of a treatment, has a focus on the delivery of a procedure whereby the patient's involvement may have significant influence on how the pain is experienced. Medical procedures are reported as the most significant and distressing cause of pain, particularly for hospitalized children. A recent study of 107 inpatients or their parents residing on 4 hospital units were interviewed and chart-checked during 4 nonconsecutive days revealed continued high frequency of undertreated pain in children. The authors concluded that the highest rates of pain reports were related to procedures and the authors concluded that these kind of painful episodes are preventable and should be targeted.[12]

The aforementioned comprehensive review on "acute procedural pain" defined it as a "common experience for hospitalized children that …despite mounting research on treatments for acute procedure-related pain-remains inadequately treated." The extreme fear of medical procedures involving needles is known as trypanophobia. This needle phobia involving injections or hypodermic needles was first formally defined as condition in the DSM-IV as 300.29.3 (Manual of Mental Health Disorders, 4th Edition (DSM-IV) A recent study of 1,024 children & 883 adults, revealed that 24% of the adults and 63% of children reported a fear of needles and this influenced immunization non-compliance. [13]

In 2016 the New England Journal of Medicine published the following statement: "Pain during neonatal procedures is inconsistently assessed and often inadequately treated. In addition to ethical reasons for pain alleviation, research has shown that repeated painful stimuli early in life are associated with physiologic instability, dysregulation of stress response systems, and abnormal neurodevelopment. Based on recent evidence, the American Academy of Pediatrics has updated its recommendations for the prevention and management of procedural pain in neonates." [14]

Procedural pain is a critical venture for the hospitalist, as often the first experience a patient will encounter is the veni-puncture - either from an IV insertion or from a blood draw. Unlike an acute pain or chronic pain, procedural pain is a type of pain where the practitioner and team can mandate some control. It provides ample opportunity for a consult for the music therapist who can assess, attend, and treat the potential for fear and anxiety through integration on many levels. Integration can encompass mind/body strategies for the patient, team and environmental aspects of care. Music therapy can be seminal in fostering safety and collaborative treatment in the following ways: integration for the team with the patient using music, and integration of the procedure itself with easeful strategies inclusive of relaxation, breathing, release, and/or singing and/or instrumental play-all of which can generate a sense of trust in self and others. Perhaps most important in this process is the forging of a potential for resilience which promotes durability, fortitude, and endurance.

While recent studies suggest reduced pain in pediatric inpatients, a closer look at the outcomes indicates underutilization of pain management strategies. As I see it, the problem may not be a lack of focus or an oversight on the medical community's attempt to treat procedural pain, but rather a lack of sophistication in how we treat procedural pain. Procedural pain is distinguishable as the one kind of pain that most often involves a 'hands-on' approach, which can be perceived as most invasive and threatening.

Assessment

If experience is the golden teacher, and if meaning is to be constructed and well-defined from careful scrutiny of our clinical investigations, along with comprehension and undertaking of research, then managing pain with patients (inclusive of the anxiety often harbored by patients of all ages and diagnoses, and often accompanying family members as well) is best informed through careful assessment. [15,16] I would include the following as critical factors in pain assessment.

Critical Factors in the procedural assessment:

1. Age, gender, diagnosis and culture
2. Past hospitalizations and procedures
3. Past traumas, situational and developmental
4. Expressive/repressive qualities of verbal expression
5. Beliefs/reality/fears/fantasies related to current diagnosis & treatment strategies
6. Benefits/detriments of including family members (parents/children/spouse/siblings) during the procedure
7. Accidents and co-morbidities

A careful eye on these 7 critical factors as assessed by a doctor, nurse, music therapist, social worker, or child life specialist can ease the preparation for recommended strategies that will influence the impact of the procedure-provider's selected activity of the accompanying strategy. These factors separately

and collectively have been supported in the literature as being informant of how endurance of outcomes will be achieved.

Distraction

Miriam Webster's definition of distraction is:
"having one's thoughts or attention drawn away : unable to concentrate or give attention to something." The synonyms that follow this definition of distraction include "pulling away" or being "harassed, confused, or deranged especially by strong feelings."[17] While the research surrounding the technique of distraction as a tool for pain management is obviously in pursuit of removing what may be perceived as stressful or invasive, the engagement of doctors, nurses and other healthcare professionals who aim to distract during procedures has often been perceived by patients to be manipulative. No one can deny the intention of distraction to be anything short of well-meaning, yet its efficacy is questionable. And while dozens of articles seeking to support the utilization of "distraction" as a pain management treatment for patients who must undergo procedures have implemented and substantiated in their summaries "distraction" as a proven technique, a closer look at the data does not validate such efforts.

Non-pharmacologic techniques, such as distraction are often defined in the literature as watching television or a movie, or more recently playing video games –such as virtual reality [18] and while "self report" measurements reflect a decrease in pain experience physiological variables are mentioned by the authors of a recent review as needing further investigation.

Distraction should not be ruled out as an option for patients who are on-board for using such a tool. The position of this article is that it should be formally assessed as one option, and not taken as an assumption. Whether to include family members as part of the procedure, may or may not be useful, and needs to also be carefully assessed. Early in my hospital work, I observed and worked with clinicians who assumed best practice was to include parents and then saw the detrimental effects when the anxiety related to pain procedures were expressed in front of their children, which prompted this statement:

"It is not useful for a child of any age to watch a parent fall apart at the moment procedural pain is experienced. This is a time in which a patient needs strength and ego support. Parents with the best of intentions can exacerbate the child's pain and anxiety by feeding into their own expressions of fear during a procedure." [19]

Cards, toys, heat, ice, relaxation techniques, interaction with therapy pets (and for children: play) have been shown to lessen the experience of pain in children, and even symbolic play works well as an option prior to procedures.[20] These can be utilized as mechanisms of potential integration. The assumption that distraction is most useful is overlooking integration as an option that in the long run may provide more potency and longevity. This may be particularly advantageous for patients who will be required to endure additional procedures over their course of treatment-such as newly diagnosed diabetes or burn victims needing daily debridement. A best practice consideration mentions the notion of, 'one voice' [21] rather than many to ease tension. This is important as when patients express fear, tension or yell and cry, caring family members and staff often tend to become hyper vigilant and the non-collaborative 'jumping in' to protect, even with best intensions can add to the atmosphere of cacophony, which counteracts provisions and perceptions of a safe and trusting environment.

Music, music therapy and distraction

Much of the literature involving pain and distraction with music is authored by practitioners whose efforts are aimed to provide sensorial support through using familiar tunes for children, or in providing relaxation programs for adults. Most of the studies are not well controlled as far as the decision-making, institution, and/or reporting the music details related to choice, duration and impact of therapeutic benefit. Nevertheless, the intention in testing the observed and notable hypothesis that music can lesson pain perception of procedures is notable and has built our literature base.

Several articles stand out as representative of trends in the database related to music distraction in procedural pain. A recent study led by doctors compared noise-canceling headphones to music and to control.[22] 88 male patients received one of the 3 randomized conditions. Music recordings of Bach, were aimed to "distract subjects from the noise of the equipment." According to one of the doctors and co-author of this study, his "personal feeling is that this works because of distraction", (www.everydayhealth.com/pain-management/a-pain-playlist-using-music-for-pain-therapy.aspx Thomas Polascik, MD, director of the Society of Urologic Oncology Program and professor of surgery at Duke University in Raleigh-Durham, N.C). "Music distracted patients from the rather loud sound made by equipment used for the test, reducing anxiety better than the other two options."

Another article led by nurses compared the effects of meditation to music interventions in pre-selected choices of instrumental jazz, classical piano, harp and flute, nature sounds or world music.[23] To evaluate the impact of interventions on patient anxiety, pain and fatigue during imaging-guided breast biopsy, 121 women needing percutaneous image-guiding breast biopsy were randomized into 3 groups: guided meditation, music and standard care control group. In evaluating meditations (recorded speaking), versus meditations and "music interventions" (recorded music selected from playlists offered), versus a control, the meditation group reported the least amount of pain. Ideally in

an integrative experience, options of entrainment along with live and interactive cues within the music likely could have stronger enhancement/engagement of comfort options with potentially more assurance provided in the moment when singing or language is included. During biopsy, the meditation group listened to an audio recorded, guided, "loving-kindness meditation" rather than music or controls, who received the usual "supportive dialogue" from the biopsy team.

A recent study of 200 children (7 to 12 years old) requiring blood tests randomized into 4 groups: distraction cards, music, distraction cards and music, and controls included data obtained from interviews with the patients, their parents, and a blind observer before and after the procedure. Using Wong-Baker FACES and anxiety levels assessed using the Children's Fear Scale, the findings of these 3 different distraction methods (distraction cards, listening to music, and distraction cards and music) on pain and anxiety relief in children during phlebotomy. While pain and anxiety were seen in all 3 "distraction" methods during blood draws, no statistical significance was observed. Like so many "music therapy" articles in medical journals, this study had no evidence of music therapy, nor involvement of a music therapist. The music and cards used were assumed to be patient-preferred based on well-known folk themes of the culture, but in the end, was researcher-selected, and used passively, in recordings.[24]

Interestingly, music therapy studies on procedural pain are minimal. There is not so much distinction between live and recorded uses of music, and the definition stratifying "distraction" from "integration" has up until now, not been well described. In 1997, a compelling single case study combined the terms of "relaxation" and "distraction" –and notably this case study was with a patient who had chronic pain, but with acute episodes. The choice of music for the prescribed listening experience was based on 'somatron' music, as the music therapist used the vibration chair and seemingly did not assess preferred music of the patient or music related to her cultural background.[25]

One study of music therapy[26] and another of music therapy and child life find that utilizing parent raters[27] and/or outside observers and/or nurses, who rated young children's painful reactions to procedures provide resourceful means of evaluation. Having multiple perspectives can be an insightful way to measure painful perceptions and can serve to broaden how we can remain acutely informed of a young child's procedural pain experience.

Live music was used in debridement study with pediatric patients, but the songs utilized indicated that they were selected from pre-determined children's songs[28] or "age appropriate" songs[29]. Integration as a best practice model can forfeit control of musical selections in the moment, so that the music therapist can provide clinical decision making at the whim of the patient and substantiate influence depending on the context of the conditions (the practitioner, nurse technician etc) In this way the ultimate control and support is captured most respectfully and spontaneously and matches the complex needs of the moment.

Integration

Webster's definition of integration is "the act or process or an instance of
integrating: such as: incorporation as equals into society or an organization of individuals of different groups or coordination of mental processes into a normal effective personality or with the environment.[30]

As music therapists, we might be selling ourselves short by mere suggestion that listening alone or playing live music and "looking away from" will afford patients an easier trek away from the experience of pain experience. In fact, I have observed the opposite. With careful assessment and patient-informed resiliency techniques, we can guide patients through painful procedures and witness moments that inform them of how their focus on succinct elements of music can take them through procedures with minimal or no pain at all. The patient and his/her mind is not being distracted, it is in fact utilizing aspects of music's potency to gain assertion and directive-ness that can foster resilience. Once this confidence is maintained it can be suggestive and transferred to the next potentially stressful medical procedure.

In 2017, for the first time a working definition of procedural support included aspects of integration, providing inclusivity for a broad range of live music-based opportunities relative and discernable in working toward the central relationship, related to patient-need and catered music, which may be the tipping point for ensuring in-the-moment trustful efficacy of procedural pain:

"Procedural support in music therapy is the interactive use of music by a board certified music therapist during an invasive or painful medical procedure; the music is designed to specifically address a patient's needs including reducing anxiety and pain perception, and to encourage healthy coping behaviors."[31]

This definition, the result of a review included some past models and a seminal work that provided financially effective evidence and rationale for music therapy procedural support in hospitals.[32] Another well-defined model included a qualitative analysis of procedural music therapy in pursuit of the development of a music therapy theory. The analysis supported on-going assessment of the patient, based on the evaluation of the music and the therapeutic relationship in the moment.[33]

Critical aspects of practicality related to the efficacy of the ultimate integrative functionality of procedural music therapy should consider:

1. the completion of the procedure/s at hand
2. the resilience music therapy can provide for the body-

mind connection
3. creation of a context for the patient to experience a sense of "control" or at the very least, 'participation' in the procedure, as opposed to passively receiving the procedure (victimization)
4. the lasting impact post-procedure for patients-implying aspects involving continuity of care, mechanisms useful for future procedures
5. the fostering of continued trust between patient, therapist and future practitioners

The last is a seminal point, as trust of others is the cornerstone of effective treatment and is the basis of provisions necessary for the context of care throughout the treatment and in future treatment trajectories.

Risks of no plan

In utilizing "integration" rather than distraction, mechanisms for children and medical teams' capacity to endure procedural music therapy will likely render the greatest benefits for patients. While distraction necessarily seeks to pull patient attention away from the pain, and may, under certain conditions be warranted, it emphasizes its components as imposed.

Integration can call upon the patient to "come into the body by focusing on the breath, heart rate, emotional intention, and resonance. i.e., the feeling of pain itself. The music is used to integrate these four areas through harmonic, rhythmic and tonal synthesis. Integration empowers a patient to take action in understanding and controlling the hurt and discomfort."[19]

Holding down, "restraint" and use of force

Working in hospitals one can observe directly and indirectly (observation of procedures), children and adults being restrained by technicians, practitioners and even family members. Only a decade ago, a study acknowledged that children are generally restrained in supine position for IV starts, and that this is "a position that creates fear but is presumed necessary." The study inclusive of 118 children 9 months to 4 years examined parents' holding of their children in an upright position. Although the upright position didn't decrease the number of necessary IV attempts, it was seen as an effective way to decrease IV distress in young children.[34]

Trust of conditions and of others surrounding medical treatment is critical. Lack of trust and manipulation that is inconsiderate of patient-input may have potentially harmful and traumatic impact.

One of the most thorough reviews of music and music therapy's potential in the response and perception of pain organizes characteristics of application from early physiological laboratory studies, to audio-analgesic laboratory studies.[35]

The summary rendered largely efficient, yet not well-defined 'music effects' on observational and behavioral outcomes. It was inclusive of historical stimuli conditions, such as induced shock and white noise in the laboratory, to more extensive studies on music's effects in the OR and in painful dental procedures. The majority of these studies pay little attention to the music selection or the relationship between practitioner, accompanying therapists or specialists.

As the profession of music therapy has matured, alongside the development of integrative medicine, music medicine and music therapy may be better positioned to include patients' desires and responses to be the focus at center stage. The realization that the body's capacity to endure potentially painful procedures will likely have enduring ramifications for a patient's trust of him/her self and others.

Perhaps Erik Erikson described the relationship of 'inner' and outer' support best in his reflection of the 'trust versus distrust' primal stage in his well-known 'Eight Stages of Man':

"The general state of trust furthermore implies not only that one has learned to rely on the sameness and continuity of the outer providers, but also that one may trust oneself and the capacity of one's own organs; and that one is able to consider oneself trustworthy enough so that the providers will not need to be on guard, lest they be nipped."[36]

Of course, Erikson is discussing the development of infancy here, and it may seem oversimplified to relate such a premise to the treatment of patients (children and adults) as we conceptualize their capacity to endure procedures. However, the rudimentary premise that the diagnosis and maintenance within a disease trajectory can disassemble one's ability to maintain a sense of control, and our understanding of regression as a part of the disease process, therefore may serve herein as a presage that potentializes more forward-thinking.

Integrating 'integration' in research and practice

While the distinct implications that conceptualize our understanding of 'integration' as practitioners and music therapists who might aim to emphasize it as uniquely distinguishable from 'distraction' – the trust and endurance of procedures are likely to become more easeful as patients of all ages and diagnoses will be entrusted to participate in their care. While the majority of former music and music therapy studies of procedures may have proven 'music' effectiveness as audio-analgesic, not accounting necessarily for a 'music relationship' two studies stand out amongst the several dozen 'procedural music therapy' titles.

A clinical trial tested the pain relieving effect of live lullaby singing on behavioral and physiological pain responses during veni-puncture in [37] preterm and full term neonates. As acute and repeated pain, as well as the use of analgesic drugs, may have long-term negative impact on infants'

development and future behavior, this study supports the potential for complementary approaches to pain management such as music therapy.

Parent-preferred lullabies were performed live and standard care was provided for all neonates. Behavioral responses with regard to pain were assessed. Heart rate, respiratory rate and oxygen saturation were frequently collected. [37]

Although the live-lullaby singing for premature infants used during the veni-punctures may not have rendered statistical significance on the infant's pain score, arguably, the pain score measurement utilize as one of its distress components, the expression of crying (Premature Infant Pain Profile-Revised (PIPP-R) and Behavioral Indicators of Infant Pain (BIIP), which could be defined as a release-oriented coping strategy of self expression and protection. The observation of a significantly calmer breathing pattern in the lullaby versus control condition was observed in the pre-needle stage, and there were also some indications of fewer and shorter skin punctures with the singing of lullabies which were either parent-selected or culturally indicated.[37]

It has taken the medical community time and continuous research to recognize that neonates not only experience pain[38,39] , but also that the experience of infant pain can have traces of significant associated repercussions in later life. [40-42]

Another study providing succinct details advancing the uses of music with patients suffering from burns, includes several steps that surpass the usual recommendation to merely "distract." The focus of the music therapist in helping to advocate the relationship between the practitioner and patient is emphasized as key. This is one of the few studies that, although the music implemented is reportedly recorded, it is, in fact, "patient-selected" and the experience itself is directive and integrative. This is because one of the music therapist's central aims was to help the patient associate the music to the pain experience. In this way, one could characterize this study as 'integrative' as the therapist is providing ammunition for the patient to combat and furthermore potentially control future conditions of pain that might emerge in a future treatment condition.[43]

Procedural music therapy techniques involving what is depicted as 'distraction' of live improvised music have been well-described in debridement procedures, with strong suggestion that assessment prior to procedures guide stage-phase orientations.[44] Emphasizing an alternative to distraction, noting that if the distraction condition was not effective, improvisation and songwriting were nest to be instituted, provided early recognition and convincing rationale for an 'integrative' model, whereby a patient's ideas can be organized to become part of the in-the-moment procedure strategizing.[45] This provides assurances that the conditions of patient-expression can be honored. Efficacy of focus and engagement techniques were described[46,47] as music-based imagery (MBI) or music alternate engagement (MAE). These techniques were utilized in a more recent study[48] that reported little attention to the focus of the integrative needs of the moment and rather, proposes to: "work(s) on the premises that if conscious awareness or attention can be centered on a strong, positive, and pleasant stimulus rather than pain and other anxiety-provoking stimuli, the perception of pain can be attenuated." These intentions are well-meaning and may be useful, however a musical engagement taking integration into account may call upon the team to accept 'negative' expression, such as tears or loud unpleasant moaning. There is a musical context for every kind of expression to be held and honored. Drumming, rapping and free form vocalizing can be creative, containing, and reflect practitioners and therapists' acceptance of the patients' need to release.[16]

A study that did not include music in debridement wound care, compared 9 patients, ages 2-12, who were treated using psychological verbal interventions by 30 staff members trained in the two approaches: standard therapy (which emphasized staff control and patient distraction) with the experimental approach rendering patient-predictability and controllability of aversive 77 events. In the experimental group, treating patient control and focus on the procedure were emphasized, rather than 79 distracting away from the procedure. Comparison of groups on dependent variables such as depression and anxiety demonstrated that the experimental group fared better. There were significantly more maladaptive behaviors in the first 2 weeks of hospitalization, and higher significant depression measures upon discharge in the control group.

"It was my impression that controllability of aversive events played a major role in pain control. An increase in predictability alone did seem to be useful, but nothing seemed as effective in decreasing or eliminating pain as giving the patient control over an aversive event. Giving control of an aversive event to the patient was, in every observation, immediately followed by decreased protest and a facial expression and body posture which did not reflect pain."[49]

Procedural music therapy: An Integrative Model

The development of clinical strategies involving integrative techniques offer options that secure resilience based on the following postulates:

1. *Inclusion*: When the procedure is explained/ sung/ story-songed in steps (or verses) prior to, and as it will occur in the moment, and integration accompanied by a team-based course of action is part of the plan, the patient will experience group support, rather than the recipient or victim of something that is being 'done to' him/her.

2. *Control*: As the patient is provided with options to maintain directives, musically, such as a count-off prior to the insertion of a needle, or a decision of 'fast or slow' or an instrument (musical) for the therapist and/or person accompanying him/her in the procedure, trust of the process will ensue.

3. *Acceptance of Release:* Anxiety is associated with pain. It is therefore acceptable and expected or even encouraged that crying and/or yelling can occur at the moment of pain. The music can be entrained to provide dissonance to consonance at the point of release and move toward subtle, cued, resolve. (such as a mutual countdown for needle insertion-and a dissonant to consonant chord from yelling to toning).

4. *Patient Inquiry/Feedback*: During the procedure, the patient is given the reigns to provide check-ins for the team. ("stop" "go"-'musical conductor' cues) Any feedback related to temperature, unexpected occurrences involving temperature, desires for physical or emotional support are invited.

Discussion

The presentation of an integration model, rather than a distraction model of procedural music therapy is an outgrowth of evolution within my patient-centered care model of clinical practice. It is my hope that former initial studies of procedural support representing the seeds of integrative care, and reflecting in particular, the utilization of music therapy as a best practice treatment option, will afford patients and medical practices broadened opportunities for participation that fuel important choices within their procedural pain management. This is particularly critical because it is currently widely recognized that untreated acute pain has the potential to result in both immediate and long-term consequences. Live music therapy instituting an integrative approach utilizes aspects of medical music psychotherapy (15, 16, 19, 31, 33, 44, 45) whereby patients of all ages and diagnoses can use release strategies such as breathing, as well as singing, playing and many other activities afforded through careful assessment.

References

1. Localio AR, Lawthers AG, Brennan TA, et al. Relation between malpractice claims and adverse events due to negligence. Results of the Harvard Medical Practice Study III. *N Engl J Med*. 1991;325:245-251.
2. Raglio A, Filippi S, Bellandi D, Stramba-Badiale M. Global music approach to persons with dementia: evidence and practice. *Clin Interv Aging*, 2014;9:1669–76. doi: 10.2147/CIA.S71388.
3. Li CH, Liu CK, Yang YH, Chou MC, Chen CH, Lai CL. Adjunct effect of music therapy on cognition in Alzheimer's disease in Taiwan: a pilot study, *Neuropsychiatr Dis Treat*. 2015;11:291–6. doi: 10.2147/NDT.S73928.
4. Baird A, Samson S. Music and dementia. *Prog Brain Res*. 2015;217:207–35. doi: 10.1016/bs.pbr.2014.11.028.
5. Arroyo-Anlló EM, Díaz JP, Gil R. Familiar music as an enhancer of self-consciousness in patients with Alzheimer's disease. *Biomed Res Int*. 2013;2013:752965. doi: 10.1155/2013/752965.
6. Aalbers S, Fusar-Poli L, Freeman RE, Spreen M, Ket JCF, Vink AC, Maratos A, Crawford M, Chen X, Gold C. Music therapy for depression. *Cochrane Database of Systematic Reviews* 2017, Issue 11. Art. No.: CD004517. DOI: 10.1002/14651858.CD004517.pub3
7. Cepeda, M, Carr D, Lau J. Alvarez H. Music for pain relief. *Cochrane database of systematic reviews* 2006, 2, No. CD004843.
8. Shah, A Adil A, Zogg, C, Zafar, K, Nabeel,S. More. Analgesic Access for Acute Abdominal Pain in the Emergency Department Among Racial/Ethnic Minority Patients: A Nationwide Examination. *Medical Care*. 53(12):1000-1009, December 2015.
9. Stinson J, Yamad J, Dickson, A., Lamba J, Stevens B. Review of systematic reviews on acute procedural pain in children in the hospital setting, *Pain Res Manag*, 2008 Jan-Feb; 13(1): 51–57, PMCID: PMC2670810
10. Garland E, Pain Processing in the Human Nervous System: A Selective Review of Nociceptive and Biobehavioral Pathways, *Primary Care*, 2012, Sept: 39 (3): 561-571. PMCID: PMC3438523
11. Legrain V, Iannetti G, Plaghki L, Moraux A. The pain matrix reloaded: A salience detection system for the body, *Progress in Neurobiology*, 93, 1 January 2011, 93, 1, 111-124.
12. Birnie KA, Chambers C, Fernandez C, Forgeron P, Latimer M, McGrath P, Cummings, E, Finley, GA, Hospitalized children continue to report undertreated and preventable pain. *Pain Res Manag*, 2014. 19(4): p. 198-204.
13. Taddio A, Ipp M, Thivakaren S, Jamal A, Parikh, C, Smart S, Sovran J, Stephens D, Katz J. Survey of the prevalence of immunization non-compliance due to needle fears in children and adults, *Vaccine,* 30, 32, 6 July 2012, Pages 4807-4812.
14. American Academy of Pediatrics Committee on Fetus and Newborn and Section on Anesthesiology and Pain Medicine. Prevention and management of procedural pain in the neonate: An update. *Pediatrics,* 2016 Jan 25; [e-pub].
15. Loewy J. Music Psychotherapy Assessment. *Music Ther Perspect*. 2000,18. 47-58. 10.1093/mtp/18.1.47.
16. Loewy J. The use of music psychotherapy in the treatment of pediatric pain. In C. Dileo (Ed.), Music therapy and medicine: theoretical and clinical applications pp.189-206, Silver Spring: Maryland, AMTA, 1999.
17. https://www.merriam-webster.com/dictionary/distraction.
18. Indovina P, Barone D, Gallo L, Chirico A, De Pietro G, Giordano. Virtual Reality as a Distraction Intervention to Relieve Pain and Distress During Medical Procedures: A Comprehensive Literature Review A *Clin J Pain*. 2018 Sep;34(9):858-877. doi: 10.1097/AJP.0000000000000599.
19. Loewy J, MacGregor B, Richards K, & Rodriguez J. Music therapy pediatric pain management: Assessing and attending to the sounds of hurt, fear and anxiety. In J. V. Loewy (Ed.), Music Therapy and Pediatric Pain. (p. 45-56). Cherry Hill, NJ: Jeffery Books, 1997.
20. Child Life Council: Overview Of Child Life Council. (2015). Retrieved from http://www.childlife.org/
21. Sampson J, Allbright R. Distracting pediatric patients during painful procedures, Nursing, July 2018 - Volume 48 - Issue 7 - p 56–57.
22. Tsivian M, Kimura M, Chen SH, Gan TJ, Polascik TJ, The Effect of Noise-cancelling Headphones or Music on Pain Perception and Anxiety in Men Undergoing Transrectal Prostate Biopsy. *Urology*, 79 , 1 , 32 – 36.
23. Soo M, et al. Imaging-Guided Core-Needle Breast Biopsy: Impact of Meditation and Music Interventions on Patient Anxiety, Pain, and Fatigue, Jour of the American College of Radiology , 13 , Issue 5 , 526 – 534.
24. Aydin D, Sahiner NC. Effects of music therapy and distraction cards on pain relief during phlebotomy in children. *Appl Nurs Res.* 2017

Feb;33:164-168. doi: 10.1016/j.apnr.2016.11.011. Epub 2016 Nov 25.
25. Colwell C. Music as Distraction and Relaxation to Reduce Chronic Pain and Narcotic Ingestion: A Case Study, *Music Ther Perspect*, 15, Issue 1, 1 January 1997, 24- 31.
26. Swedberg O. Music Therapy as Procedural Support for Young Children Undergoing Immunizations: A Randomized Controlled Study, *Journal of Music Ther*, Volume 53, Issue 4, 1 December 2016, Pages 336–363.
27. Ortiz G, O'Connor T, Carey J, Vella A, Paul A, Rod D, Weinberg, A. Impact of a Child Life and Music Therapy Procedural Support Intervention on Parental Perception of Their Child's Distress During Intravenous Placement, *Pediat Emerg Care*: doi: 10.1097/PEC.0000000000001065,PMID:https://www.ncbi.nlm.nih.gov/pubmed/28225375, 2017.
28. Whitehead-Pleaux A, Zebrowski N, Baryza M, Sheridan R., Exploring the effects of music therapy on pediatric pain: phase 1, *J Music Ther,* 2007, 44(3):217-41.
29. Malone A. The Effects of Live Music on the Distress of Pediatric Patients Receiving Intravenous Starts, Venipunctures, Injections, and Heel Sticks, J *Music Ther*, 1996, 33, 1 Pages 19–33,
30. https://www.merriam-webster.com/dictionary/integration.
31. Beer L & Lee K. Music therapy and Procedural support: defining and identifying areas of practice, *Music Med,* 2017, 9, 4, 262-268
32. Walworth D. Procedural support music therapy in the healthcare setting: a cost effective analysis. *J Ped Nurs,* 20 (4), 276-284. Doi: 10.1016.
33. Ghetti C. Music therapy as procedural support for invasive medical procedures: Toward the development of music therapy theory. *Nord J Music Ther*, 2012, (11), 3-35. doi:10.1080/08098131.2011.571278
34. Sparks L, Setlik J, Luhman J, Plum X. Parental Holding and Positioning to Decrease IV Distress in Young Children: A Randomized Controlled Trial, *J Ped Nurs,* December 2007, 22, 6, 440-447.
35. Standley J. Effectiveness of Music Therapy Procedures: Documentation of Research and clinical practice, in ed, Adamek M. & Codding P (eds) Music Research in Medical Treatment, 1-65. Silver Spring MD: AMTA, 2000.
36. Erikson E. Childhood and Society, Eight Stages of Man, NY, NY: Norton & Co.1963
37. Ullsten A, Hugoson P, Forsberg M, Forzelius L, Klässbo M, Olsson E, Volgsten U, Westrup B, Ådén U, Bergqvist L, Eriksson M. Efficacy of Live Lullaby Singing During Procedural Pain in Preterm and Term Neonates. *Music Med* 2017, Vol 9, No 2 73-85.
38. Anand KJ, Sippell WG, Aynsley-Green A. Randomized trial of fentanyl anaesthesia in preterm babies undergoing surgery: effects on the stress response. *Lancet.* 1987;1:243–
39. Jones L, Laudiano-Dray MP, Whitehead K, et al. EEG, behavioural and physiological recordings following a painful procedure in human neonates. *Sci Data*. 2018;5:180248. Published 2018 Nov 13. doi:10.1038/sdata.2018.248
40. Goksan, S., Hartley, C. Emery, F. et al. fMRI reveals neural activity overlap between adult and infant pain. *Elife*. 2015:4:e06356.
41. Grunau, RE. Neonatal pain in very preterm infant: long-term effects on brain, neurodevelopment and pain reactivity. *Rambam Maimonides Med J*, 2013:4 (4): e0025.
42. Simons S, van Dijk M, Anand K., Roofthooft D, Van Lingen R., Tibboel D. Do we still hurt newborn babies? A prospective study of procedural pain and analgesia in neonates. Archives of pediatrics & adolescent medicine. *Arch Pediatr Adolesc Med*. 2003 Nov;157(11):1058-64.
43. Christenberry E. The use of music therapy with burn patients. *J Music Ther*, 1979, 16(3), 138-148.
44. Daveson B. A model of response: Coping mechanisms and music therapy techniques during debridement. *Music Ther Perspect*, 1999, 17(2), 92-98.
45. Edwards J. Music therapy for children with severe bum injury. *Music Ther Perspect,* 1998, 16(1), 20-25.
46. Fratianne RB, Prensner JD, Huston MJ, Super DM, Yowler CJ, Standley JM, The effect of music-based imagery and musical alternate engagement on the burn debridement process. *J Burn Care Rehabil* 2001;22:47–53.
47. Prensner JD, Yowler CJ, Smith LF, Steele AL, Fratianne RB. Music therapy for assistance with pain and anxiety management in burn treatment. *J Burn Care Rehabil* 2001;22:83–8.
48. Tan X, Yowler C, Super D, Fratianne R. The Efficacy of Music Therapy protocols for decreasing pain, anxiety, and muscle tension levels during burn dressing changes: A prospective randomized crossover trial, *J Burn Care & Res*, 31, 4, 1 July 2010, 590–597
49. Kavanagh C. Intervention with the Severely Burned Child: Report of an Experimental Comparison of Two Approaches and Their Effects on Psychological Sequelae, *J American Acad Child Psy*, 1983, 22,2:145-156.

Biographical Statements

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Rounds Corner

Musikalisierung: How a Despondent Mind Shapes Thought into Music: *A young boy's journey & music therapy from an insider's point of view*

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Abstract

Since the age of six I have dealt with a debilitating depression. Unwilling to simply roll over and let it have at me I've sought to turn the spotlight onto it; to study it, put it into strange places, learn how to understand it and the mechanism driving it. My aim has always been to discover what causes depression to shift or disappear entirely...for a time. Interesting for me was to find a pathway through music. This path has demanded a great deal of attention and energy over the last thirty years and will continue, I imagine, for the next thirty. Depression is both a blessing and a curse, putting me on the course I am on today as a music therapist, sound researcher, composer and maker of transformative theater.

Keywords*: composing, Musikalisierung, monsters, Mary Poppins, music and Words, therapy, depression.*

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Overture:

Since the age of six I have dealt with a debilitating depression. Unwilling to simply roll over and let it have at me I've sought to turn the spotlight onto it; to study it, put it into strange places, learn how to understand it and the mechanism driving it. My aim has always been to discover what causes depression to shift or disappear entirely...for a time. Interesting for me was to find a pathway through music. This path has demanded a great deal of attention and energy over the last thirty years and will continue, I imagine, for the next thirty. Depression is both a blessing and a curse, putting me on the course I am on today as a music therapist, sound researcher, composer and maker of transformative theater.

Since I began composing at age 12, I have been fascinated by how the state of mind influences creativity. My main research as a music psychotherapist has been to use the composition process with patients as a diagnostic tool as well as a means of therapeutic intervention. This is a logical extension of my work that, for many years, has bridged my interest in and passion for music and science. Most of my theatrical work deals with the complex operations of the human mind and the human condition. As an example, one of my thesis projects in the Musical Theater Writing program at NYU contained a scene in which a comatose woman reconnects with her daughter by means of music therapy.

This is my work and I want to explain to you what I do and why I do it.

Definitions

Musikalisierung: This is a common German term meaning 'to transform an idea or concept into sound/music,' for example, Beethoven's Symphony No.6 could be considered a Musikalisierung of nature. One can also turn data into sound/music which can be conventional or abstract. I am interested in how a state of mind influences, in a good or a bad way, how music is created.

Composing: For me, composing is developing, organizing and rewriting a musical idea with a focused intention to peel away all the parts that are unrelated until the cell of the thought or idea (a motif, or a specific sound, or orchestral idea, etc.) is revealed and formed into a bigger musical construct. Composing is the transfer and transformation of thought into music.

Depression: Clinical depression has a severe effect on one's ability to compose a new piece of music. It takes away the ability to have a clear thought or idea and it can limit an ability to compose in a variety of styles, such as writing "happy"

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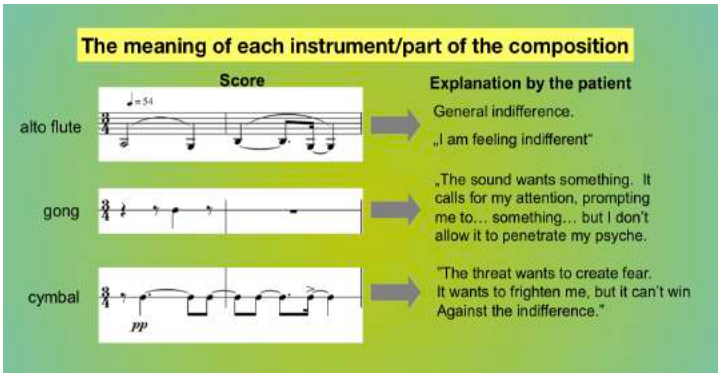
music which does not come easily in the midst of depression. It can also cause feelings of immense insecurity and maybe even forms of delusion preventing any work from getting done. Since much of my work is collaborative, I have also observed my colleague's or student's patterns of behavior that tend toward depression, such as feelings of 'getting stuck' during the writing process. It is because of depression that I am fascinated by the composition process and how collaboration is influenced by our state of mind.

A New Method of Healing Using the Composition Process:
I have developed a new method of using the composition process in a complex way to understand how composition can be provided as a healing tool for patients with a variety of diagnoses. My aim is to see, once I understand how the mind creates a certain way of composing, if there is an individual way of helping my patients find new paths. By using a guided process I map a connection between the probing exploration of a theme, melody, instrumentation or acoustical space to create a multifaceted musical approach. I narrow down the specific and varied meanings, similar to the way I compose, which helps to facilitate my understanding of the patient. I then help my patient shape a new context for their situation. In this article it is my intention to explain where my ideas originate and demonstrate, in a most personal way, how they have shaped my understanding of musical creation and language of the mind.

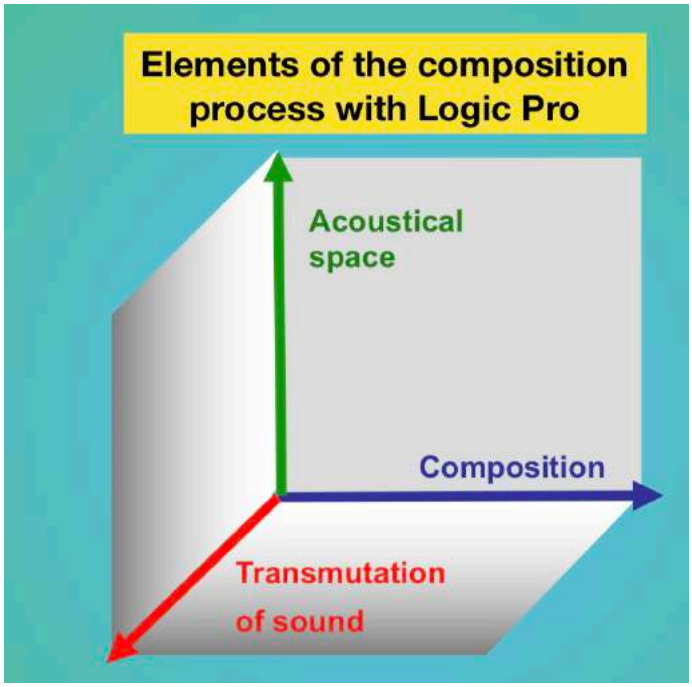
In each session I follow a certain procedure which I have developed over several years.

There are three important parts within the composition process regarding the music.

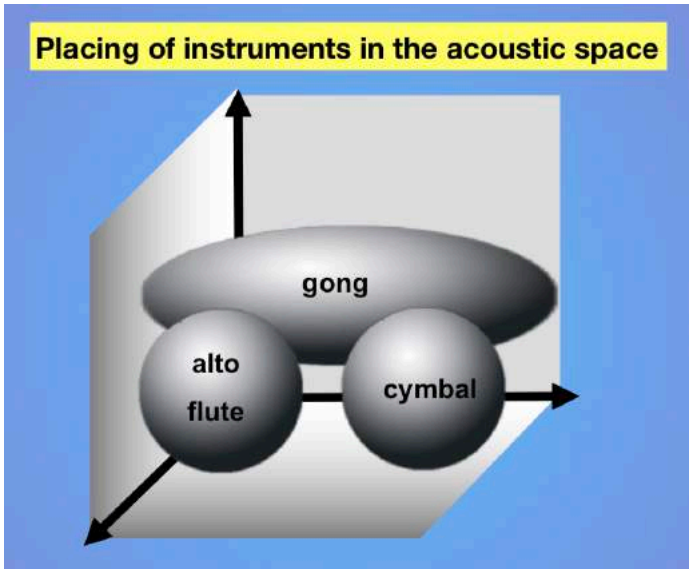


- Composition with symbolization of all instruments and parts
- Musical effect (the quality of the different elements within a conflict)
- The placing of those instruments/sound within the room

Another important aspect in the composition process is the use of musical effects such as distortion/pitch shifter, which gives the patient another way of conveying specific qualities of the conflict. For example, I may ask, "Is this a perfect representation of the sound you are trying to create? Should we change the volume? Or compress or elongate the sound?"



Finally, and perhaps most importantly, I ask my patient to place this sound within the room we are in together. "Is it a sound that is shifting from left to right, right to left, is it just steady, is it more in the back or overcrowding all of the other sounds?" These are critical questions that point to the various solutions I can offer.



Methodological challenge:
The key question for my methodology is, what can I learn about another human being (who may have little or no musical background) through his/her way of creating an internal musical world? That is, how can I turn them into a "composer" for purposes of communicating with me? Composition is a problem-solving skill. Once you set a note, create a motif or other musical structure, you determine your own set of rules. These rules then create a certain melodic, harmonic, rhythmic language and texture. In communicating with me, therefore, every part of my patients' composition receives a significant symbolization.

Further Objectives:
My theory of this composition process is in an experimental phase and does not have a control group. The focus right now is on recreating sounds. Many will ask, "Will anything interesting come out of this work?" and it is a good question. I believe it may, and if so, then the next step to take will be a more clinical approach. I would then like to share my work with psychologists, psychiatrists, and others to see if it generates further clinical investigation and applications. This is my intention as I pursue this project. I will need to work out basic methodological challenges with regard to how patients communicate with those seeking to listen to and record the sounds in their minds. I consider this challenge integral to the recording itself.

This article is a culmination of my insights and research as I have described them above. In the remaining sections of this article I offer myself as a self-aware subject, analyzing depression as it took hold in my young boy's mind and observing how Miky tried to cope. As one who experiences extreme depression first-hand I know the mechanisms of music therapy that can be used to a patient's benefit. The following is my humble attempt to give you a point of view from inside depression, how it took hold and how its grip can be broken by the effects and benefits of music therapy.

This is in service of providing a deepened awareness of the work we all do in this field.

The Story of Miky's Monsters

In the Beginning…before depression moved in as a permanent tenant
Miky was born into a safe and loving household, growing well and healthy for the first three years of his life. His young days were spent partly in Munich and partly in the Austrian alps. His mother was a very busy and successful sound engineer, his father a healer, artist and Hindu priest. Like any other child at that age Miky seemed to develop and thrive. His parents fostered his creativity through playing outside and allowing him to discover his environment, surrounded by nature. After those three blissful years of comfort for the boy, things shifted as arguments between his parents grew strong and disruptive.

Music introduction…pain and fear in the real world that made a door in the mind
At the age of four Miky was introduced to recorder and piano by his grandmother. This was not a happy introduction as she would hit on his fingers when Miky would play wrong notes. Whether it was through terror or a deep seated and inexplicable love the boy kept with his music studies. While his grandmother tried her best to connect with her grandson through music her strictness created much fear in Miky. He would wake in the middle of the night with nightmares about his grandmother coming to him, finally falling back to sleep relieved at the realization that the bad dream was not real.

Frequent trips to India and Saturn…inheritance of a mindset
Miky's father was a highly intelligent and charismatic person from a well-known German family of scientists. Often he would talk about the frequent trips he'd just taken to India (where he'd never been because he'd never actually gone anywhere) and other far-off places...like Saturn where he'd visit with the help of his alien friends. This had seemed to be a lovely and interesting thing to Miky - a young boy fascinated by magic - but it was a source of grave concern to Miky's mother. His father's gregarious ways allowed him to connect with like-minded people and eventually landed him a spot on Austrian television where he talked about aliens and alien abduction on a program called UFO's & Alien Encounters. Here he discussed aliens and alien abduction on a national platform. It was impossible for Miky to discern what was real and what was delusional on his father's part.

Hatred in the real world made manifest in the mind
While imagined trips to India and Saturn could have been seen as harmless and amusing, they became entrenched behavioral problems. Miky could feel his mother's increasing sorrow as his parents' marriage fell apart before him but the young child was unable to fix it. Added to this stressful situation was his father's endless vitriolic and expressive hatred of Germans. Young Miky internalized all this sorrow and hatred, merging it with his own pain and confusion. The boy didn't quite know how to respond and was finally left with a persistent thought that maybe there was something intrinsically wrong with him that should be hated, too.

First grade offense…school
Miky came into first grade and in the beginning was praised for his intellect. It was soon discovered that written language could be confusing for certain minds like his; Miky was only much later diagnosed with dyslexia and ADHD. The child once considered smart and hailing from a family of brilliant scientists, was soon declared mentally and intellectually behind. He went more and more into hiding in school with a growing fear of his teachers. He would rather pee his pants in class than ask to go the restroom. His mother, doing the best

she could, assumed the teachers were the experts in education and she never questioned or pushed back at them and their assessment of her boy.

The first attack…pain and fear in the imagined world
One day Miky felt a strange sensation. He was playing with his toys when suddenly a strange feeling arose inside him, a shadow of unimaginable heaviness settled in and took over his chest. It felt to him as if many creatures, monsters full of bad and heavy thoughts, had taken over both body and mind. Miky was unable to form any clear thoughts. He could not distinguish between his authentic voice and a streak of silent repeating incomprehensible voices causing great mental pain. It came all at once as if someone had flipped on a switch that started a grey, heavy sadness. Fear had been his frequent companion up to now but this was something new. This was something he couldn't put into words. This was something that made no sense at all to the young boy. This was deeply alarming.

Mary Poppins as antidepressant
This strange, indescribably terrifying feeling for the young boy stayed heavily in his chest the entire evening until he finally would be asked by his mother to take a shower and go to bed. Miky had just seen Mary Poppins (the movie version from 1964) and while standing in the shower he would remember one of the songs that he felt oddly connected to, "Supercalifragilisticexpialigetisch" (the movie he'd watched was translated into German.) He didn't know why he felt a connection he just knew he felt one. Maybe because it was the musicalisation of his feelings about written language and how often it wouldn't make any sense to him…that was a thought for a later time in his life. Whatever it was in this moment he slowly started to sing "Supercalifragilisticexpialigetisch" humming the rest "hm hm hm hm hm hm…". He felt a bit better. It wasn't the length of the word, there are many long words in German, it was that the word itself made absolutely no sense. It had a fascinating sound and that sound had a calming effect on him. If you were to have asked at that moment he could have said that the word itself understood his mind, as if Miky and the nonsensical word had gone into resonance. The boy repeated the line and sang faster and faster until he'd made it into his own musical mantra. All of a sudden the grey and heavy sadness left, as if the switch had been flipped to off. He should never forget this moment in which he would be able to use music and words to get out of his inner cycle of darkness and from that moment on Miky would start to see and hear the purpose of music in a very different way. Music had the power to make him feel better.

Monsters move in
This moment made the monsters go away for a while and leave him happy, singing and in tune with the world but it was not to last long. The next time his shadow tenants made a visit they would come in force and stay for good. Ten years pass and the boy continued dealing with depression while learning more about music. He was starting to analyze his own mind and feelings while improvising and composing in hopes that he would be able to recreate the relief he had experienced by singing a simple Mary Poppins tune… "Supercalifragilisticexpialigetisch."

In 1992 at the age of 15, when music therapy was rather unknown in Germany, Miky had an obsession for connecting musical composition and medicine. He learned as much as a young boy could by doing practical training in medicine at hospitals, going to introductory courses in music therapy, secretly auditing medical courses at the University in Munich and so on. He was also becoming very good in composition. Miky was on the path now and he would go on to a musical high school, continuing his classical modern music and dramatic pieces but also writing healing pieces to be performed at hospitals by himself and with his classmates.

The Question that leads to more questions
While there would be many questions that would run through the boy's mind, one question came to define Miky's life-long question and journey:

How does the mental state translate into music through composition and in which way do these states, especially depression, interfere with or even destroy musical creation?
Miky was entrenched with depression and a driving mission to connect musical composition and medicine. Soon he developed concepts about the possibilities of healing mind and body with music, such as using specific frequencies to impact certain areas in the body. He learned about Indian music and Chakras. This served further connections to his past as he had grown up with Indian music and played the Veena, introduced by his father. He was now thinking about the problem of staying in one's own mental cycles when improvising or trying to search for new musical worlds. This led to more questions about the general idea of understanding a mind and its thought process through the way person creates music.

Now a teenager, Miky became Mike and he flourished despite depression by leading a popular band called *Authentic Dreams* while he worked on his first one-act opera in 10th grade titled, 'Between Delusion and Reality.' His modern opera was about a young boy who had fallen deeply in love with a creature half animal, half woman but their love had no chance of survival and one day she would become an eagle and he would never see her again. This was how Mike coped with the inevitable teenaged angst of unrequited love. His early piece also evidenced the internal work he was doing with the dualization of two divergent parties. One party was trying to convince him there was a good purpose in life, while the other party showed him only the destruction and

meaninglessness of life. The monster party kept telling him there would be nothing to do but shut down his perception and close out the world. Their argument was very compelling.

In the world, Mike found people who believed in his talents. The young composer was a rehearsal pianist for young singers. He ended up conducting a choir, a small chamber ensemble and trio where he played piano. More and more of his compositions were performed and the audience, accustomed to hearing light pieces from young optimistic musicians, were uncomfortable with dark work about a young boy who basically decided life had no purpose. What was uncomfortable for the audience was a pathway to freedom for the young composer whose world had now become filled with a driving purpose. Music and words were Mike's medium; he was able to express how a mind might feel.

Yesterday gives me Today…from third person into a personal narrative

Today I am a professional composer. I have spent my life dealing with depression while I work worldwide writing concerts, musicals, operas and scoring film. On numerous occasions I've had to compose music with the monsters in my mind telling me strongly, "You are the worst composer to have lived. Your music sounds like crap. You will never ever be able to finish a piece…" and so on. As my survival depends on composing, I constantly deal with my mind monsters. I go through the same process every time I'm hired for a new piece and I always look for ways to quiet my monster tenants.

Mary Poppins Makes A Return

A couple of years ago I had a particularly notable moment. Sleep deprived from a long year of constant composing, I had a large dramatic work to finish with a deadline that was looming dangerously before me. One night I was working, pounding against my piano for hours writing one bad song after the other. I felt there was absolutely no creativity left in my mind and the weight of the hopeless world weighed heavily in my chest. I stopped pounding, too exhausted to continue, and looked at my songs. I knew I was a good composer who had been doing this for many years. I knew what I was capable of and most of all I had evidence of written pieces that were really quite *good*! So I asked the question; "What is the difference between those good pieces I had written and this crap? Why is what I've just written so bad?"

I pulled out an opera written several years before to acclaimed success and I looked at my music - not as composer but as musicologist and music therapist. There on the page was a very, very simple and profound difference. All the pieces I had written that day had flat melodies. The rhythm and the harmonies were fine but the melody reflected the way I had been feeling, basically tired and numb. There was no life, there were no up and downs, no interesting falls or jumps, no motifs that would show a growing idea pulsating and developing through the piece.

Looking at my opera I saw life in that score, all the ups and downs and twirls and spins, so my music therapist-self spoke to my composer-self and said: "Let's try an experiment. You have to finish this piece today. People tomorrow need to rehearse what you have written. Why not just try and bring more up and down here? Why not just try and bring more movement into your melody *even though* you don't feel like moving at all?" After only a couple of minutes with this experiment something shifted and I suddenly broke free of the monster's weight. I literally had just composed myself out of my depression in that moment. The analytical process of restarting my brain, to compose myself out of the mind patterns that had taken me down, helped reboot my mind. Almost 20 years after my first experience with Mary Poppins I had consciously brought myself forth out of depression. This answered some of the questions that I knew where there but hadn't fully understood up to now. I had developed and researched numerous ways of using composition and the composition process in music therapy, now I saw the mechanism and I began to work on my master thesis.

Moving ahead in life:

The questions of a young Miky are the essential inquiries that keep Mike moving ahead in life. As my research continues so do my questions: "Can I compose music in a certain way so I can help with specific problems of the mind? How can I find a way to compose and create music outside what is known to me? If there are certain things that shine through different kinds of disharmonies of the mind, would there be a way to use the composition process to affect the mind in certain ways?" My work continues to evolve as I search for new ways to connect music with words and theater. Now I am able to mentor others in music theater writing and creating transformative theater that frees the mind. The questions will continue throughout the remainder of my life as they open up the world for me and those I connect with.

Biographical Statements

Peter Michael von der Nahmer is a composer, sound researcher, music therapist and maker of transformative music theater based in New York City. His American/German/Cuban heritage influences the questions of identity, complexity, and transcendent connection that shape his music. He has written over 30 works for music theater and dance, and over 100 works for concert and film; many have received national/international awards, and been performed around the world. Most recently he was awarded the 2016 McKnight Visiting composer residency, where he created new musical theater pieces with and about the people of New Ulm, MN focusing on the German-American history. In June 2017 he received an honorable mention by the New York

Philharmonic in the New World Composition Challenge with his piano piece "From Here to There".

Mike holds a B.A. in composition from the University of Music and Performing Arts, Munich and an M.A. in Music Therapy from the University of Augsburg. He holds certificates in Film Scoring from the UCLA, and in Music Pain Treatment from the Magdeburg-Stendal University of Applied Sciences. In May 2015, he received an M.F.A. in Musical Theater Writing from New York University, where he held a Tisch School of the Arts Departmental Fellowship.

Mike's barrier-breaking, eclectic background explains his passion for music both as artistic expression and as a means to connect disparate cultures. His desire to be an agent of radical connection – to literally create harmony out of apparent dissonance – is his defining motivation.

Book Review

Introduction to Music Therapy Practice (2018).

Annie Heiderscheit and Nancy Jackson

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Paperback | **Publisher**: Barcelona Publications (2018) | **Language**: English | **ISBN**: 978194511304 | **E-ISBN**: 9781945411311

An overview of music therapy clinical practice in the 21st century, structured around the ways music therapists engage clients in music experiences – re-creating, composing, improvising and active listening. The text includes forty-eight case illustrations from twenty-nine clinicians practicing with diverse client populations. These cases demonstrate how the music therapist adapts the method to meet the unique needs and interests of clients. The benefits of these methods are outlined, and representative research is provided to support clinical applications. Ten context examples written by ten music therapists experienced in those settings are included that illustrate similarities and differences in the roles music therapy may play in treatment. An historical review of the profession is included, providing perspective on the evolution of music therapy as a profession to date. A resource section of professional organizations, peer-reviewed publications, and publishers concludes the text. The text is structured for use by instructors who teach introductory music therapy courses in which the content is presented through an experiential approach, and formatted to provide flexibility for good fit into the instructor's course.

Keywords: ***music therapy, clinical practice, music therapy education, training, case examples.***

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Introduction to music therapy practice, by Drs. Annie Heiderscheit and Nancy Jackson, is a timely new 2018 publication which includes: 15 chapters, helpful tables, figures, terms and an index in just over 300 pages. The language used in the book is straightforward, making it an enjoyable read, where information can be easily acquired and retained. Academically, it is suited for undergraduate students, but it is also a text others may want to pick up to learn more about music therapy; such as allied healthcare professionals, caregivers, or future music therapy clients. The overall structure of the book is centered on the ways music therapists engage their clients in the various music therapy experiences: Section A: re-creative; Section B: receptive; Section C: compositional; and Section D: improvisational. A total of 48 short one to four page music therapy case examples are offered throughout the book by practicing music therapists, to provide direct illustrations of music therapy in current practice.

While the text was written and edited by Heiderscheit and Jackson, Chapter 11: Clinical improvisation and the Nordoff-Robbins approach to music therapy, was written entirely by Dr. John Carpente.

The introductory chapter, outlines how music is a therapeutic medium, and lays the groundwork for understanding why music therapists and others use music in connection with health. It also provides the definition of music therapy which can help readers to understand that not all music experiences in relation to healthcare are music therapy. This chapter also provides a potential launching point for instructors to dialogue in in-class or online classroom environments on the various music experiences.

Each subsequent chapter offers useful definitions of terms that were used in the chapter, again making it a valuable book for a variety of audiences who have different knowledge and backgrounds. An appendix closes the book with helpful information on music therapy professional organizations, research and publications. The authors have purposefully laid out the text in 15 chapters, to correspond to the typical 15 week academic college/University term in the United States. They have limited the amount of literature and research intentionally, to make this a textbook consideration for educators to introduce students to music therapy clinical practice.

The closing chapter on Music Therapy in Historical Context is a creative way of presenting the history as opposed to diving into that material at the onset of the book. By instead beginning with the presentation of the various populations and ways music therapists engage their clients, the text is perhaps more enticing for students, and a way to get them excited about the profession from the start. The twelve tables

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spread throughout the book are instructive for students and the majority of them are examples of procedures for including a technique or an approach to music therapy, such as singing or song composition. These tables and the figures, as well as the case examples further help to break up the text; and considered with the length of each chapter (which has appropriate page ranges for a weekly student reading) make it a suitable choice for an undergraduate student.

The populations covered, and the music therapy techniques and/or music discussed are broad. Table 1 provides a list of those offered in the case examples from Chapters 2-13 in the text.

Table 1

Population or Issue/Concern	**Recreative:** **Music Therapy Technique (s)/Music**
Pediatric Intensive Care Unit	Lullabies
Parkinson's Disease	Therapeutic Singing
Down Syndrome	Multiple Techniques
Cerebral Vascular Accident	Playing Organ
Hospitalized Newborn	Familiar Songs
Memory Care	Familiar Songs
Mental Health Group Home	Performing
Cerebral Palsy	Playing Keyboard and Performing
Visually Impaired Group	Multiple Techniques
Bone Marrow Transplant	Multiple Techniques
Paediatric End-of-Life Care	Multiple Techniques
Autism	Familiar Songs
	Receptive: **Music Therapy Technique (where applicable)**
Mechanically Ventilated Patient in ICU	Active Listening
Caregiver Support Group	Music Relaxation
Eating Disorder	Bonny Method of Guided Imagery and Music
Chronic Pain	Bonny Method of Guided Imagery and Music
Hospice	Multiple Techniques
Substance Abuse Treatment	Multiple Techniques
Osteopetrosis Congenita	Multiple Techniques
End-Stage Dementia	Sensory Stimulation
Procedural Support for Organ Transplant	Music Listening and Entrainment
Breast Cancer	Multiple techniques
Acquired Immune Deficiency Syndrome	Singing, Music and Relaxation/Imagery
Family-integrated Music Therapy in Neonatal Care	
	Compositional: **Music Therapy Technique (where applicable)**
Dual Diagnosis	Some Composition
Trauma	Song Composition
Bipolar Disorder	Autobiographical Collage
Developmental Disability	Multimedia Composition
Pancreatectomy Transplant	Composition
Social Alienation	Composition
Adolescents with Social Struggles	Composition
Early Recovery	Composition
Halfway House	Songwriting
Youth (Anger)	Songwriting
Transgender Youth Undergoing Cancer Treatment	Songwriting
Older Adults	Song Transformation
	Improvisational: **Music Therapy Technique (where applicable)**
Autism	Nordoff-Robbins
Selective Mutism	Nordoff-Robbins
Forensic Patient	Improvisation
Older Adults (Memory Care)	Improvisation
Therapeutic Day School (Safety)	Improvisation
Social-Emotional Development	Improvisation and Vibro-acoustic
Developmental Cognitive Disability	Multiple Techniques
Social-Emotional Development	Improvisation-based play
Coordination and Relationship	Improvisation
Inpatient Mental Health	Improvisation
Foster Care Youth	Improvisation
Residential Eating Disorder Treatment	Group Improvisation

One thing to note, is that the case examples are heavily based on music therapists working in the United States. There are some examples of others practicing in various countries around the globe, but this was the one thing that stood out to me as a certified music therapist working and teaching music therapy, and music and health in Canada. Music therapy looks quite different in diverse regions of the world, and as long as the reader is aware of this, I think where there are large differences in populations served or policies and practice, the case examples provide a spring point for discussion in helping students understand where music therapy could be expanded in their country; and how it looks in another country. Even within Canada, there are certain areas where music therapy is more widely available than other parts given our large geographic area and our relatively small population.

I recommend this book to educators who are looking for a textbook for undergraduate students for an Introduction to Music Therapy, or Introduction to Music in Health Care course. It seems it would be well suited for classes where the students are not necessarily music therapy majors, but come from other fields learning about the discipline of music therapy, or more broadly music in healthcare. I also envision Chapter 1: Introduction, and Chapter 14: Music Therapy in Different Contexts; alongside all of the case examples to be utilized in various music therapy courses depending on the academic institution. For example, in a class where students are learning about assessment and documentation, Chapter 14 would fit nicely into discussion about documentation standards and typical requirements in various music therapy contexts. These chapters would also fit into a class where students are preparing for their first clinical placements.

Congratulations to the authors who contributed to making this a valuable new music therapy resource. I encourage (you) professionals, colleagues and students to have a look inside for a great read.

Biographical Statement

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